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VISION

The vision of the journals is to provide an academic platform to scholars all over the world to publish their novel, original, empirical and high quality research work. It propose to encourage research relating to latest trends and practices in international business, finance, banking, service marketing, human resource management, corporate governance, social responsibility and emerging paradigms in allied areas of management. It intends to reach the researcher's with plethora of knowledge to generate a pool of research content and propose problem solving models to address the current and emerging issues at the national and international level. Further, it aims to share and disseminate the empirical research findings with academia, industry, policy makers, and consultants with an approach to incorporate the research recommendations for the benefit of one and all.



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A' Grade by NAAC. Recognised by UGC Under Section 12 B
Coimbatore - 641 043, Tamil Nadu, India



UGC Sponsored
International Conference on
Bridging Innovations in Sports, Education and Nutrition
8th & 9th February 2018



Jointly Organised by
Department of Physical Education
Department of Education
Department of Special Education
Department of Food Service Management and Dietetics

Venue : Thiruchitrambalam Auditorium



Dr. T.S.K. Meenakshisundaram

Managing Trustee

Sri Avinashilingam Education Trust Institutions

Coimbatore - 43

**Message**

Human beings have been exploring new frontiers to know the unknown. Education has grown from the conviction that it is a basic human right and that it provides the foundation for a more just and democratic society and seeks to provide appropriate responses to a broad spectrum of learners' needs in both formal and non-formal settings. All efforts – physical, human and material, are being made to make education systematically and progressively free for all people even in inclusive set up. Further, the educational system is equipped with enhanced and flexible curriculum programmes at all levels.

This International Conference on “Bridging Innovations in Sports, Education and Nutrition” provides an opportunity for the individuals of all categories to expand the wisdom of knowledge in the area of Physical Education, Education, Special Education and Nutrition since these areas are inextricably interwoven with one another for the promotion and the development of the individual into wholesome personality. The departments of Physical education, Education, Special Education and Food Service Management and Dietetics have taken a valuable venture to motivate the students, academicians, scholars and teachers to widen their knowledge in these areas so as to emerge as future experts to enlighten the people to establish a welfare society.

I wish every success to the organisers

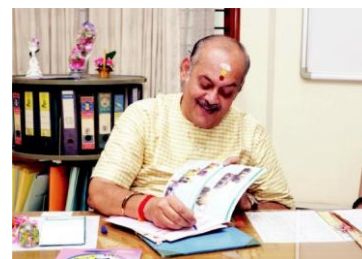
Padmashree Dr. P.R. Krishna kumar

Chancellor

Avinashilingam Institute for Home Science and

Higher Education for Women,

Coimbatore -43



Message

Our Institute always believes in the holistic development of our students. Learning to appreciate the values while excelling in self development, scientific knowledge will contribute to the all round growth of our learners with strong foundation of Indian values. A sound mind in a sound body can be achieved only if we concentrate on wholesome development. This can be achieved only when the education programme in schools, colleges and other higher educational institutions should be designed to promote the knowledge and skill not in one particular discipline but it should blend all the important and relevant facts of knowledge which are very essential for human growth and development. With this motive in mind, the departments of Physical education, Education, Special Education and Food Service Management and Dietetics have planned this great task of a Two day International Conference on “Bridging Innovations in Sports, Education and Nutrition” so as to enlighten the minds of students , academicians, scholars and teachers. This forum will definitely explore, expose and bridge the hidden innovations in the field of Education, Physical education, Special Education and Nutrition by the proper usage of knowledge and skill of the experts through their deliberations in the conference.

At this juncture, I should appreciate the bold step taken by the organisers to blend the innovations in these four disciplines. I wish that God Almighty should shower His Blessings upon them for the successful conduct of the Seminar.



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Coimbatore - 641 043, Tamil Nadu, India

Dr. Premavathy Vijayan

M.Sc., M.Ed., M.Phil., Dip.Spl. Edn. (U.K.), Ph.D.

Vice-Chancellor

7.2.2018

Date :



Message

I take great pleasure and joy in welcoming every one of you to the UGC sponsored International Conference on **"Bridging Innovation in Sports Education and Nutrition (BISEN-2018)"** at our institute scheduled between **8th & 9th February, 2018**. As we are in the eve of diamond jubilee celebrations of our Institute, this temple of learning has always provided avenues for cross disciplinary researchers, academicians and practitioners to re-search re-enforce and innovate novel and sustainable measures and technology to address the community at grass root level, particularly the women and girl children. I am sure that the deliberations of the conference and the post conference workshop by the key note speakers, panel members, academicians and scholars will provide ample opportunity for knowledge and resource sharing among the conference participants.

To instill thirst for knowledge among conference participants, scientific papers accepted for oral and poster presentations are collated as a special issue of publication in the Asian Journal of Multidimensional Research. Being an academician and a scientist myself in the field of Special Education, I eagerly look forward to an insightful, intellectual feast on bridging innovations at multi center level to culture a healthy society. I welcome all the speakers, delegates and scholars and hope that you will enjoy your visit to our Institute.

I wish good luck and best wishes to the organizing team.

Premavathy Vijayan
7.2.2018

Premavathy Vijayan
Vice Chancellor

**Avinashilingam Institute for Home Science and Higher Education for Women**

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Coimbatore - 641 043, Tamil Nadu, India

Dr. (Mrs.) S. Kowsalya

M.Sc., M.Phil., Ph.D.

Registrar

Date :

**Message**

I am immensely happy to learn that the departments of Education, Special Education, Physical Education and Food Service Management and Dietetics are organizing a UGC Sponsored International conference on "Bridging Innovation in Sports, Education and Nutrition, (BISEN-2018) between 8th and 9th February, 2018. I understand that the scientific papers of the Conference Proceedings are being brought out as a special issue in the Asian Journal of Multidimensional Research in commemoration of the Diamond Jubilee celebrations of our Institution.

Exploration of proactive innovations and developmental activities to foster a healthy society is the need of the hour. I am sure that the deliberations of this conference will definitely bridge the opportunities for knowledge sharing and create multiple avenues for teachers, physical educators, counsellors for special children and dietitians to enhance their professional skills and make them competent to meet the demands of their stakeholders and build a healthy nation. I wish the Conference all success and urge the Organizers of this International Conference (BISEN -2018) to send the recommendations of the Conference to policy makers to further implement suitable strategies for the community at large.

S. Kowsalya
REGISTRAR



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Coimbatore - 641 043, Tamil Nadu, India

Date :



Dr.N.Vasugi
Dean, Faculty of Home Science
Avinashilingam Institute for Home Science and
Higher Education for Women
Coimbatore -43

Message

It gives me immense pleasure to note that the departments of Education, Special Education, Physical Education and Food Service Management and Dietetics are organizing a Two day UGC sponsored International Conference between 8th & 9th February, 2018 on the theme "Bridging Innovation in Sports, Education and Nutrition where eminent scientists, faculty members and professionals would deliberate on various important themes and sub theme of the Conference.

I am also happy to learn that a post conference workshop on 10th February, 2018 for teachers, physical educators, counsellors and practicing dietitians is being organized on the theme to train our budding professionals to meet the challenges in the society.

I congratulate the organizing team for bringing out a special issue of scientific articles in the Asian Journal of Multidimensional Research on the occasion of the Conference. I am sure that the deliberations in the conference will bridge the innovations in the field of education, special education, sports, nutrition and dietetics and will pave way to empower and nurture the responsible citizens of the country.

I wish the organizers the very best in the successful conduct of the conference

N.Vasugi
7/2/18

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Coimbatore - 641 043, Tamil Nadu, India



Dr. T. Geetha

Dean, Faculty of Education

Avinashilingam Institute for Home Science and Higher Education for Women,

Coimbatore -43

Message

The high speed of globalization in the 21st century enjoins the Asian countries to give greater significance to higher education as a most potent tool against poverty, environmental degradation and violations of human. India takes enormous effort for the development of human resources through closer cooperation in education and life-long learning for the strengthening of the Indian Community. In today's world, universities and higher education institutions are called upon to be more forward-looking and more learner-focused to maintain any pretense to excellence for which our students and faculty should be more education oriented which will enable them to possess awareness about good physique and health and nutrition which are the most needed concepts nowadays in the fast growing and polluted world. Added to this, the education in the inclusive set up is also the felt need of the hour in order to implement the Right to Education Act in the real sense of the term in order to establish a healthy and peaceful society

With this motive in mind, the department of Education, Physical Education, Special Education and Food Service Management and Dietetics of this Institute planned to organise a UGC sponsored International Seminar on "Bridging Innovations in Sports, Education and Nutrition" which keeps abreast with innovations in all dimensions of higher education.

I am indeed very happy to note that this International Seminar will open avenues to expand the knowledge of students, academicians, scholars and school teachers in the areas of sports, education, special education and nutrition education. The Professional meetings of experts in this seminar having deliberations on the matter of utmost importance dealing with the innovations in these various dimensions of education will provide a linkage among these areas thereby enhancing the knowledge and skill of the delegates and participants. The beneficiaries will definitely spread the messages so as to benefit the society in turn.

It is an occasion for the resource persons and delegates to exchange ideas and interact with each other. I take this opportunity to appreciate the organizers for bridging the topics of social relevance and extend my best wishes for the smooth and successful conduct of this great task .

Dr. S. Alagesan,

M.A.,M.P.Ed.,M.Phil.,N.I.S.,Ph.D

Professor and Head,

Faculty of General and Adapted Physical Education and Yoga

Ramakrishna Mission Vivekananda Educational and Research Institute,

S.R.K.V.P.O., Coimbatore - 641 020



Foreword

It is with great pleasure that I send a message to the important international seminar on Bridging innovations in Sports ,Education and Nutrition organized by Avinashilingam Institute for Home Science and Higher Education for women. I wish to express my deep appreciation to the organizing team for arranging for eminent scholars, and leading professionals to contribute their knowledge and experience in the field of sports, education and nutrition.

India at present, sincerely attempts to adhere various policies and efforts for the promotion of sports in order to achieve laurels in the international level. Sports scientists have pooled their heads to find out various strategies, ways and means to study the factors instrumental for successful performance in sports.

Seminar of this kind will definitely develop some new ideas regarding sharing of new knowledge and new experiences. The seminar has been planned meticulously by incorporating eminent speakers in the field of sports, education, physical education , nutrition and sports injuries, providing opportunities for young researchers in oral and poster presentation panel discussion and post conference workshop on Universal design for inclusion.

I congratulate the organizing team for their sincere effort in organizing this international seminar and wish the seminar a successful one in achieving the objectives.

Dr. S. Alagesan



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Department of Education
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Dr.Mahenderan Appukutty

*Head, Post Graduate Studies Faculty of
Sports Science, Universiti Teknologi Mara,
Malaysia*



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*Professor and Head,
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*Consultant Sports Nutritionist
Chennai*



Dr.M.S.Nagarajan

*Senior Sports Manager,
Special Olympics
Asia Pacific Region*

Guest Of Honor



Dr. Keddin Alwar Thiyagarajan

*Associate Professor and
Consultant in Sports Medicine
Centre for Sports Science
Department of Arthroscopy & Sports Medicine
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Dr. Y. Venkataramana

*Scientist 'F' Head,
Department of Work Physiology
& Sports Nutrition*



- Inter disciplinary approaches - policies, programmes and practices in **sports, education and nutrition (SEN)**
- Infra-structural facilities in schools/colleges/universities - scope and challenges
- Role of administrators/academicians in SEN
- Physical fitness, Yoga, Ayurveda, Nutrition for health and well being
- Bridging Innovations - social, economical, political psychological and technical knowledge in SEN and its impact
- Global perspectives and current trends in SEN



Short Film/Documentary - Based on the theme and sub themes. Duration - 8 to 10 min.



SPECIAL ISSUE ON

UGC SPONSORED INTERNATIONAL CONFERENCE ON BRIDGING INNOVATIONS IN
SPORTS, EDUCATION AND NUTRITION

8 & 9 February 2018

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ANALYSIS OF SPEED AND AGILITY BETWEEN MALE VOLLEYBALL PLAYERS AND BASKETBALL PLAYERS OF ANNAMALAI UNIVERSITY

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ABSTRACT

The main aim of the study was to compare the speed and agility among volleyball players and basketball players of Annamalai University. Twenty male volleyball and twenty basketball players were randomly selected for the study. 50m run test was used to measure the speed and Illinois agility test was used to measure the agility among the volleyball and basketball players. This study was limited to male volleyball and basketball players of Annamalai University. The result revealed that basketball players have good speed and agility as compared to volleyball players. The further findings show that the speed training is better among basketball players than volleyball players. The present study concluded that basketball players are having good speed as compared to volleyball players. But there is no difference in agility between basketball players and volleyball players. Agility is the ability to change the body's position efficiently, and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength, and endurance. Agility is the ability to change the direction of the body in an efficient and effective manner. A more accurate definition of speed is that: it is the ability to move as fast as possible, through the optimal range of motion, in a deliberate and intentional manner, in particular direction. Speed is not just measured on how fast a person is either; there are several components of measurement that give a complete picture of a player's speed (Reddy 2012).

KEYWORDS: Basketball, Speed, Agility, Volleyball

INTRODUCTION

Speed is actually a performance prerequisite to do motor actions under given conditions in a short period of time. Speed is very quick movement of a limb, whether it may be the legs of a runner or the arm of the shot putter. Speed is an important part of every sport and can be combined as maximum speed, elastic strength (power) and also speed endurance (Ram, 2012). Speed is the ability to execute any work in the minimum possible time. Speed is actually a nervous system controlled property. It can be influenced only to a limited extent and cannot be improved to an extent like strength and endurance (Sreedhar, 2007). The definition of a speed is given by scientific standpoint is simply distance/time, but this is rather simplistic view of speed. A more accurate definition of speed is that: it is the ability to move as fast as possible, through the optimal range of motion, in a deliberate and intentional manner, in particular direction. Speed is not just measured on how fast a person is either; there are several components of measurement that give a complete picture of a player's speed (Reddy 2012).

Agility is an important component of many team sports, though it is not always tested, and is often difficult to interpret results. In sports, agility is often defined in terms of an individual sport, due to it being an integration of many components each used differently (specific to all of sorts of different sports). Sheppard and Young (2006) defined agility as a "rapid whole body movement with change of velocity or direction in response to a stimulus". Agility is the ability to change the body's position efficiently, and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength, and endurance. Agility is the ability to change the direction of the body in an efficient and effective manner.

Volleyball

Volleyball is an exciting and challenging sport that has developed into a premier interscholastic and professional spectator event. The game requires the highest levels of speed, agility, power, concentration and team work. Volleyball is one of the most popularly played games in the world. It is the game of power agility as well as speed (Taware, 2013). Volleyball, an extremely popular team sport, belongs to a group of receiving sport/played on teams. Two teams stand on opposite sides of a court divided into two equal parts by a net. The standard court dimensions (9m x 18m), net height (2.24m for women and 2.43m for men), and the number of players ("6 on 6"). The game is played to win points, sets and finally the match (Kumar, 1999).

Basketball

Basketball is one of the world's most popular and widely viewed sports. The National Basketball Association (NBA) is the most popular and widely considered to be the highest level of professional basketball in the world and NBA players are the world's best paid athletes by average annual salary per player. Basketball is a limited contact sport played on a rectangular court. While most often played as a team sport with five players on each side. The objective is to shoot a ball through a hoop 18 inches (46 cm) in diameter and 10 feet (3.048 m) high that is mounted to a backboard at each end of the court. The game was invented in 1891 by Dr. James Naismith.

METHODOLOGY

Aim

The aim of the present study is to find out the speed and agility between male volleyball players and male basketball players.

Sample

The sample for present study consists of 20 male basketball players and 20 volleyball players between the age group of 20-25 years from Annamalai University.

Graphical representation of Sample and design

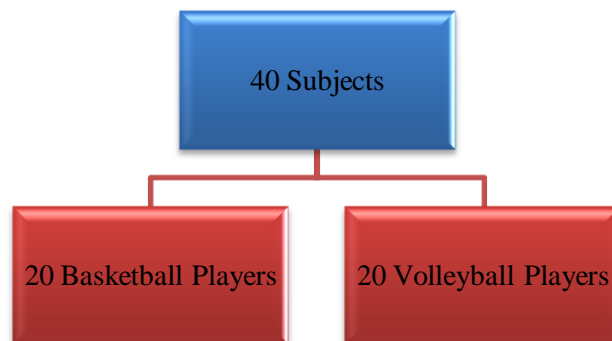


Figure-1

Tool

Fifty meter (50m) dash was used to collect data for speed and Illinois agility test used for collecting data for agility.

Limitations

The present study is limited to male volleyball players and basketball players of the Annamalai University. 50m dash and Illinois agility test are chosen for the study to find out speed and agility between basketball and volleyball players.

Methods

In this study basketball players and volleyball players are made to perform the Illinois agility test and also 50m dash. Both the tests are time based, the subjects are instructed and asked to perform thrice each test. The timings are taken by the investigator and the average was considered as the result for the test. The tests were performed at Annamalai University ground.

Variable and Test Description

Speed

Speed was measured by applying 50m dash test among male basketball and volleyball players of Annamalai University. Both basketball and volleyball players took standing start position behind the starting line. The assistant commanded on your mark and gave signal with the clapper, the players start running. The investigator started the stopwatch as soon as the signal was given to the subjects and stopped the watch as the players cross the finish line, and time was noted to the nearest 10th of a second as the result of the test.

45

Graphical representation of variable - Speed

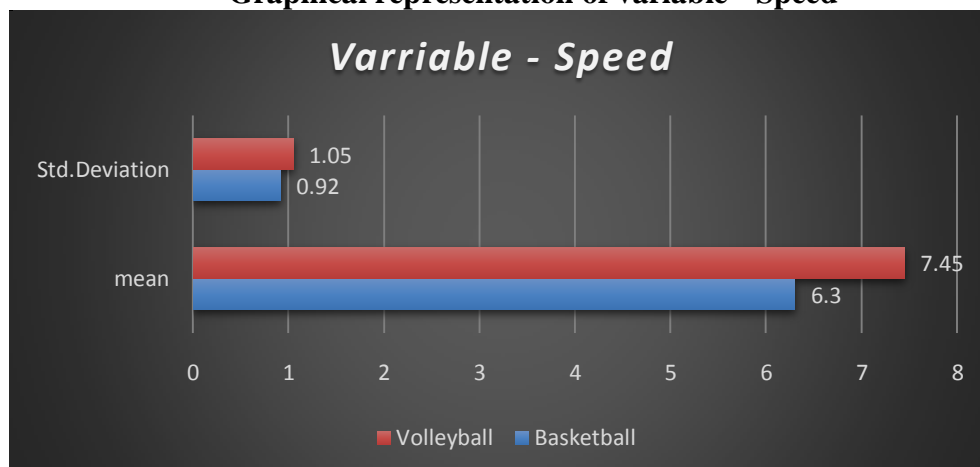


Figure -3

2. Descriptive statistics of agility variable

Table-2

PAIRED SAMPLES STATISTICS

	Mean	N	Std. Deviation	Std. Error Mean
Basketball	17.5500	20	1.93241	0.43210
Volleyball	17.4500	20	1.66938	0.37329

Test item	Group	N	Mean	Std. Deviation	Std. Error	t-value	df
Agility	Basketball	20	0.100	1.58	0.354	0.282	19
	Volleyball	20					

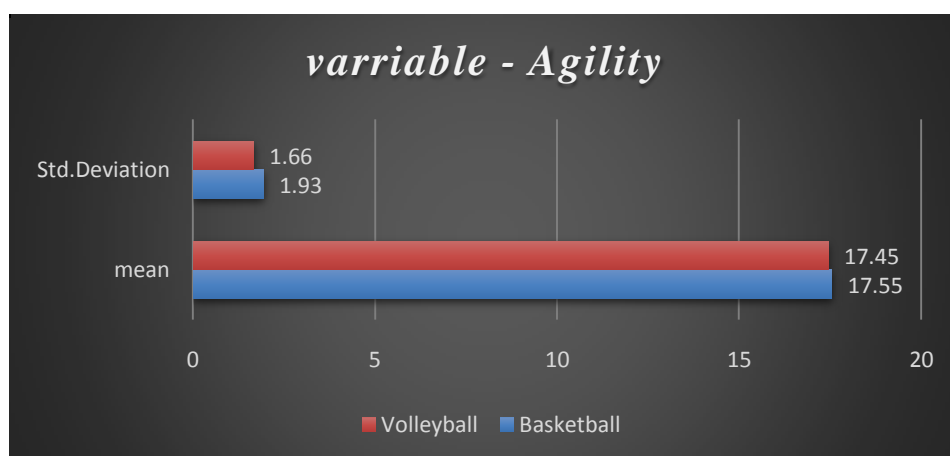


Figure - 4

Graphical representation of variable - Agility

DISCUSSION

Descriptive statistics revealed that mean scores of basketball players (6.30) and volleyball players (7.45) on speed variable is 1.15, standard deviation (1.386), std. error mean (0.31). The t-value is (3.708). It was found that mean of the speed was higher in basketball players than volleyball players. This means that basketball players have good speed as compared to volleyball players. It was also found that mean scores of basketball players (17.55) and volleyball players (17.45) on agility variable is (0.10), standard deviation (1.58), std. error mean (0.35). The t-value is (0.282). It was found that mean of the agility was almost similar between basketball players and volleyball players. The result of this study may depend on nature of the respective games as basketball players are running in the court while as volleyball players only play on the court.

CONCLUSION

The present study concluded that basketball players are having good speed as compared to volleyball players. But there is no difference in agility between basketball players and volleyball players.

REFERENCES

1. Ram L.H., A comparative study of speed among kabaddi and volleyball players of social welfare schools in Karimnagar District. International journal of health, physical education and computer science in sports. 2012-7(1).
2. Griffiths S., 20 Sept. 2010, The Canadian who invented basketball retrieved by British broadcasting corporation news. Retrieved 14 Sept 2011.
3. Jessop A., 14 Jun 2012, the surge of the NBA's international viewership and popularity. Forbes retrieved June 14, 2012.
4. Sreedhar K. Sports training methods, Swami Publications c-4, 99, south car street Chidambaram, 2007.
5. Dunphy M, Wild R. volleyball today 2nd edition, cataloguing-in-publication. 2001,145.
6. Taware GB, Bhutkar MV, Surdi AD, A profile of fitness parameters and performance of volleyball players, journal of Krishna institute of medical sciences university. 2013-2(2).
7. Kumar A. Volleyball, Discovery publishing house New Delhi-110002. 1999,1.



EFFECT OF STRENGTH TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG UNIVERSITY MEN KABADDI PLAYERS

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ABSTRACT

The purpose of the study was to find out the, Effect of strength training on selected physical fitness Variables among university men kabaddi players. To achieve the purpose of this study, twenty-four men kabaddi players studying in Department of physical education and sports sciences, Annamailai University Tamil Nadu, were selected as subjects. The selected subjects were randomly divided into two groups and each group contains 12 subjects. Group I acts as experimental group and group II acted as control group. The age of the subjects ranged from 18 to 22 years and which was confirmed from the university record. The experimental group attended strength training for six weeks, where as the control group did not given any kind of training expect their daily activities. The simple t –test was used to find out significant improvement on selected variables in pre and post test. The analysis of covariance (ANCOVA) was used to find the significant difference among the groups. The level of confidence was fixed at 0.05. It was concluded that there was a significant improvement on selected variables. During play, the players on the defensive side are called 'Antis' while the player of the offense is called the 'Raider'. Kabaddi is perhaps the only combative sport in which attack is an individual attempt while defense is a group effort. The attack in Kabaddi is known as a 'Raid'. The antis touched by the raider during the attack are declared out if they do not succeed in when their side scores points against the opposite side during their raiding turn or if the remaining players succeed in catching the opponent's raider.

KEYWORDS: Strength Training, Speed, Agility, Cardio- Respiratory Endurance, Kabaddi Player

INTRODUCTION

Training is a program of exercise designed to improve the skill and to increase the energy capacities of an athlete for a particular event (Robert, 1966). The training is the process of preparing an individual for any event or an activity. Usually in sports we use the term sport training to preparing the player for achieving the highest level of performance. But these days sport training is not just a term but it is very important subject that affects each and every individual who takes up physical activity for health and fitness or for the competition at different level. Sport training is the Physical, intellectual, psychological and moral preparation of a player by means of physical exercises.

Strength training is a type of physical exercise specializing in the use of resistance to induce muscular contraction which builds the strength, anaerobic endurance, and size of skeletal muscles. When properly performed, strength training can provide significant functional benefits and improvement in overall health and well-being, including increased bone, muscle, tendon, and ligament strength and toughness, improved joint function, reduced potential for injury.

Strength training is typically associated with the production of lactate, which is a limiting factor of exercise performance. Regular endurance exercise leads to adaptations in skeletal muscle which can prevent lactate levels from rising during strength training.

Kabaddi is a fast paced, high energy team game that involves lots of contact between players and is similar in some ways to the sport of rugby. In the game, players must score points by entering enemy territory and fending off opponents to make it back to their own territory safely. Kabaddi is a combative team game, played with absolutely no equipment, in a rectangular court, either outdoors or indoors with seven players on the ground in each side. Each side takes alternate chances at offense and defense. The basic idea of the game is to score points by raiding into the opponents' court and touching as many defense players as possible without getting caught on a single breath. During play, the players on the defensive side are called 'Antis' while the player of the offense is called the 'Raider'. Kabaddi is perhaps the only combative sport in which attack is an individual attempt while defense is a group effort. The attack in Kabaddi is known as a 'Raid'. The antis touched by the raider during the attack are declared out if they do not succeed in when their side scores points against the opposite side during their raiding turn or if the remaining players succeed in catching the opponent's raider.

METHODOLOGY

The purpose of the present study was to find out the, Effect of strength training on selected physical fitness Variables among university men kabaddi. TO achieve the purpose of the study twenty-four men kabaddi players were selected from department of physical education and sports sciences, Annamalai, University Tamil Nadu, were selected as subjects. The age group was ranged from 18 to 24 years. The selected subjects were divided into two groups namely experimental group (n=12) and control group (n=12). The experimental group was given strength training for six weeks. The collected data were statistically analyzed for significant difference using "t" test. In this case 0.05 level of confidence was used to test the hypotheses.

VARIABLES TOOLS AND MEASUREMENT

PHYSICAL FITNESS VARIABLES

S.NO	VARIABLES	TESTS	SCORE
1	SPEED	50 M run	In second
2	AGILITY	Shuttle run	Seconds
3	CARDIO- RESPIRATORY ENDURANCE	Coppers 12 min run/ walk test	Merts.

ANALYSIS OF THE DATA

The mean, standard deviation and “T” ratio values on selected physical fitness variables have been analyzed and presented in the tables, graphs and explanations is given below in each table.

TABLE –1
DIFFERENCE BETWEEN THE PRE AND POST TESTS SCORES OF
EXPERIMENTAL AND CONTROL GROUP ON SPEED. EXPERITMENTIAL GROUP

EXP. GROUP	MEAN	SD	DF	T -TEST
PRE TEST	109.736	23.132	28	2.961
POST TEST	96.736	14.262		

Significant at 0.05slevel, table value required for 0.05 level of significant with df 28 is 2.21.

Pre-test and post test of Experimental Group on SPEED have been Showed graphically in Figure1

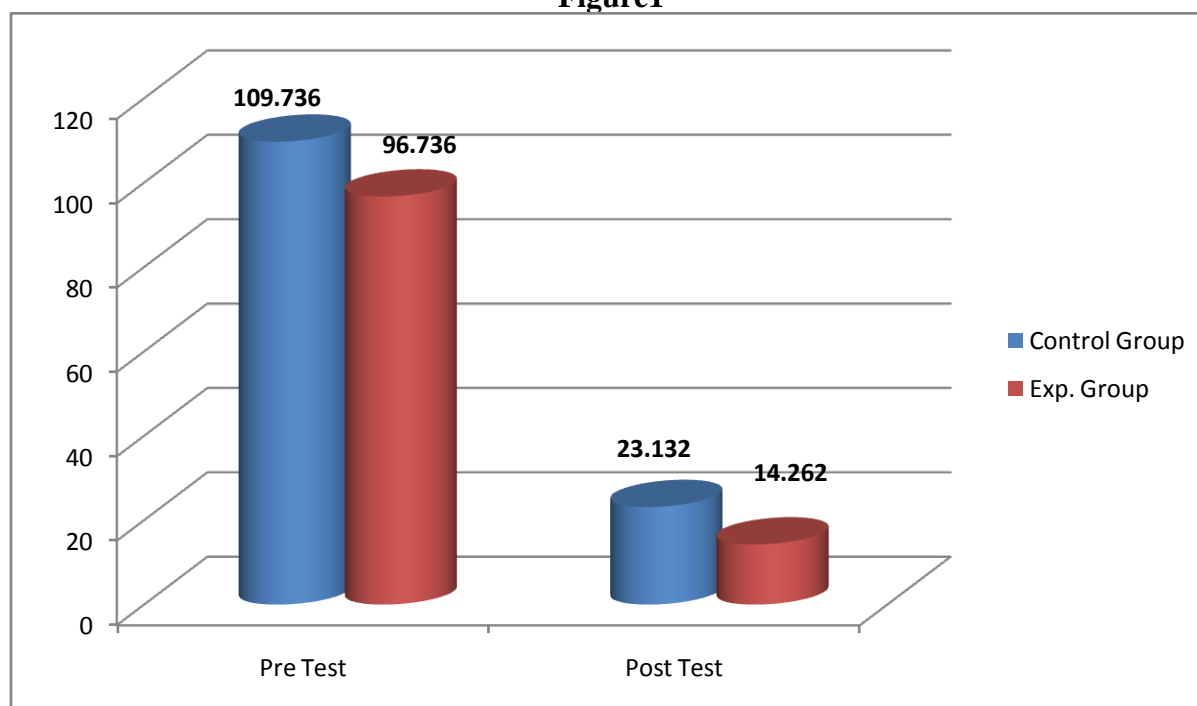


Figure -I

CONTROL GROUP

CONTROL GROU	MEAN	SD	DF	T -TEST
PRE TEST	93.00	19.320	28	0.203
POST TEST	92.20	18.80		

The obtained “t” ratio value of the experimental group on selected variable speed are 2.961 respectively which are greater than the require vale of 2.21 for significant at 0.05 level of confidence. However they obtained “t” value of the control group on speed is 0.203 which are lesser than the required value of 2.21 for significant at 0.05 level of confidence. The obtained data from the experimental group shows that there is significant improvement on selected variable due the effect of 12 weeks training programmer and there is no improvement on control group.

Pre-test and post test of Control Group on SPEED have been Showed graphically In Figure II. Figure- 2

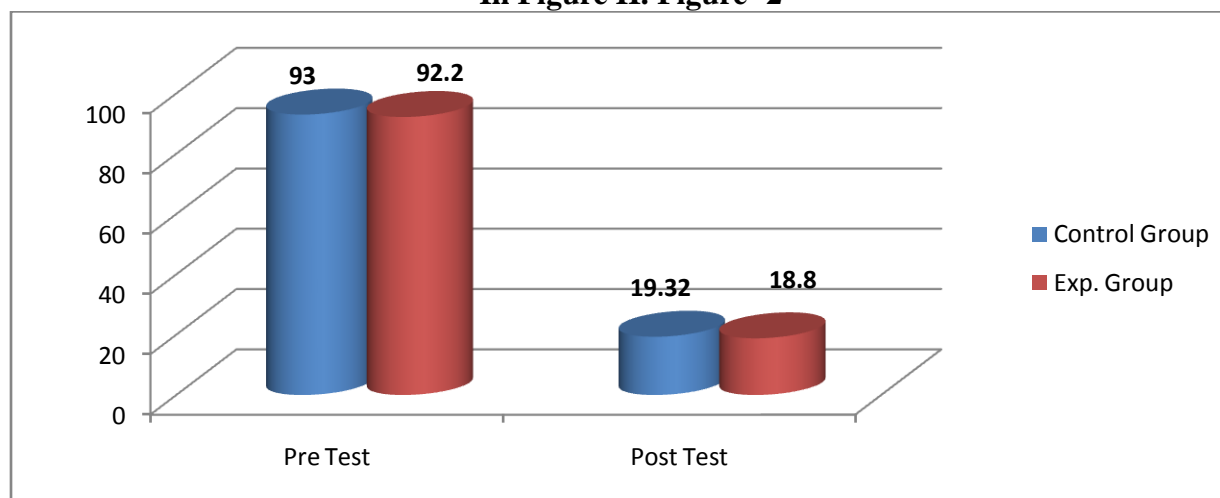


TABLE –2

DIFFERENCE BETWEEN THE PRE AND POST TESTS SCORES OF EXPERIMENTAL AND CONTROL GROUP ON CARDIO- RESPIRATORY ENDURANCE. EXPERITMENTIAL GROUP

EXP. GROUP	MEAN	SD	DF	T -TEST
PRE TEST	50.02	1.88	28	14
POST TEST	42.81	2.11		

Significant at 0.05level, table value required for 0.05 level of significant with df 28 Is 2.2

Pre-test and post test of Experimental Group on cardio- respiratory endurance have been Showed graphically in Figure III.

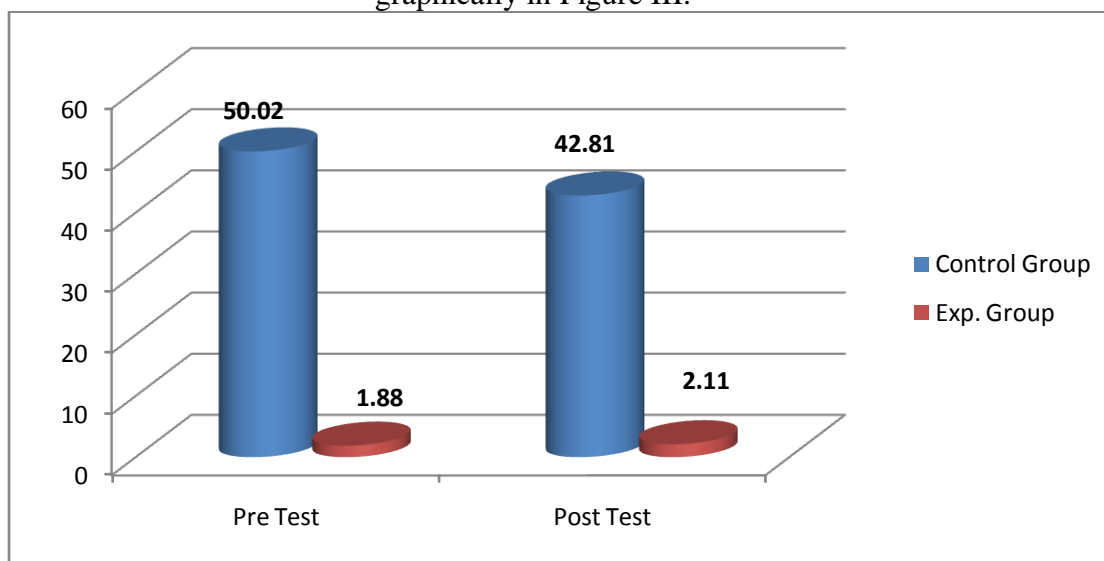


Figure- 3

CONTRO GROUP

CONTROL GROUP	MEAN	SD	DF	T -TEST
PRE TEST	91.800	22.233	28	0.007
POST TEST	91.760	21.880		

The obtained “t” ratio value of the experimental group on selected variable cardio- respiratory endurance are 14 respectively which are greater than the require vale of 2.21 for significant at 0.05 level of confidence. However they obtained “t” value of the control group on speed is 0.007 which are lesser than the required value of 2.21 for significant at 0.05 level of confidence. The obtained data from the experimental group shows that there is significant improvement on selected variable due the effect of 12 weeks training programmer and there is no improvement on control group.

Pre-test and post test of Control Group on cardio- respiratory endurance have been Showed graphically in Figure IV.

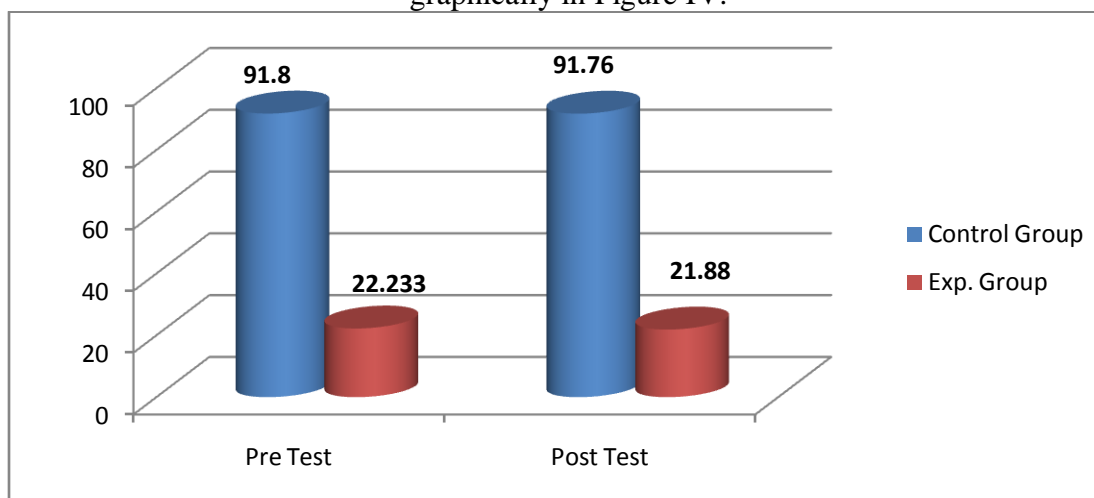


Figure- 4

TABLE –3
DIFFERENCE BETWEEN THE PRE AND POST TESTS SCORES OF
EXPERIMENTAL AND CONTROL GROUP ON AGILITY. EXPERITMENTIAL
GROUP

EXP. GROUP	MEAN	SD	DF	T -TEST
PRE TEST	83.86	13.40	28	2.885
POST TEST	74.86	12.68		

Significant at 0.05level, table value required for 0.05 level of significant with df 28 is 2.21

Pre-test and post test of Experimental Group on Agility have been Showed graphically in Figure5

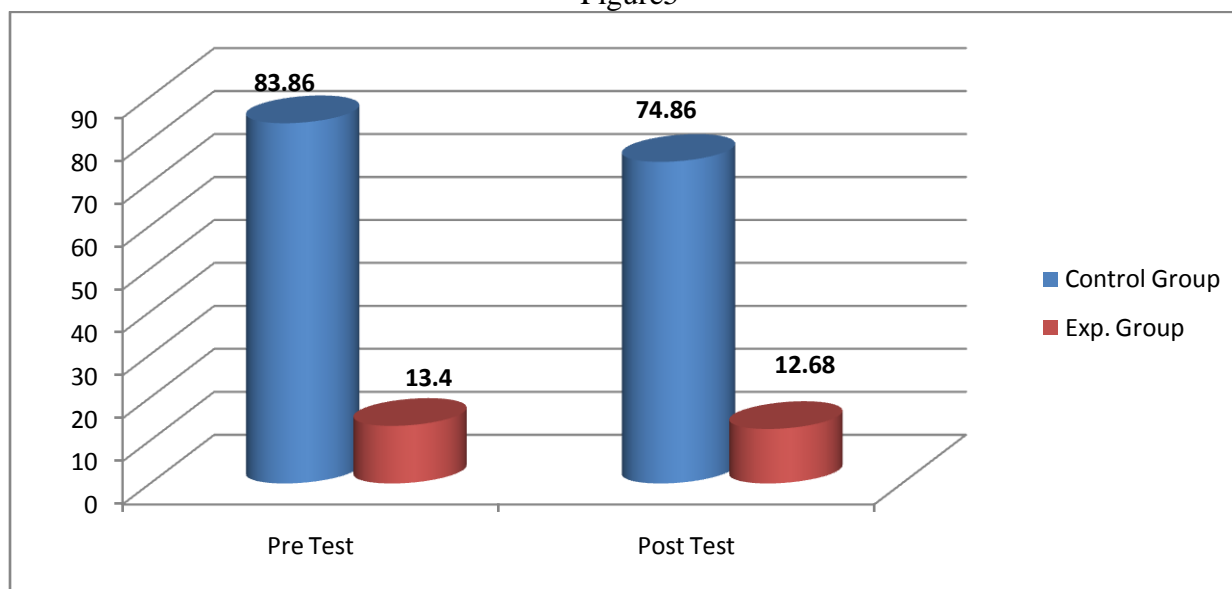


Figure- 5

CONTROL GROUP

CONTROL GROUP	MEAN	SD	DF	T -TEST
PRE TEST	75.86	6.27	28	0.183
POST TEST	74.24	6.24		

The obtained “t” ratio value of the experimental group on selected variable Agility are 2.885 respectively which are greater than the require vale of 2.21 for significant at 0.05 level of confidence. However they obtained “t” value of the control group on speed is 0.183 which are lesser than the required value of 2.21 for significant at 0.05 level of confidence. The obtained data from the experimental group shows that there is significant improvement on selected variable due the effect of 12 weeks training programmer and there is no improvement on control group.

Pre-test and post test of Control Group on Agility have been Showed graphically in Figure 6

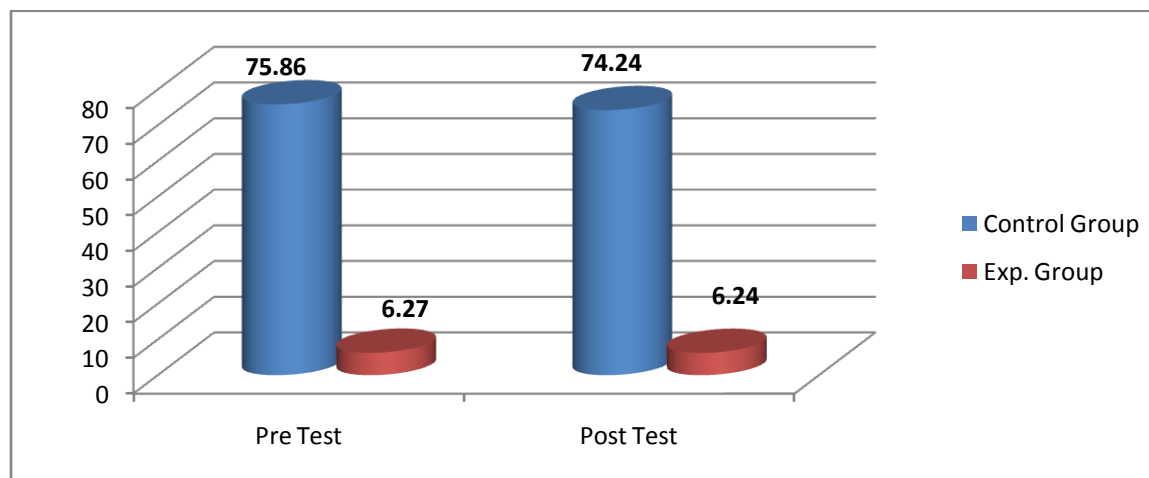


Figure- 6

CONCLUSIONS

1. A significant improvement on selected physical variables such as speed, agility and cardio-vascular endurance variables among university men kabaddi players due to the six weeks training programme.
2. There was a significant difference on selected variables between Experimental group and control group.

REFERENCES

1. Wolfe, B., LeMura, L., Cole, P. **Quantitative analysis of single- vs. multiple-set programs in resistance training.** *J Strength Cond Res.* 2004;18:35–47.
2. Faigenbaum, A., Westcott, W., Long, C. et al, **Relationship between repetitions and selected percentages of the one repetition maximum in healthy children.** *Pediatr Phys Ther.* 1998; 10:110–113.

3. Willardson, J., Burkett, L. **A comparison of 3 different rest intervals on the exercise volume completed during a workout.** *J Strength Cond Res.* 2005;19:23–26.
4. Henja, W., Roseberg, A., Buturusis, D. et al, **The prevention of sports injuries in high school students through strength training.** *National Strength and Conditioning Assoc J.* 1982;4:28–31.
5. Falk, B., Tenenbaum, G. **The effectiveness of resistance training in children: a meta-analysis.** *Sports Med.* 1996;22:176–186.



ANALYSIS OF ANTHROPOMETRICAL VARIABLES AND NUTRITIONAL STATUS AMONG LOW MIDDLE AND HIGH INCOME GROUPS IN CHENNAI

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ABSTRACT

The purpose of the study was analyse the anthropometrical variables and nutritional status among low middle and high income groups in chennai. To achieve the purpose of the study investigator selected 30 low, 30 middle and 30 high income randomly selected from groups in Chennai. Their ages ranges from 25 to 50 years. They were randomly selected from low income groups, middle incomes groups and high income groups. After analyzing the various factors associated with the presented study. The following anthropometrical variables such as weight, chest girth and upper leg length was measured with stadiometer, anthropometry flexible measuring tape (non extendable) or segmometer. Nutritional variables such as types of diet and meal pattern assessed by food frequency questionnaire (Silambu selvi. K, 2014). The collected data were analysed statistically by analysis of variance (ANOVA) and Scheffe's post-hoc test. From the analysis of data it was proved that there is significant difference in weight and chest girth. The weight and chest girth of the high income groups were higher than the low income groups in Chennai. There was no significant difference in upper leg length among low middle and high income groups in Chennai. Ova vegetraion and 3 meal pattern were common in all the three types in chennai.

KEYWORDS: Weight, Chest Girth, Upper Leg Length, Types Of Diet And Meal Pattern.

INTRODUCTION

The measurement of the size and proportions of the human body and its different parts. Exact anthropometrical studies have identified ideal values for the body dimension of athletes in different sports. However, athletes who deviate from the ideal are still able to excel in competitions because factors other than physical attributes affect athletic performance.

The study of anthropometry as the systematic measurement of the different parts of the human body in order to determine their respective proportions not only at different ages but also in the human races, so as to distinguish them and establish their relations to each". (**Spencer, F. ed. 1997**).

Nutritional status is the condition of health of the individual influenced by the utilization of the nutrition. Good nutritional status refers to the intake of a balanced diet containing all the essential nutrients to meet the body's requirement for energy, maintenance and growth. There is not one single parameter that serves as the only and best parameter to discover malnourished individuals. (**Srilakshmi, 2011**).

STATEMENT OF THE PROBLEM

The purpose of the study was to analyses of anthropometrical variables and nutritional status among low middle and high income groups in chennai.

Hypothesis

It was hypothesized that there would be a significant difference on anthropometrical variables among low middle and high income groups in Chennai.

REVIEW AND RELATED LITERATURE

Silambu selvi. K (2014) conducted a research on analysis of nutrutioual status anthropometrical physiological and biochemical parameters among rural and urban postmenopausal women. To achieve the purpose of the study 250 post menopausal women urban area and 250 post menopausal women rural area were selected as rurual women soomangalam region, kancheepuram district and urban women prembur region, Chennai district. The age of the subject was 50 to 60 years. The variables selected were nutritional variables, anthropometrical variables, physiological variables and biochemical variables. The selected variables were tested through type of diet, frequency of food consumption of the respondents, life style and activity pattern was measured in numbers. Amount of Food consumed was calculated in kilocalories per day, amount of protein and fat was measured in grams, amount of calcium iron consumed were calculated in milligrams. Height was measured in stadiometer. Body weight was measured in weighing machine. Body mass index was measured using the formula weight in kg/height in meter square. Waist hip ratio was measured measuring tape. Bone mineral density was measured in T-score. Pulse rate was measured stop watch. Blood pressure was measured spygmometer and stethoscope. Mean arterial blood pressure was measured millimeters of mercury. Biochemical variables was serum calcium, lipid profile like triglycerides, high density lipoprotein and total cholesterol was analysed through blood samples and laboratory tests. Haemoglobin and serum albumin was measured grams per deciliter. The collected data were analysed using coefficient correlation and ANOVA. The result of the study shows that there compared to rural and urban better than mean nutrient in takes, pulse rate, serum albumin, haemoglobin and total cholesterol urban to rural better than frequency of food,

rural women awareness in life style and activity pattern compared urban women. Weight is higher height, weight, waist hip ratio systolia blood pressure, mean arterial blood pressure, high density and low density. Geneal and health profile marital status and education status and type of family, more than marital status in rural women, education level in low rural women, types of family and bone mineral density is common rural and urban women. That there was a no significant difference in diastolic blood pressure and body mass index rural and urban women.

Tharmar. K (2014) conducted a research on analysis If knowledge and attitude towards healthy eating and physical activity among low middle and high income groups. To achieve the purpose of the study 100 low, 100 middle and 100 high income groups were selected as subject from Tamil Nadu. The age of the subject were where low income groups, middle income groups and high income groups. The selected variable for measured standardized questionnaire. The collected data were analysed using one way ANOVA and schefee's post hoc test. The results of study shows that there was a significant difference in low 43%, middle 45% and 36% of high income healthy diet, low income 51%, middle income 48% and high income 42% in physical activities compared to last year, low 34%, middle 45% and high 39 healthy dishes at school. High income better than the low and middle income groups in Tamil Nadu.

METHODOLOGY

To achieve the purpose of the study investigator would be selected subjects from 30 low, 30 middle and 30 high income groups at random from Chennai. Low income for the people working in the company or any other sector with 1 – 3.4 lakhs per year income. Middle income for the people working in the company or any other sector with more than 3.4 – 17 lakhs per year income. High income for the people working in the company or any other sector with 17 lakhs and above income per year. (www.ncaer.com, Indian express economic survey, 2011). Their age ranges from 25 to 50 years. The following Anthropometrical variables such as Weight, Chest girth and upper leg length was measured through anthropometry flexible measuring tape (non extendable) or segmometer. Nutritional variables such as Types of diet and meal pattern assessed by food frequency questionnaire. The collected data were analysed statistically by analysis of variance (ANOVA) and Scheffe's post-hoc test.

RESULTS AND DISCUSSION

TABLE – 1
ONEWAY ANOVA FOR WEIGHT, CHEST GIRTH AND UPPER LEG LENGTH
AMONG LOW, MIDDLE AND HIGH INCOME GROUP IN CHENNAI
(SCORES IN CENTIMETERS)

Variables	Incomes Mean			Sources of variance	Sum of Squares	Df	Mean Squares	F
	low	Middle	High					
Weight	66.16	72.73	77.03	Between	1796.95	2	898.47	7.67*
				Within	10181.00	87	117.02	
Chest girth	89.83	96.03	99.10	Between	1337.15	2	668.57	8.20*
				Within	7093.83	87	81.53	
Upper leg length	47.73	47.90	48.90	Between	11.94	2	11.94	1.48
				Within	8.03	87	8.03	

Table F – ratio at 0.05 level of confidence for 2 and 87 (df) = 4.88.

From the analysis of data it was proved that there was significant difference among low, middle and high income groups of weight and chest girth as the calculated 'F' value 7.67 and 8.20 respectively were greater than the required 'F' value of 4.88. That there was no significant difference among low, middle and high income groups of upper leg length as the calculated 'F' value 1.48 respectively were lesser than the required 'F' value of 4.88.

Since there was significant differences among the income groups in Weight and chest girth Scheffe's post hoc analysis was made and which is presented in table II

TABLE 2
SCHEFFE'S POST HOC TEST FOR DIFFERENCE BETWEEN MEANS ON
WEIGHTCHEST GIRTH AND AMONG LOW, MIDDLE
AND HIGH INCOME GROUPS IN CHENNAI
(SCORES IN CENTIMETERS)

Variables	Income groups			Mean Difference	CI Value
	Low	Middle	High		
Weight	66.16	72.73		6.56	6.94
	66.16		77.03	10.86*	
		72.73	77.03	4.30	
Chest girth	89.93	96.03		6.20*	5.80
	89.93		99.10	9.26*	
		96.03	99.10	3.06	

The table 2 reveals that there was no significant difference in weight and Chest girth between low and middle, middle and high income groups as the obtained mean difference was 6.56 and 4.30 were lesser than the CI value of 6.94 at 0.05 level of confidence. But there was significance difference between low and high. There was a significant difference in weight between low and high income groups as the obtained mean difference 10.86 was greater than the CI value of 6.94 at 0.05 level of confidence. There was a significant difference in Chest girth between low and middle, low and high income groups as the obtained mean difference was 6.20 and 9.26 was greater than the CI value of 5.80 at 0.05 level of confidence.

The obtained mean values in Chest girth among low income, middle income and high income of the income groups in chennai were presented through bar diagram for better understanding of the results in figure -1.

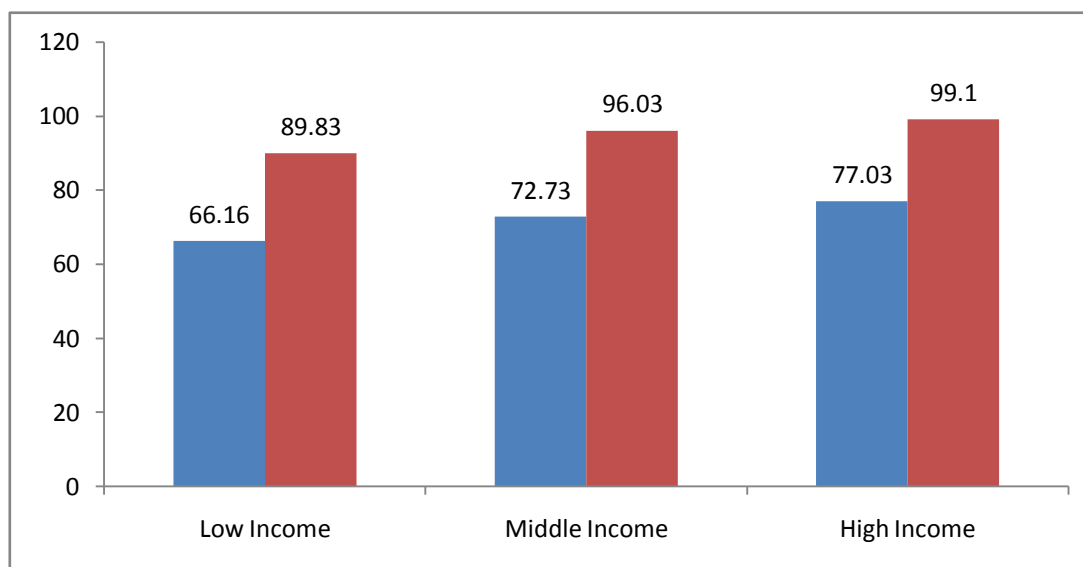


Figure - 1

Mean of weight and chest girth among low, middle and High income group in Chennai

TABLE 3
SHOWS THE NUMBER AND PERCENTAGE OF TYPE OF DIET MEAL PATTERN
AMONG LOW MIDDLE AND HIGH INCOME
GROUPS IN CHENNAI (SCORES IN %)

S.No	Type of diet	Low income		Middle income		High income	
		Num	%	Num	%	Num	%
1.	Vegetarian	12	40	8	26.67	6	20
2.	Ova vegetarian	15	50	17	60	21	70
3.	Non vegetarian	3	10	5	13.33	3	10
Meal Pattern							
S.No	Type of diet	Low income		Middle income		High income	
		Num	%	Num	Num	%	Num
1.	2 meals/Day	2	6.67	8	26.67	5	16.67
2.	3 meals/Day	23	76.67	14	46.67	21	70
3.	4 meals/Day	4	13.33	5	16.67	3	10
4.	More than 4 meals/Day	1	3.33	3	10	1	3.33

In low income group 40%, 50% and 10% of the subjects were vegetarian, ova vegetarian and non vegetarian respectively.

In middle income group 26.67%, 60% and 13.33% of the subjects were vegetarian, ova vegetarian and non vegetarian respectively.

In high income group 20%, 70% and 10% of the subjects were vegetarian, ova vegetarian and non vegetarian respectively.

Among the groups 40%, 26.67 and 20% were vegetarian in the low, middle and high income groups respectively.

Among the groups 50%, 60% and 70% were ova vegetarian in the low, middle and high income groups respectively.

Among the groups 10%, 13.33% and 10% were non vegetarian in the low, middle and high income groups respectively.

In low income group 6.67%, 76.67%, 13.33 and 3.33% of the subjects were 2 meals/day, 3 meals/day, 4 meals/day and more than 4 meals/day respectively.

In middle income group 26.67%, 46.67%, 16.67 and 10% of the subjects were 2 meals/day, 3 meals/day, 4 meals/day and more than 4 meals/day respectively.

In high income group 16.67%, 70%, 10 and 3.33% of the subjects were 2 meals/day, 3 meals/day, 4 meals/day and more than 4 meals/day respectively.

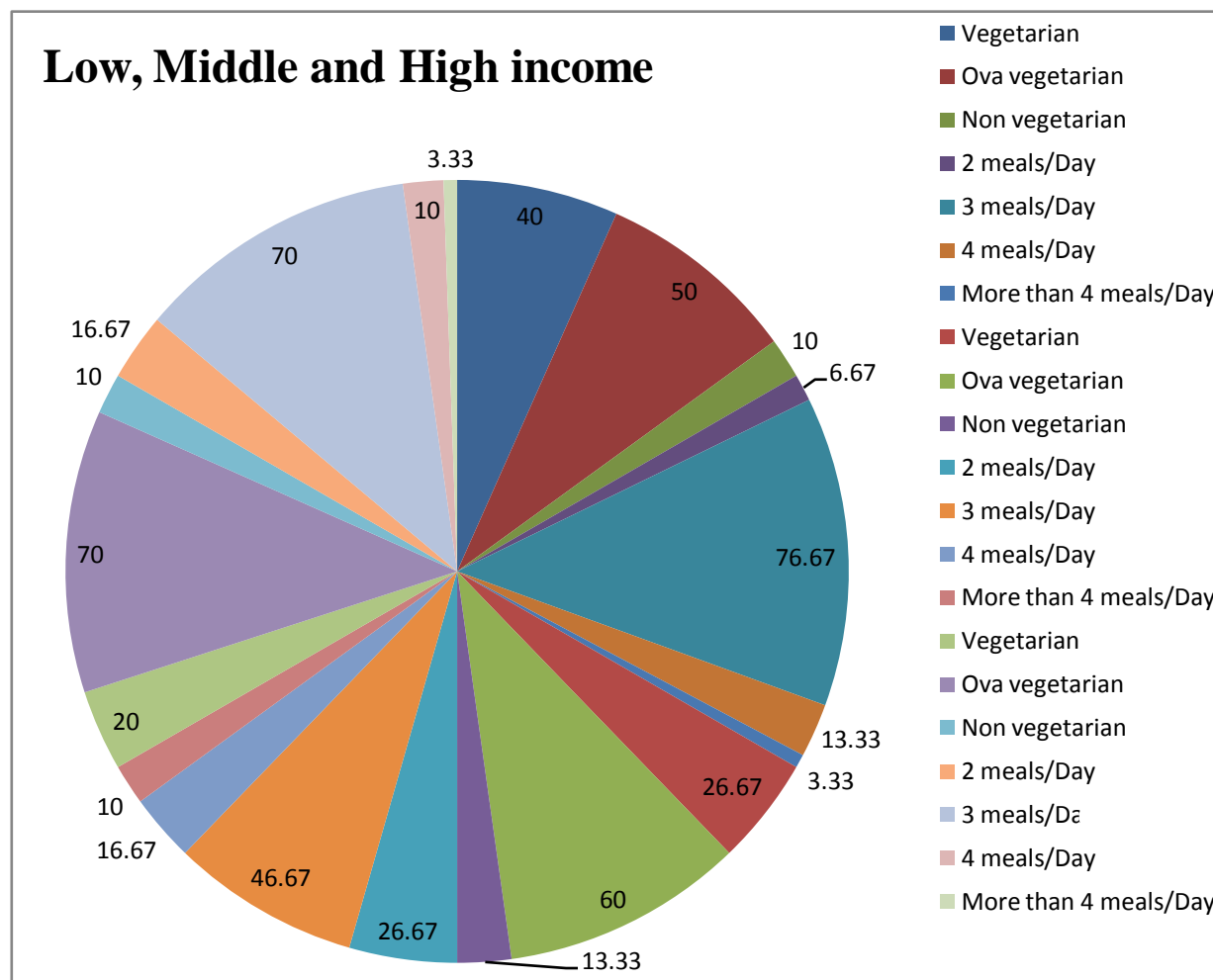
Among the groups 6.67%, 26.67 and 16.67% were 2meals/day in the low, middle and high income groups respectively.

Among the groups 76.67%, 46.67 and 70% were 3meals/day in the low, middle and high income groups respectively.

Among the groups 13.33%, 16.67 and 10% were 4meals/day in the low, middle and high income groups respectively.

Among the groups 3.337%, 10 and 3.33% were more that 4meals/day in the low, middle and high income groups respectively.

The percentage of type of diet and meal pattern among low, middle and high income presented through bar diagram in figure-2



Groups in Chennai (Scores in %)

CONCLUSION

1. It was concluded that there was significant differences in Weight among income groups in Chennai. But there was no significant difference between low and middle income, middle and high income groups in Chennai.
2. The weight of the high income were higher than the low income groups in Chennai.
3. It was concluded that there was significant differences in Chest Girth among income groups in Chennai. But there was no significant difference between middle and high income groups in Chennai.
4. The Chest Girth of the high income were higher than the low income groups in Chennai.
5. It was concluded that there was no significant differences in upper leg length among income groups in Chennai.
6. The study shows that type of diet vegetarian diet was common in all the groups low income middle income and high income in Chennai.
7. The results of the study show that among the various type of diet 3meal pattern was common in all three groups in Chennai.

REFERENCE

Harris.B (1994), “ Health, Height and History: an overview of recent developments in Anthropometric history. Social History of Medicine”.

Tharmar.k (2014) Analysis if knowledge and attitude towards healthy eating and physical activity among low middle and high income groups Unpublished Masters Thesis, Tamil Nadu Physical Education and Sports University.

Spencer. F (1997), “History of Physical Anthropology Garland”, New York and London.
Srilakshmi.B (210) “Nutrition Science” published new age international pvt. Ltd, pp.38.

Silambu selvi. K (2014) Analysis of Nutrutuional status Anthropometrical Physiological and Biochemical parameters among rural and urban postmenopausal women. Unpublished Doctoral Thesis, Tamil Nadu Physical Education and Sports University.

www. ncarer.com Indian Express economic survey, 2011.



COIMBINED EFFECT OF VARIOUS TRAINING ON SPEED AND MUSCULAR STRENGTH AMONG ATHLETES

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ABSTRACT

Understanding the training methods and the effectiveness of the training methods to suit a particular event and competition situations is a challenging task for any coach or player. This helps coaches and athletes prevent injury and overtraining while trying to maximize their performance variables, and analyze the strengths and weaknesses related to their specific training programs. The purpose of the study was to find the combined effect of various training on speed and muscular strength among athletes. To achieve the purpose of the study 40 men athletes who had represented their college in inter collegiate athletic competition, Bharathiar University, Coimbatore, Tamil Nadu were selected. The age groups of the subjects were 18 to 22 years and they were randomly assigned into two equal groups of 20 each. Experimental group-I performed combined training which includes cardio-respiratory endurance, resistance and core strength training and group-II acted as control group which was restricted to participate in any specific training programme. The physical fitness component speed and muscular strength were selected as dependent variables and they were assessed by using standard test and procedure. The data collected from the experimental and control groups on selected dependent variables was statistically analyzed by applying the analysis of covariance (ANCOVA). In all the cases the level of significance was fixed at 0.05. It was concluded that speed and muscular strength of athletes were improved due to combined training

KEYWORDS: Coimbinded Training, Speed , Muscular Strength

INTRODUCTION

Performance of an athlete in a sport or event depends upon physical, motor and physiological components. Generally, these variables are performance oriented and are dependent upon functioning of different systems of the body in an integral manner. The strength and speed are essential qualities required for excellence in sports. A proper and specific training tends to improve most of the physical variables by which a definite improvement in the performance of the athlete could be achieved. In majority of the sports events and competitions, it is the performance in the physical and motor variables such as speed, power, agility, muscular endurance with balance and coordination which contribute one's ability to perform difficult and complex skills. Speed and strength are integral components of fitness found in varying degree in virtually all athletic movements. Speed of motion in the appropriate order over duration of time is the ultimate object in optimum performance. As strength levels raise and all other biomotor areas have been increased, speed becomes a resultant of the training that has been applied. In this study, the effect of combined training on physical variables such as speed and muscular strength

Were examined on randomly selected men athletes.

METHODOLOGY

SUBJECTS AND VARIABLES

To achieve the purpose of the study, 40 men athletes who had represented their college in inter collegiate athletic competition from Bharathiar University, Coimbatore, Tamilnadu, India, were selected as subjects. The age of the selected subjects were ranged from 18 to 22 years. The selected subjects (N=40) were classified into two equal groups of twenty each (N=20) at random. Group-II underwent combined training which includes cardio-respiratory endurance, resistance and core strength training 3 days per week for 12 weeks with 70% to 95% . Physical parameters namely speed and muscular strength were selected as dependent variables for the study. The duration of the training period was restricted to twelve weeks and the number. of sessions per week was confined to three, which was considered adequate enough to cause changes in selected dependent variables. The selected physical variables were assessed prior to and immediately after the training period by using the standardized test items. Random group design was used as research design combined training as independent variables and selected physical parameters as dependent variables.

TABLE- 1
CRITERION VARIABLES AND TESTS

Sl. No	Variables	Test	Unit of Measurement
1	Speed	50 meters run	Seconds
2	Muscular strength	Bent Knee Sit-ups	Number

STATISTICAL PROCEDURE

The data collected from the experimental and control groups on selected dependent variables was statistically analyzed by applying the analysis of covariance (ANCOVA).. In all the cases the level of confidence was fixed at 0.05 level for significance.

RESULTS**RESULTS ON SPEED**

TABLE- 2
ANALYSIS OF COVARIANCE ON SPEED OF EXPERIMENTAL AND CONTROL GROUP

Test	Source of variance	Sum of Squares	Df	Mean square	F
Pretest	Between	.208	1	.208	.870
	Within	8.841	37	.239	
Posttest	Between	2.712	1	2.712	14.503*
	Within	6.927	37	.187	
Adjusted post test	Between	2.548	1	2.548	27.106*
	Within	3.493	37	.094	

*significant at 0.05 level with 1,37df

Table II showed the obtained F ratio .870 for prettest mean was lesser than the table value 4.11 for df 1 and 37 required for significance at 0.05 level on speed. The obtained F ratio 14.503 for posttest mean was greater than the table value 4.11 for df 1 and 37required for significance at 0.05 level of significance. The obtained F ratio 27.106 for adjusted post test mean was greater than the table value 4.11 for df 1 and 37required for significance at 0.05 level of significance. This indicates that the coimbined training had improved speed of the athletes than control group.

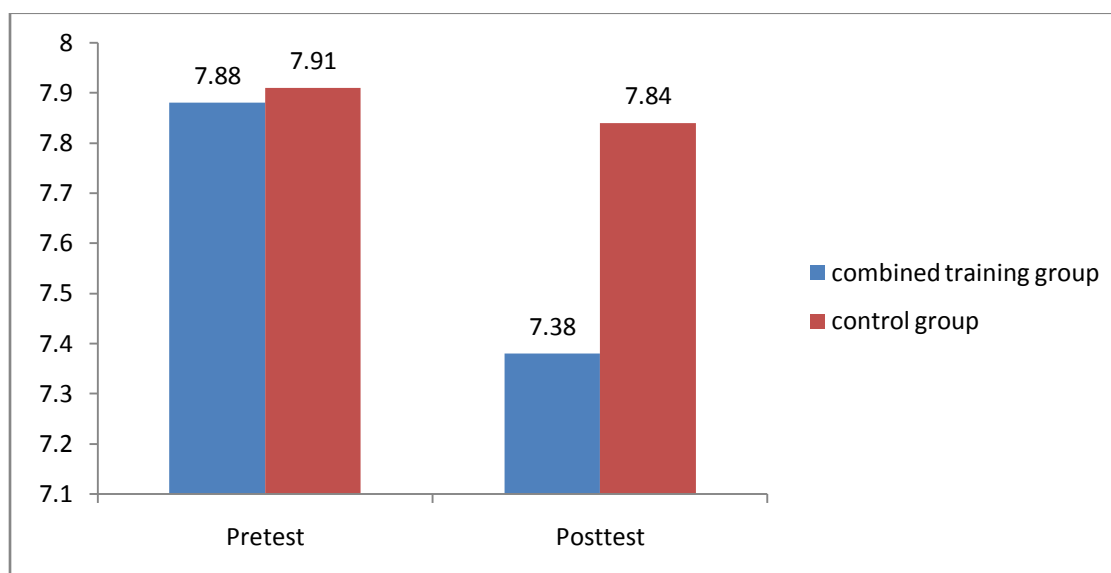


Figure- 1
Bar Diagram Showing Adjusted Post Test Mean Value on Speed of Combined Training Group and Control Group

RESULTS ON MUSCULAR STRENGTH

TABLE- 3
ANALYSIS OF COVARIANCE ON MUSCULAR STRENGTH OF EXPERIMENTAL
AND CONTROL GROUP

Test	Source of variance	Sum of Squares	Df	Mean square	F
Pretest	Between	31.56	1	31.56	1.624
	Within	718.95	37	19.431	
Posttest	Between	753.26	1	753.26	34.781*
	Within	801.30	37	21.657	
Adjusted post test	Between	783.19	1	783.19	52.609*
	Within	550.83	37	14.887	

*significant at 0.05 level with 1,37df

Table 3 showed the obtained F ratio 1.624 for pretests mean was lesser than the table value 4.11 for df 1 and 37required for significance at 0.05 level on muscular strength. The obtained F ratio 34.781for posttest mean was greater than the table value 4.11 for df 1 and 37required for significance at 0.05 level of significance. The obtained F ratio 52.609 for adjusted post test mean was greater than the table value 4.11 for df 1 and 37required for significance at 0.05 level of significance. This indicates that the coimbined training had improved muscular strength of the athletes than control group.

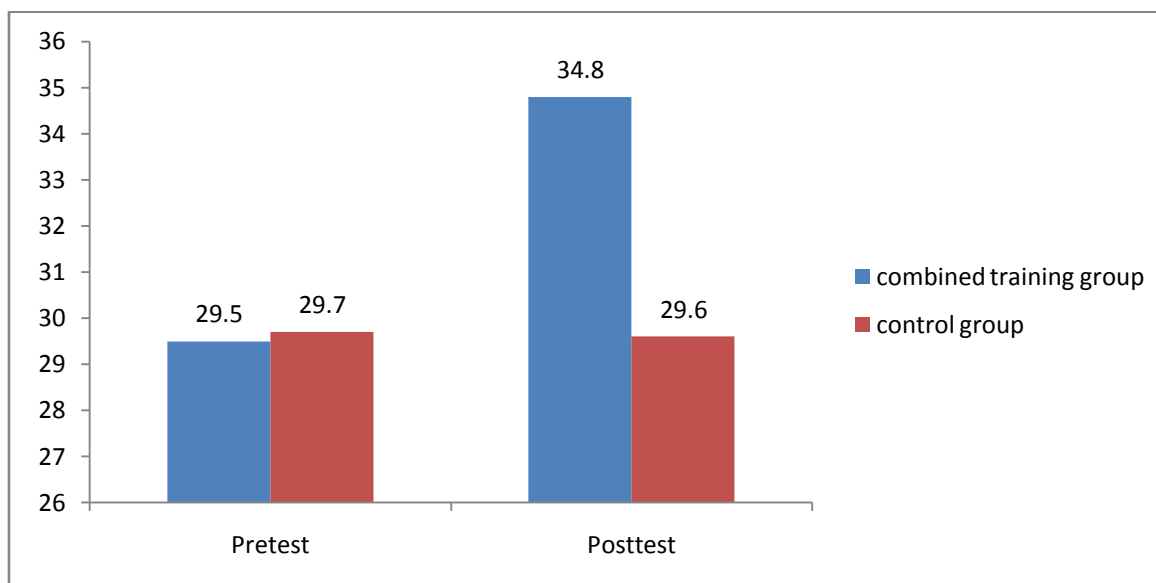


Figure- 1

Bar Diagram Showing Adjusted Post Test Mean Value on Muscular Strength of Combined Training Group and Control Group

DISCUSSION

The study reveals that the 12 weeks of combined training given to the experimental group had a positive effect on the development of selected physical parameters such as speed and muscular strength. The study is in inconformity with the following findings.

Combined training is more effective in improving body composition such as muscular strength, speed some indicators of cardiovascular fitness (Marzolini, Oh & Brooks, 2012). Combination exercise gave greater benefits for weight loss, fat loss and cardiorespiratory fitness than aerobic and resistance training modalities (Ho, Dhaliwal, Hills & Pal, 2012). Newberry and flowers (1999) found that high repetition strength training added to sprint training, increased muscular endurance and speed.

Hence the hypothesis as stated that there would be significant improvement on selected physical parameters such as speed and muscular strength would improve due to the impact combined training between control group and experimental group was accepted .

CONCLUSION

It was concluded that due to the impact of 12 weeks combined training the speed, and muscular strength, of the athletes were significantly improved.

REFERENCES

Books

- Aggarwal, J.C. (1975). Educational Research, New Delhi: The Arya Book Depot, p. 109.
- Barrow, HM & McGee, RM. (1979). A Practical Approach to Measurement in Physical Education, Philadelphia: Lea and Febiger Publication, p.112.
- Rogers, Frank L. (2000). Track and Field Coaching Manual, USA: Human Kinetic Publishers, p.44.

JOURNALS

- Ho, SS., Dhaliwal, SS., Hills, AP., Pal, S. (2012). The effect of 12 weeks of aerobic, resistance or combination exercise training on cardiovascular risk factors in the overweight and obese in a randomized trial. BMC Public Health. 28;12:704.
- Marzolini, Susan, Oh, Paul I and Brooks, Dina. (2012). Effect of combined aerobic and resistance training versus aerobic training alone in individuals with coronary artery disease: a meta-analysis, European Journal of Preventive Cardiology, 19(1): 81-94.
- Newberry and L. Flowers, "Effectiveness of combining sprint and high - repetition squat resistance training in anaerobic conditioning" Medicine and Science in Sports and Exercise, Supplement Abstract 31:5, 1999



YOGA FOR AUTISTIC CHILDREN

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ABSTRACT

The purpose of the study was to find out the Influence of Yoga on flexibility among Autistic Children, for this purpose, fifty male autistic children were selected from YMCA College Special School and Pathway special school, Chennai, India. The subjects selected for the study did not undergo any special training or coaching programme other than the regular activities as per the curriculum. They were divided into two groups of twenty five each as hypo active group and hyper active group on the basis of medical report. They were at the age group of six to twelve years. The investigator had to depend upon the specialists who are qualified in handling the autistic children to choose the subjects and classify them into two groups. All the subjects of the hypo and hyperactive autistic children were tested on flexibility prior to and after thirty six weeks of experimental period as pre and post tests respectively by using standardized tests. The data collected from both the groups prior to and post experimentation were statistically analysed by using two way (2 x 2) factorial ANOVA with last factor repeated measures. The simple effect test was used as a follow up test. Since, only two groups and two testing conditions were compared, there was no need to apply the post hoc test to determine the paired mean differences. In all cases, the level of confidence was fixed at 0.05 for significance. The result of the study showed that the training program has resulted in a significant improvement in flexibility for hyper and hypo group, whereas, it resulted in a significant increase in flexibility among hyper and hypo active group.

KEYWORDS: Flexibility, Experimentation, Hyper, Investigator, Rehabilitation

INTRODUCTION

Yoga is important for freeing the mind of various psychogenic diseases and autism. It may also improve rehabilitation of autistic children, which is the burning problem of modern society. Autistic children can be treated up to a great extent with the help of yogic techniques. We may wonder how autistic children can perform yoga as their understanding capacity and concentration is poor. But we found that they can be helped by passively putting them in different postures according to their ability to do different yoga postures and making yoga interesting through yoga.

Autism

Autism is known as a 'spectrum disorder,' Autism is known as a 'spectrum disorder,' and by restricted and repetitive behavior. These signs all begin before a child is three years old. Autism affects information processing in the brain by altering how nerve cells and their synapses connect and organize; how this occurs is not well understood.

Hyperactive – Autism

Hyperactivity can have a medical reason. However, most children with Autism are restless because of an impairment of their imaginative and social skills. They cannot play with their toys and other children meaningfully and find it very difficult to occupy themselves.

Hypoactive – Autism

Hypoactive (meaning under active) moves slow, walks slow, had a hard time keeping up little brother and stuff. If a child who is under active they deal everything slowly.

Causes of autism

- Brain abnormality, before, during or after birth
- Untreated PKU, Rubella, stomach diseases
- Chemical exposures during pregnancy
- Biochemical imbalances and
- Genetic factors

Characteristics

- Problem in motor control (tiptoe walking, flapping limbs and add posture
- Abnormal response to sensory experience, either indifferent or over- reactive.
- Inappropriate emotional reactions, laughing, crying for no apparent reason.
- Problems in self-help skills, weak concentration, easily distractable
- Prone to convulsions, some of the effected persons.
- Exhibit confusion over which is left hand and which is right.
- Have no fear of realistic dangers, heights, fire and so on.

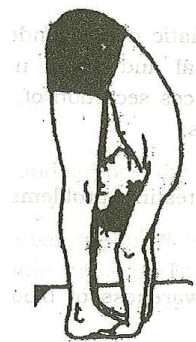
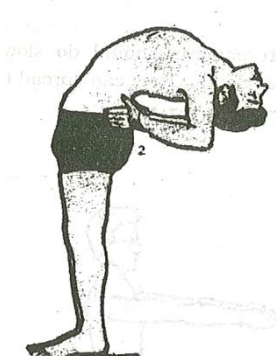
Suitable Yoga for Autistic Children

Recent studies in this area rightly say that yoga have great impact on autistic children to a great extent with the help of regular yoga practices. Improved socialization will tend towards rehabilitation of autistic children, but a trained yoga teacher should initiate and guide yoga training from preliminary to advanced stages.

1. Balancing poses to Increase concentration. Balance postures such as Vrishasana, Ardha Chakrasana and Sirsasana.

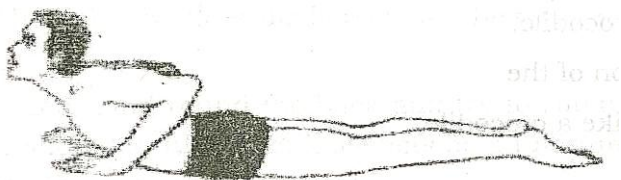
ARDHA CHAKRASANA (Half Moon Pose)

PADA HASTASANA (Hands to feet Pose)



2. Backward Bending postures are useful for improving their self confidence level and also improve flexibility of the body

BHUJA GASANA (Cobra Pose)



3. Inverted poses to improve blood flow to the brain and activate the brain cells

Viparitarani (psychic Union Pose) Sarvangasana (Shoulder Stand) Matsyasana (Fish Pose) Halasana (Plough pose), Padahastana, Trikonasana, Veerabhadrasana and suptavajrasana.

4. Suryanamaskars performed with right type of breathing

5. Triangle pose (Trikonasana) help in increasing blood flow to the head region and when performed alternately with standing postures the changes in the blood flow will activate the brain cells through releasing the blockages in the nadis for flow of prana.

Analysis and interpretation of the data

The data collected from both the groups prior to and post experimentation were statistically analyzed by using two way (2 x 2) factorial ANOVA with last factor repeated measures. The simple effect test was used as a follow up test. Since, only two groups and two testing conditions were compared, there is no need to apply the post hoc test to determine the paired mean differences. In all cases, the level of confidence was fixed at 0.05 for significance.

The pretest means on flexibility of hyper active and hypo active groups were 0.5856 and 0.5880 respectively. The obtained F ratio was 0.206 and it is insignificant at 0.05 level of confidence. It indicates that there was no significant difference in flexibility among these groups before the commencement of training program itself in favour of hypo active group.

The posttest means on flexibility of hyper active and hypo active groups were 0.6452 and 0.6632 respectively. The obtained F ratio of 11.571 is greater than table value of 4.042 for df 1 and 48, indicating that there was a significant difference on flexibility even after completion of training program.

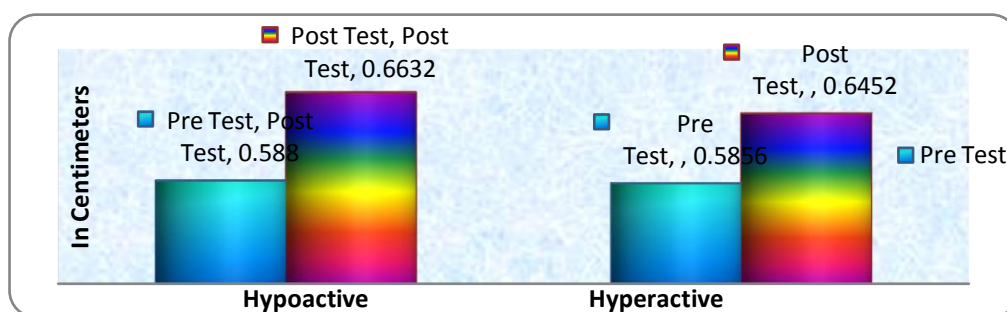


Figure- I: Graphical Illustration of data on Flexibility

Thus, it is concluded that the training program has resulted in a significant improvement in flexibility among hyper active and hypo active groups.

CONCLUSION

The Specified Yogasanas are very useful to reduce the hyper and hypo activities and increase flexibility of Autistic children. If a proper training program will be designed in longer period of time it has significant improvement in hyper and hypo activity and flexibility of autistic children.



IDENTIFYING AND EVALUATING PERSPECTIVES AMONG ADULT GYM MEMBERS ON DIETARY SUPPLEMENTS

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ABSTRACT

The purpose of the present study was to identify the approaches and perspectives of the community who workout in gyms and take dietary supplements. It investigated how experts and professionals view sports dietary supplement consumption, and how they converse this issue to gym members. Methods: Study was conducted (n=55) constructivist qualitative research in semi structured one – on – one depth interviews (n=35) with a heterogeneous population of adult gym goers who take dietary supplements, and (n=20) with dietitians and fitness trainers. Results: Instructors and Trainers assumed that benefits of supplement consumption transcend risk, and therefore they did not express a message to their clients about risk. Dietitians in this study deny the use of supplements and trainers and less confidence if trainers had adequate knowledge to sustain it. Conclusion: Lack of alertness of risks suggests that there is a must for communication on this issue. It is recommended that professionals (physicians and dietitians) be present in sports clubs that sell such products in an uncontrolled way. It can be further represent a basis for recommendations for all the sports associations and for the Health ministry to enhance the consequence of apprising gym members about the ambiguity and about the magnitude of cautious utilization, while providing clear information about the Sports dietary supplements.

KEYWORDS: Sports Dietary Supplements, Risk Perception, Health Authority, Instructors, Qualitative Research.

INTRODUCTION

The prevalence of using sports dietary supplements (SDS) has improved over the last 30 years among adults in the United States. (Jawadi AH). The prevalence of using sports dietary supplements among gymnasium users in Riyadh, Saudi Arabia in 2015 was 37.8(Addar AM) and in gyms in Lebanon the intake of dietary supplements was experimental about 38% of the study participants (Alazzam AS)

According to the literature, the supplement users want to maintain health and intercept nutritional deficits, improve their energy altitude, speed up healing after physical activity, and enhance their immune systems (Kirk SF)

Studies signifies that some supplements have been found that might have side effects like Insomnia, Cardio vascular problems, Physiological symptoms of emotional turmoil, liver failure or damage (Aboumrada E) and melamine.

In order to transmitting the risk, there is a need to take the risk communication approach to create a convertible progression of interchanging information among individuals, groups and institutes. According to Sandman's risk communication model (Petroczi A), risk observation is encompassed of the hazard level (risk evaluation) and infuriate level (the emotions the risk invigorating)

METHODS:

In order to make certain approaches and aspects concerning SDS use, a qualitative constructivist study was designed (Deuster PA). Data were collected from a heterogeneous sample of gym members in the sports club of Coimbatore.

Research tools and Sample selection

The research population subsisted of 55(n = 55) participants, included men and women by heterogeneity sampling (Lieberman HR), in the sports club of Coimbatore aged between 18 and 50 consuming sports nutrition supplements. This study was conducted for 30 – 35 minutes with gym goers (n=35), and (n = 20) instructors or with trainers and dietitians.

The Research Procedure

The meetings were conducted over the phone. The interviews were held, in person, dietitian's room in the sports club, at the gym, interviewees' home, or over the phone for 30 – 35 minutes.

COLLECTION OF DATA

After conducting a pilot interview, the questions were revised and edited according to pilot study. In order to validate the study, the findings of this study were compared with findings of previous studies. The data of the interviews and documents were saved, ranging from the first stage of data collection to the final research findings and conclusions.

ANALYSIS

The collected data from the interviews were analyzed according to the Thematic Analysis method (Boyatzis RE). Each and every interview was analyzed separately, and themes were constructed during this stage. In the second stage, suggestions were made that offered the approaches and the aspects of the three different sub - groups (trainers, gym members and

dietitians). Divided three sub -groups in the third stage were integrated while constructing categories and comparing all the groups.

RESULTS

The study results were a gap in risk awareness of dietary supplement usage between dietitians, gym members and fitness trainers. There was a low risk perception among sports dietary supplements consumers. Trainers assumed that benefits of in taking supplements exceeded risk, and therefore they did not transmit a message to their clients about the risk. Dietitians abandoned the use of supplements for fitness and performance.

CONCLUSION

The findings of the present study expose that improbability perceived by gym members can be explained by the gaps in the guidance of professional guidance and lack of guideline for supplement publicity and promotion. It can be further represent a basis for recommendations for all the sports associations and for the Health ministry to enhance the consequence of apprising gym members about the ambiguity and about the magnitude of cautious utilization, while providing clear information about the Sports dietary supplements.

REFERENCES:

1. **Boyatzis RE.** Transforming Qualitative Information: Thematic Analysis and Code Development. 1998.
2. **Conner, Kirk SF, Barrett JH.** Why do women use dietary supplements? Use of planned behavior theory in exploring beliefs about their use Soc Sci Med. 2001;52(4):621-33
3. **Jawadi AH, Addar AM, Alazzam AS, Alrabieah FO, Alsheikh AS, Ameer RR, Aas A, Osman AK, Badri M.** Prevalence of Dietary supplements Use among Gymnasium Users. Journal of Nutrirtion and Metabolism. 2017
4. **Petroczi A, Naughton DP.** Use of supplement in sport: Congruence between rationale and practice is potentially dangerous J Occup Med Toxicol. 2007;2:4
5. **Salami A, Ghaddar A, Aboumard E, Joumaa WH:** Dietary supplement use in sport gyms in Lebanon: Are necessary and are there side effects? Intn Journal of High risk behaviours and addiction 2016(In Press)



AN EVOLUTIONARY ANALYSIS OF TRADITIONAL SPORTS AND GAMES WITH MODERN SPORTS IN TAMIL NADU

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ABSTRACT

Traditional sports and games cultivate local and regional customs strengthen the sense of national belongings. Locally or regionally rooted traditional sports and games encourage exchange between district and regions and preserve a sense of cultural identity by providing marks of roots and reference. In this paper the author overview the traditional sports and games with modern sports spread in the Tamil Nadu rural and urban places. The author brings out the procedure of play (rules and regulation) with scoring methods, type of games, and purpose of play of traditional indigenous games. All most the data were collected from the rural and urban people of 32 districts in Tamil Nadu, India. The researcher was divided into five regions of Tamil Nadu and the data collected from people who are played and come across in their lifestyle of traditional sports and games. The methods used for collecting data by through interview, photos and live play demo. Totally 14 traditional sports and games with modern sports are evaluated from the Tamil Nadu state, India. And found that, traditional sports and games with modern sports played in the different regions in Tamil Nadu. This study concluded that, the traditional sports and games inter correlated with 14 modern sports in the all over Tamil Nadu, it carries moral value and cultural heritage and develops the integrity among the people.

KEYWORDS: *Traditional Sports and Games (TSG), Modern sports, Cultural, Heritage and Integrity.*

INTRODUCTION

Indians in traditional times used a variety of objects in different shapes and forms to play sports, including carved pieces of wood, stones, sticks, bones, and animal bladders. Ball games came in many forms and varieties for both men and women. The ball was usually propelled by being kicked, batted, or thrown with a racket or stick. Players were prevented from using their hands in some games.

Traditional sports and games Play is important to every aspect of children's development, social, physical and cognitive, but it is still regarded by many as being of very little importance. Play fosters important social skills, together with sharing, flip taking, and developing and consolidating friendships. It's an important arena for the expression of children's feelings, anger, love and joy. Through traditional sports and games playing children learn about the rules and values of their cultures.

MODERN SPORTS

Modern sport tends toward the secular rather than the sacred. A focus on equality, each within the conditions of competition and in opportunities to compete, consumes modern sport. Modern sport replicates modern social structures in different ways that still, manifesting the peculiar modern manias for specialization, rationalization, and quantification in unique ways. In modern history, sport is embedded in the major trends of modernity itself, industry, urbanization, and nationalism.

Based on structures and function of traditional sports and game with modern sports one can recognizes a variations. These differences between traditional sports and game with modern sports can be described in terms of what characterize a game as shown in the following table.

Characteristics	Traditional sports and games	Modern sports
Organization	Informal. Local level	Formal, institutionalized, local to international level.
Rules	Few, simple and oral	Many, elaborate and written.
Skills	Simple, common	Complex and specialized.
Gender of players	Gender specific games; seldom played together.	Both gender play same sports, sometimes together.
Procedures	No precise boundaries, duration, or number of players.	Definite boundaries, time limits, number of player.
Equipment	Common, low or no cost, made by players.	Specialized, high cost, manufactured.
Social control	By players in the game	Outside officials and bureaucracy.
Social interaction model	For males: self-testing. For females: cooperative.	For both genders: competitive.
Learning process	Observation and imitation.	Formal instruction and coaching.
Outcome	Process oriented meaning that the activity itself is more important than the end results.	Results oriented meaning that there are clear cut winner and losers as results of a play.

OBJECTIVES OF THE STUDY

The objective of the study is to analyses the contents and features of the traditional sports and games with modern sports in Tamil Nadu and in terms of historical origin, present situation and developing prospect. Moreover, the author points out the interactive development of traditional sports and also find out the relationship or interpretation of traditional sports and games with modern sports.

METHODOLOGY

The data and information on traditional sports and games were collected by through direct interview to the people in and around the rural area of various part of the Tamil Nadu, especially the author covered almost all parts of the regions in Tamil Nadu. The author divided the 32 districts from Tamil Nadu into five regions that is North region, South region, East region, West region, and Center region. These regions are divided on the basis of geographical map structure in Tamil Nadu. The list of 32 district (divided regions) in Tamil Nadu are given in the below table.

Five regions of divided districts of Tamil Nadu are as follows

North districts	South districts	East districts	West districts	Centre districts
1. Dharmapuri	1. Dindigul	1. Thiruvavarur	1. Coimbatore	1. Namakkal
2. Tiruvannamalai	2. Madurai	2. Nagapattinam	2. Erode	2. Perambalur
3. Vellore	3. Theni	3. Cuddalore	3. Nilgiris	3. Ariyalur
4. Krishnagiri	4. Sivagangai	4. Villupuram	4. Tiruppur	4. Tiruchirappalli
	5. Viruthunagar	5. Kanchipuram	5. Salem	5. Karur
	6. Ramanathapuram	6. Chennai		6. Thanjavur
	7. Thoothukkudi	7. Thiruvallur		7. Pudukkottai
	8. Thirunelveli			
	9. Kanniyakumari			

PROCEDURE OF COLLECTION OF DATA

The investigator went to all 32 districts and covered at least 10 rural and urban places in a district for collecting the data. The main procedure of the data through using interview method and taken photos and videos. The complete playing procedure from start to finish of the game, rules and regulations with scoring method of traditional sports and games with modern sports are collected. The all information was recorded.

Relationship between Traditional Sports with Modern Sports

Mostly the relationship between traditional sports and games with modern sports is on the basis of rules and regulation of the game. Some games are interpreted with the found data and it is discussed below;

Kittippullu (கிட்டிப்புள்ளு) vs Cricket

In the game of **Kittippullu** the hitter hit the kittippullu after the thrower thrown and the defender teammates stop the Kittippullu and throw back to thrower. The defender caught the Kittippullu in the air after the hitter strikes the Kittippullu. The hitter is called caught out. GilliDanda is an ancient sport of India, possibly with origins over 2500 years ago. It is believed to be the origin of Western games such as cricket.

In the game of **Cricket**, the batsman after hitting the ball the defender (fielder) stop the ball and throw back to pitch. The defender caught the air ball after the batsman hit, the batsman caught out. There are no sure theories about the origin of Cricket in India but as British ruled on India for over 200 years. Both these games are similarity found in few rules. So there is a relationship is found between Kittippullu and Cricket.

Satukudu (சடுகுடு) vs Kabaddi

Satukudu is one of the traditional sport has similar relationship with the Kabaddi modern sport. In satukudu the team equally divided into two, plying in the mud court. A player play and move to the opponent side with saying of satukudusatukudu (song) with his one deep breath of khant and try to touch the opponent to get score. The defenders try to catch the offender. Then after the opponent team offender sing the song and touch the opponent. If he touches one the point is one, if he touches two the point is two respectively. The team scores maximum after given time that team considered as winner.

In the game of **Kabaddi** the above said rules are followed to win the game. Here the difference is the offender saying with KabaddiKabaddi till given time and rules changes are 7 a side game. But there are some correlated similarity found between Satukudu and kabaddi. Kabaddi originated in ancient India in Tamil Nadu, a southern Indian state.

Ilavattakkal (இளவட்டக்கல்) vs Weight lifting

In the traditional sport of **Ilavattakkal** is one of the talent identification games in youth in the village, the rule is how many time the Ilavattakkal to lift above the shoulder and throw back, the highest number of throwers was called winner. Ancient Greek civilizations also portray the sport, depicting Greeks lifting heavy stones.

In the event of **Weight lifting** the weight lifter lift the bar above the shoulder and drop. The highest weight bearer called as winner. Weightlifting has ancient origins.

Silambam (சிலம்பம்) vs fencing

In the game of **Silambam**, silambam players try to hit the poll with the opponent body while hitting both the silambam is defense to not touch the body.

In the game of **Fencing**, The fencer try to touch the body by the weapon of an opponent to get the scoring, the defender defenses to tough the body by hitting the weapon. The origin and historical development of Silambam and fencing may have begun with the early Dravidians from ancient Tamil Nadu. Development of this art at the time of sieges and king about 5000 years.

AduPuliAttam (ஆடுபுலிஆட்டம்) vs Chess

The game of **AduPuliattam** plying by two players. In this game alternate player can move the coin. The strategy of the game is one player moving the coin and arrest the opponent coin to move. The game is end with arresting the movement of opponent coin in any side.

In **chess** also similar type of alternate movant of coins and castling and arrest the opponent king to move in any side. This is called checkmate. The game is winning to checkmate.

Ottam (ஓட்டம்) vs running

Ottam is the game to run and winning the target, it has start and finish. Who come first is the winner.

In **running** competition, the runner in all sprinting events, the fast runner cross the finishing line consider as winner.

Kilitthattu (கிளித்தட்டு) vs AtyaPatya

Kilitthattu is the game playing between two teams, one is the chaser another one is runner. The chaser was stands inside the line and runners are standing in the starting line and run to end line and return back without caught by the chaser. The winner team is consider as the total number of players clearing and return to the finishing line called winner.

The game of **AtyaPatya** the similar rules and regulations are followed. This might be very close similarity in these games. The investigator stated that the **AtyaPatya** game is the originated from this **Kilitthattu** game.

Viraivu Cycle Pootti (விரைவுசைக்கிள் போட்டி) vs Cycle race

Viraivu cycle pootti is the game run the cycle from start and reach to the distance who comes first as the winner. Here there is no constant distance mentioned, the distance they would say from the point to finishing point.

In the game of **cycle race** the distance is mentioned clearly. The cycle race players stand from the starting point to raid fast as possible and cover the distance and who comes first is the winner. These two game has similar rules and regulation.

Ontivil (ஒண்டிவில்) vs Archery

Ontivil is using by **Ontivil** instrument it consist of wooden angle with rubber. In this game the player hitting the target by small stones on some targeted things accurately, who consecutively hitting the things are called winner.

In **Archery**, they using bow as an instrument and hitting the target by arrow. Here the arrows targeted the points to score on circles, who is scored maximum is called winner.

Anil Thanti Vilaiyatuthal (அணில்தாண்டிவிளையாடுதல்) vs Highjump

Anil Thanti Vilaiyatuthal is the game to jump over the less height from the leg to complete height of human as an obstructed. Who cleared the highest height is called as winner.

In **Highjump** event also similar height clearance from low height to maximum height. The player who cleared the maximum height in the competition is the winner.

There is more similarity is found in these games.

Val santai (வாள்சண்டை) vs fencing

Val santai is the defensive game to fight each other with the sword. The player who touches maximum in the opponent is called winner.

In **fencing** game also similar rules and regulation, the fighter who touches maximum on the opponent is called winner.

Thannirilneechalpootti(தண்ணீரில்நீச்சல்போட்டி) vs swimming

Thannirilneechalpootti is the group completion starts from one edge of the reservoir and swim and cross another edge of the reservoir, the player who reaches first is the winner. Here there is no distance measured.

In **swimmings** similar competition but fixed 50 meter distance and various style of swimming is there in competition. The ultimate winning is who come first.

Su Vilaiyattu (சுவிலையாட்டு) vs Kho – Kho

Su Vilaiyattu is the game with number of players playing to chase and run. Which team made maximum out is the winner. Here there is no post to turn. No limitation to run.

But in **Kho-kho** game similar rules like one team is chasing another team run. Kho-kho game playing in between the post and limited court is available. Ultimate winner is which team made out (defense) is considered as winner.

Malyuttham (மல்யுத்தம்) vs wrestling

Malyuttham is the game playing singles, one player catch, hold, lift, push and make to lie on the ground, each and every move made getting points. Who scored maximum points are considered as winner.

In **wrestling** plying in the restricted area, play between two players. A player catch, hold, push, lift and make lie on the ground and getting scores. The player who scored maximum points called winner. There is much similarly in this game.

14 LIST OF TRADITIONAL SPORTS AND GAMES WITH MODERN SPORTS

S. No	GAME NAMES	TRADITIONAL SPORTS	MODERN SPORTS
1.	Kittippullu (கிட்டிப்புள்ளு) vs Cricket		
2.	Satukudu (சடுகுடு) vs Kabaddi		

3.	Ilavattakkal (இளவட்டக்கல்) vs Weight lifting		
4.	Silambam (சிலம்பம்) vs fencing		
5.	AduPuliAttam (ஆடுபுலிஆட்டம்) vs Chess		
6.	Ottam (ஓட்டம்) vs running		
7.	Kilitthattu (கிளித்தட்டு) vsAtyaPatya		
8.	Viraivu Cycle Pootti (விரைவுசைக்கிள்போட்டி) vs Cycle race		
9.	Ontivil (ஒண்டிவில்) vs Archery		

10.	Anil Thanti Vilaiyatuthal (அணில்தாண்டிவிளையாடுதல்) vs High jump		
11.	Val santai (வாள்சண்டை) vs fencing		
12.	Thannirilneechalpootti (தண்ணீரில் நீச்சல் போட்டி) vs swimming		
13.	Su Vilaiyattu (சூவிளையாட்டு) vs Kho – Kho		
14.	Malyuttham (மல்யுத்தம்) vs wrestling		

PERSONAL DEVELOPMENT

Improving self-awareness, Improving self-knowledge, improving skills or learning new ones, Developing strengths or talents, Improving wealth, Enhancing manner or the standard of life, Improving health, fulfilling aspirations, Initiating a life enterprise or personal autonomy, Defining and executing personal development plans.

Cultural Development

Tamil culture is that the culture of the Tamil people. Tamil culture is rooted within the arts and ways in which of lifetime of Tamils in India, Sri Lanka, Malaysia, and Singapore and across the world. Tamil culture is expressed in language, literature, music, dance, folk arts, martial arts, painting, sculpture, design, sports, media, comedy, cuisine, costumes, celebrations, philosophy, religions, traditions, rituals, organizations, science, and technology.

CONCLUSION

14 traditional sports and games with modern sports was found in 32 districts of Tamil Nadu. All people support that, traditional sports and games, improve creativity of youngsters; they improve conflict management, team building and understanding group dynamics; and they are more useful than modern games in developing children's skills. The people agree that, this traditional sports and game produce integrity among the people, all the children and adult play in a street joined with all religious and all caste people together, it may result that, it proof the integrity and unit among the people. The traditional sports and games develop the social culture and heritage among the people. The traditional sports and games with modern sports with its varieties of plying throughout the TamilNadu develop physical, mental, social conditions and spiritual faith of mankind.

RECOMMENDATION

1. All most all TamilNadu rural and urban people support that more efforts should be taken to promote and preserve traditional sports and games with modern sports.
2. Within the limitation of this study the results were drawn, there is some more game might be evolutionary from some other traditional sports.
3. The author will recommend to the researchers also done like this study in other states of India.

REFERENCES

1. Proceeding of Traditional Sports and Modern Sports for the Development of Global Human Resource in the 24th Pan Asian International Conference, Visva-Bharati, Santiniketan, W.B, and India Feb.2014.
2. Njaa. ThevaneyaPaavaanar, Tamilnaattu Vilaiyaattukkal, Saiva Sithantha Nurpathippu Kalakam Veliyeedu, 1954.
4. Iraa. Paalasuppiramanyam, Thamilar Naattu Vilaiyaattukal, Ulaka Thamilaraaychi Niruvana Veliyeedu, 1980.
5. Daakdar A. Pichai, Thamilar Panpaattil Vilaiyaattukal, Ulaka Thilaaraaychi Niruvana Veliyeedu, 1983.
6. Pere Lavega Burgués, Traditional Sports and Games in 21st Century Europe: Future Challenges, UNESCO (1990) Actas de la Conferencia General. Volumen I.
7. Lars Hazelton, Traditional Sports and Games in the Modern Societies, TAFISA, recall.



EFFECT OF VARIED SPECIFIC TRAINING ON SKILL PERFORMANCE VARIABLES AMONG SCHOOL LEVEL HAND BALL PLAYERS

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ABSTRACT

The study was to find out the effect of varied specific training on skill performance variables among school level hand ball players. To achieve the purpose of the study, 80 handball players were selected from GKD matric higher secondary school, periyanaickenpalayam, Saravajana higher secondary school, peelamedu, SES matric higher secondary school, Ganapathy and Vidhyanikitan school, peelamedu. The age of the subjects was ranged between 15 and 19 years. 80 subjects were selected at randomly and the subjects were divided into four equal groups namely experimental group I, experimental group II, experimental group III and control group. Thus each group consisted of 20 subjects. The experimental group I underwent 12 week of plyometric training programme and experimental group II underwent 12 weeks of staircase training programme and experimental group III underwent 12 weeks of jump rope training programme and the control group did not involve in any specific training. The pre test and post test were taken to all the four groups before and after the training programme respectively. To analyses the data investigator used ANCOVA for this study. If 'F' ratio is found to be significant the investigator used Schaffer's post hoc test to find out the better group. The study was concluded that the plyometric training group, staircase training group and jump rope training group were better than the control group and also there is no significant deference among plyometric, staircase and jump rope training groups.

KEYWORDS: *Plyometric training, Staircase training, Jump rope training and Skill performance variables.*

INTRODUCTION

“ If the popular study of mankind is man, the proper study of physical education is sport” physical education is imparting learning to choose appropriate physical activity for personal growth, well being, and pleasure in performance. Sports is one of the physical activities played at a level for in conditioning fitness and recreation. Sports itself is a form of culture in society. In this aspect it stands for highly competitive extension and specialized motivation.

Plyometric, Staircase and Jump Rope

Plyometric is a type of exercise training designed to produce fast, powerful movements and improve the functions of the nervous system, generally for the purpose of improving performance in sports. Plyometric movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervations of muscle and surrounding tissues to jump higher, run faster, throw farther, or hit harder, depending on the desired training goal. Plyometric training is used to increase the speed or force of muscular contractions, often with the goal of increasing the height of a jump. **Will and Freeman, 1994.**

While most of us think of exercise as 'sport', the scientific evidence shows it is everyday activities like walking and stairs climbing that are most closely associated with improved health. Stair climbing is recommended by doctors and health authorities worldwide because high-quality studies show: Climbing just eight flights of stairs a day lowers average early mortality risk by 33%. Seven minutes stair climbing a day can halve the risk of heart attack over 10 years. Just two minutes extra stair climbing a day is enough to stop average middle age weight gain. Stair climbing delivers these benefits by improving our cardiovascular fitness. It's officially classed as a 'vigorous' form exercise and burns more calories per minute than jogging. By raising our heart rate, stair climbing helps protect against high blood pressure, weight gain and clogged arteries. This lowers the risk of developing chronic conditions such as diabetes, heart disease, vascular dementia and even some cancers. Stair climbing also exercises our bones and muscles, improving strength, bone density and muscle tone. Incidental physical activities like stair climbing are also associated with improved mental health. They cause our bodies to release endorphins, the so-called feel-good hormones. They also provide time think and reflect - key factors in managing everyday stress and tensions. **Stepjockey 2018.**

Jump-roping is a low-cost physical activity, thus; its impact on the physical fitness is being studied by various researchers. Jump-roping involves the muscles in arms and legs, and it also improves cardiovascular function and metabolism. Rope is a portable tool and jump-roping require minimum space. On the other hand, jump-roping is incredibly cheap compared to the other sports . **Partavi. Sadi Sport Science 6 (2013).**

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of varied specific training on skill performance variables among school level hand ball players.

HYPOTHESIS

- It was hypothesized that the plyometric training, staircase training and jump rope training may be a significant improvement on skill performance variables among school level hand ball players.

DELIMITATION

This study was delimited in the following aspects and these delimitations were taken into consideration while interpreting the results. The study was delimited to following training programme only. (1) Plyometric training, (2) staircase training, (3) jump rope training. Subjects of the present study delimited to GKD matric higher secondary school, periyanaicken palayam, Saravajana higher secondary school, peelamedu, SES matric higher secondary school, Ganapathy and Vidhyanikitan School, peelamedu. The study was delimited to male hand ball players only. The age group of the subject was ranged 15 to 19. The study was delimited to Shooting, Dribbling and Passing. The period of training programme was delimited to 12 weeks only. Each group was training weekly three days the selected criterion variables for the study were assessed by the standardized test items.

METHODOLOGY

Selection of Subjects

- To achieve the purpose of the study, 80 handball players was selected randomly from GKD matric higher secondary school, periyanaickenpalayam, Saravajana higher secondary school, peelamedu, SES matric higher secondary school, Ganapathy and Vidhyanikitan school, peelamedu, Coimbatore.
- The age of the subjects was ranged between 15 – 19 years.

Selection of Variables

The research scholar reviewed the available scientific literatures pertaining to the problem understanding from books, journals, magazines and research papers considering the feasibility of criteria and availability of instruments and the following variables were selected.

Independent variables

The following were the independent variables selected for this study.

- Plyometric training
- Staircase training
- Jump rope training

Dependent variables

The following were the dependent variables selected for this study. Skill performance variable

- Shooting
- Dribbling
- Passing

SELECTION OF THE TEST

S.No	Components	Test Items	Units
1	Shooting	Jump shot test (Markas H.Lakde, 2004)	Points
2	Dribbling	Dribbling test (Markas H.Lakde, 2004)	In seconds
3	Passing	One hand side pass test (Markas H.Lakde, 2004)	Points

RESULTS

TABLE – 2
COMPUTATION OF ANALYSIS OF COVARIANCE RESULTS ON SHOOTING AMONG
EXPERIMENTAL GROUPS AND CONTROL GROUP

Test	Plyometric Training Group	Staircase Training Group	Jump rope Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean	25.30	27.60	22.90	24.35	Between	233.54	3	77.85	1.05
SD	8.49	10.45	8.47	6.62	Within	5643.35	76	74.26	
Post Test Mean	30.30	34.60	30.10	24.55	Between	1018.24	3	339.41	8.42*
SD	6.43	6.96	5.82	6.13	Within	3063.75	76	40.31	
Adjusted Post Test Mean	30.13	32.99	31.45	24.98	Between	718.57	3	239.52	21.74*
					Within	826.37	75	11.01	

* Significant at 0.05 level of confidence.

Required table value at 0.05 level of significance for 3 & 76 and 3 & 75 degree of freedom 2.76

Table 2 shows that the pre-test mean values of experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 25.30, 27.60, 22.90 and 24.35 respectively. And standard deviation values of experimental group I, experimental group II experimental group III and control group are 8.49, 10.45, 8.47 and 6.62 respectively. The obtained 'F' ratio for pre-test on shooting is 1.05. It is lesser than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on shooting.

The post-test mean value on shooting of experimental group I (plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 30.30, 34.60, 30.10 and 24.55 respectively. And standard deviation values of experimental group I, experimental group II experimental group III and control group are 6.43, 6.96, 5.82 and 6.13 respectively. The obtained 'F' ratio for post -test on shooting is 8.42. It is greater than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on shooting.

The adjusted post-test mean value on shooting of experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 30.13, 32.99, 31.45 and 24.98 respectively. The obtained 'F' ratio for post -test on shooting is 21.74. It is greater than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on shooting.

The result of the study indicated that there is significant difference among the plyometric training group, staircase training group, jump rope training group and control group on shooting.

Whenever the obtained 'F' ratio of adjusted post-test mean was found to be significant, the investigator applied the Scheffe's post hoc test to find out the paired mean differences and it was presented in table -3

TABLE - 3
SCHEFFE POST HOC TEST FOR THE DIFFERENCE BETWEEN ADJUSTED
POST-TEST MEAN OF SHOOTING

S.No	Plyometric Training Group	Staircase Training Group	Jumprope Training Group	CONTROL GROUP	Mean Difference	Confidence Interval
1	30.13	32.99			2.86	3.01
2	30.13		31.45		1.32	
3	30.13			24.98	5.15*	
4		32.99	31.45		1.54	
5		32.99		24.98	8.01*	
6			31.45	24.98	6.47*	

*Significant at 0.05 level of confidence.

The table –3 shows that the mean difference value between, experimental group I (Plyometric training group), experimental group II (staircase training group) is 2.86 on shooting, it is lesser than the confidence interval value of 3.01, it indicates that there is no significance difference between experimental group I and experimental group II on shooting.

The mean difference value between, experimental group I (plyometric training group) and experimental group III (jump rope training group) is 1.32 on shooting, it is lesser than the confidence interval value of 3.01, it indicates that there is no significance difference between experimental group I and II on shooting.

The mean difference value between, experimental group I (plyometric training group) and control group is 5.15 on shooting, it is greater than the confidence interval value of 3.01, it indicates that there is significance difference between experimental group I and control group on shooting.

The mean difference value between, experimental group II (staircase training group) and experimental group III (jump rope training group) is 1.54 on shooting, it is lesser than the confidence interval value of 3.01, it indicates that there is no significance difference between experimental group II and experimental group III on shooting.

The mean difference value between, experimental group II (staircase training group) and control group is 8.01 on shooting, it is greater than the confidence interval value of 3.01, it indicates that there is significance difference between experimental group II and control group on shooting.

The mean difference value between, experimental group III (jump rope training group) and control group is 6.47 on shooting, it is greater than the confidence interval value of 3.01, it indicates that there is significance difference between experimental group III and control group on shooting.

The pre, post and adjusted post-test mean value of experimental group I (plyometric training), experimental group II (staircase training group), experimental group III (jump rope training group) and control group on shooting were graphically represented in figure - 1

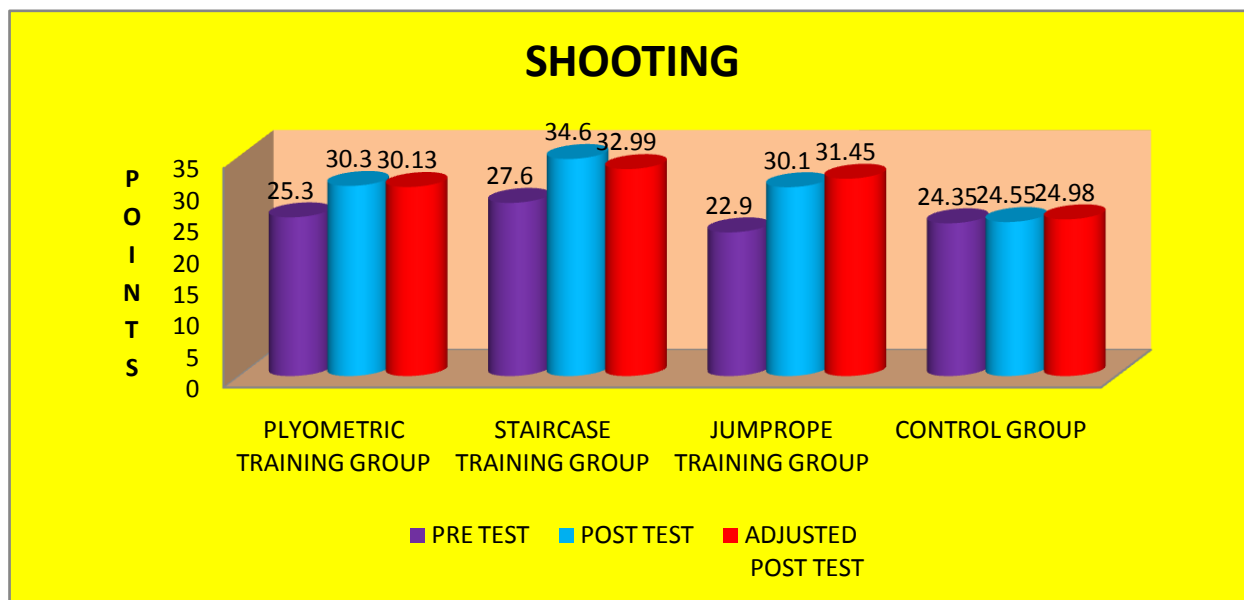


Figure - 1

Mean Values on Shooting of Plyometric Training Group Staircase Training Group Jump Rope Training Group and Control Group

TABLE – 4

COMPUTATION OF ANALYSIS OF COVARIANCE RESULTS ON DRIBBLING AMONG EXPERIMENTAL GROUPS AND CONTROL GROUP

Test	Plyometric Training Group	Staircase Training Group	Jump rope Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean	7.91	7.92	8.14	8.07	Between	0.76	3	0.26	0.46
SD	0.59	0.59	1.12	0.51	Within	41.86	76	0.55	
Post Test Mean	7.09	7.36	7.56	7.99	Between	8.41	3	2.80	7.84*
SD	0.70	0.39	0.70	0.53	Within	27.17	76	0.36	

Adjusted Post Test Mean	7.14	7.40	7.50	7.96	Between	6.89	3	2.29	9.08*
					Within	18.96	75	0.25	

* Significant at 0.05 level of confidence.

Required table value at 0.05 level of significance for 3 & 76 and 3 & 75 degree of freedom 2.76

Table IV shows that the pre-test mean values of experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 7.91, 7.92, 8.14 and 8.07 respectively. And standard deviation values of experimental group I, experimental group II experimental group III and control group are 0.59, 0.59, 1.12 and 0.51 respectively. The obtained 'F' ratio for pre-test on dribbling is 0.46. It is lesser than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on dribbling.

The post-test mean value on dribbling of experimental group I (plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 7.09, 7.36, 7.56 and 7.99 respectively. And standard deviation values of experimental group I, experimental group II experimental group III and control group are 0.70, 0.39, 0.70 and 0.53 respectively. The obtained 'F' ratio for post -test on dribbling is 7.84. It is greater than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on dribbling.

The adjusted post-test mean value on dribbling of experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 7.14, 7.40, 7.50 and 7.96 respectively. The obtained 'F' ratio for post -test on dribbling is 9.08. It is greater than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on dribbling.

The result of the study indicated that there is significant difference among the plyometric training group, staircase training group, jump rope training group and control group on dribbling.

Whenever the obtained 'F' ratio of adjusted post-test mean was found to be significant, the investigator applied the Scheffe's post hoc test to find out the paired mean differences and it was presented in table - V

TABLE- 5
SCHEFFE POST HOC TEST FOR THE DIFFERENCE BETWEEN ADJUSTED POST-TEST MEAN OF DRIBBLING

S. No	Plyometric Training Group	Staircase Training Group	Jumprope Training Group	Control Group	Mean Difference	Confidence Interval
1	7.14	7.40			0.26	0.45
2	7.14		7.50		0.36	

3	7.14			7.96	0.82*	
4		7.40	7.50		0.10	
5		7.40		7.96	0.56*	
6			7.50	7.96	0.46*	

*Significant at 0.05 level of confidence.

The table – V shows that the mean difference value between, experimental group I (Plyometric training group), experimental group II (staircase training group) is 0.26 on dribbling, it is lesser then the confidence interval value of 0.45, it its indicates that there is no significance difference between experimental group I and experimental group II on dribbling.

The mean difference value between, experimental group I (plyometric training group) and experimental group III (jump rope training group) is 0.36 on dribbling, it is lesser then the confidence interval value of 0.45, it its indicates that there is no significance difference between experimental group I and II on dribbling.

The mean difference value between, experimental group I (plyometric training group) and control group is 0.82 on dribbling, it is greater than the confidence interval value of 0.45, it its indicates that there is significance difference between experimental group I and control group on dribbling.

The mean difference value between, experimental group II (staircase training group) and experimental group III (jump rope training group) is 0.10 on dribbling, it is lesser then the confidence interval value of 0.45, it its indicates that there is no significance difference between experimental group II and control group on dribbling.

The mean difference value between, experimental group II (staircase training group) and control group is 0.56 on dribbling, it is greater than the confidence interval value of 0.45, it its indicates that there is significance difference between experimental group II and control group on dribbling.

The mean difference value between, experimental group III (jump rope training group) and control group is 0.46 on dribbling, it is greater than the confidence interval value of 0.45, it its indicates that there is significance difference between experimental group III and control group on dribbling.

The pre, post and adjusted post-test mean value of experimental group I (plyometric training), experimental group II (staircase training group), experimental group III (jump rope training group) and control group on dribbling were graphically represented in figure - 2

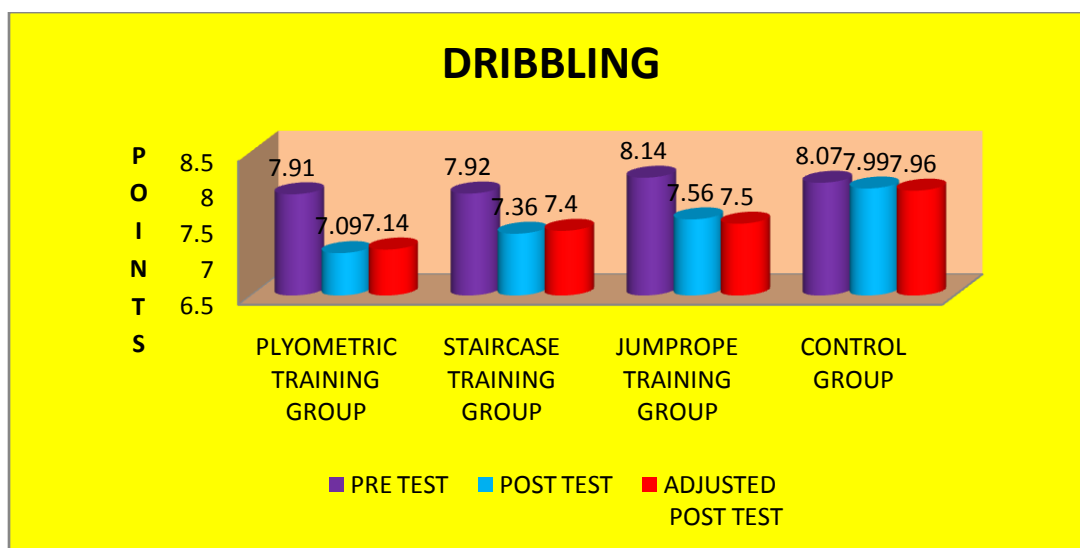


Figure - 2

Mean Values on Dribbling of Plyometric Training Group Staircase Training Group Jump Rope Training Group and Control Group

TABLE – 6
COMPUTATION OF ANALYSIS OF COVARIANCE RESULTS ON PASSING AMONG
EXPERIMENTAL GROUPS AND CONTROL GROUP

Test	Plyometric Training Group	Staircase Training Group	Jump rope Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean	17.15	17.35	17.10	16.60	Between	6.10	3	2.03	0.09
SD	3.54	3.58	4.38	6.36	Within	1615.70	76	21.26	
Post Test Mean	23.80	24.50	25.90	16.80	Between	989.80	3	329.93	13.59*
SD	4.15	4.15	5.05	6.10	Within	1845.20	76	24.28	
Adjusted Post Test Mean	23.74	24.32	25.87	17.07	Between	905.51	3	301.83	18.06*
					Within	1253.57	75	16.71	

* Significant at 0.05 level of confidence.

Required table value at 0.05 level of significance for 3 & 76 and 3 & 75 degree of freedom 2.76

Table 4 shows that the pre-test mean values of experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 17.15, 17.35, 17.10 and 16.60 respectively. And standard deviation values of experimental group I, experimental group II experimental group III and control group are 3.54, 3.58, 4.38 and 6.36 respectively. The obtained 'F' ratio for pre-test on passing is 0.09. It is lesser than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on passing.

The post-test mean value on passing of experimental group I (plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 23.80, 24.50, 25.90 and 16.80 respectively. And standard deviation values of experimental group I, experimental group II experimental group III and control group are 4.15, 4.15, 5.05 and 6.10 respectively. The obtained 'F' ratio for post -test on passing is 13.59. It is greater than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on passing.

The adjusted post-test mean value on passing of experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) and control group are 23.74, 24.32, 25.87 and 17.07 respectively. The obtained 'F' ratio for post -test on passing is 18.06. It is greater than the required table value of 2.76 for df 3 and 76 at 0.05 level of confidence on passing.

The result of the study indicated that there is significant difference among the plyometric training group, staircase training group, jump rope training group and control group on passing.

Whenever the obtained 'F' ratio of adjusted post-test mean was found to be significant, the investigator applied the Scheffe's post hoc test to find out the paired mean differences and it was presented in table - 7

TABLE-7
SCHEFFE POST HOC TEST FOR THE DIFFERENCE BETWEEN ADJUSTED POST-TEST MEAN OF PASSING

S.NO	PLYOMETRIC TRAINING GROUP	STAIRCASE TRAINING GROUP	JUMPROPE TRAINING GROUP	CONTROL GROUP	Mean Difference	Confidence Interval
1	23.74	24.32			0.58	3.70
2	23.74		25.87		2.13	
3	23.74			17.07	6.67*	
4		24.32	25.87		1.55	
5		24.32		17.07	7.25*	
6			25.87	17.07	8.80*	

*Significant at 0.05 level of confidence.

The table –7 shows that the mean difference value between, experimental group I (Plyometric training group), experimental group II (staircase training group) is 0.58 on passing, it is lesser then the confidence interval value of 3.70, it its indicates that there is significance difference between experimental group I and experimental group II on passing.

The mean difference value between, experimental group I (plyometric training group) and experimental group III (jump rope training group) is 2.13 on passing, it is lesser then the confidence interval value of 3.70, it its indicates that there is no significance difference between experimental group I and II on passing.

The mean difference value between, experimental group I (plyometric training group) and control group is 6.67 on passing, it is greater then the confidence interval value of 3.70, it its indicates that there is significance difference between experimental group I and control group on passing.

The mean difference value between, experimental group II (staircase training group) and experimental group III (jump rope training group) is 1.55 on passing, it is lesser then the confidence interval value of 3.70, it its indicates that there is no significance difference between experimental group II and control group on passing.

The mean difference value between, experimental group II (staircase training group) and control group is 7.25 on passing, it is greater then the confidence interval value of 3.70, it its indicates that there is significance difference between experimental group II and control group on passing.

The mean difference value between, experimental group III (jump rope training group) and control group is 8.80 on passing, it is greater then the confidence interval value of 3.70, it its indicates that there is significance difference between experimental group III and control group on passing.

The pre, post and adjusted post-test mean value of experimental group I (plyometric training), experimental group II (staircase training group), experimental group III (jump rope training group) and control group on passing were graphically represented in figure - 3

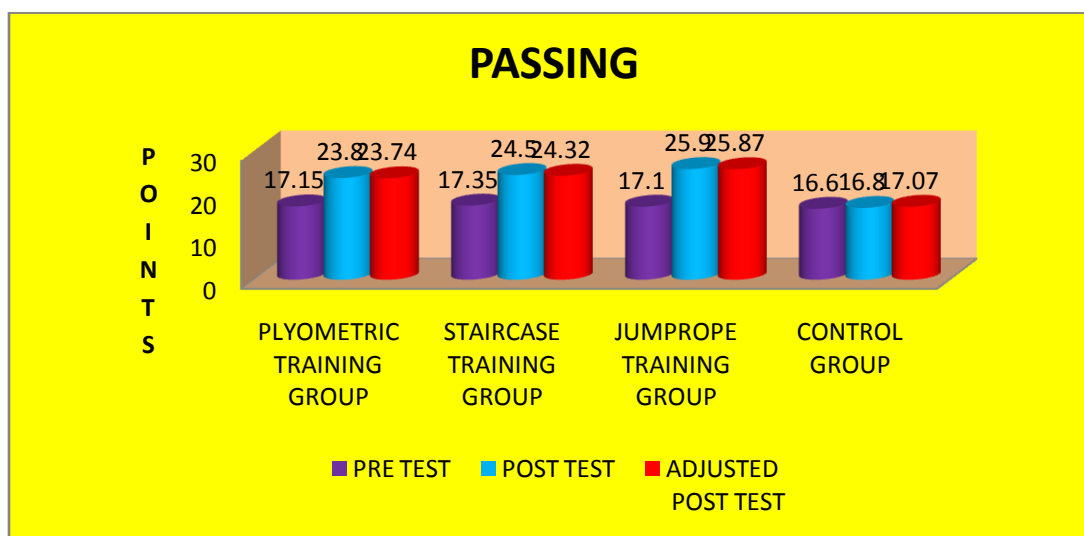


Figure - 3

Mean Values on Passing of Plyometric Training Group Staircase Training Group Jump Rope Training Group and Control Group

DISCUSSION ON FINDINGS

The results of this study revealed that the experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) were better than the control group on shooting, dribbling and passing and also the experimental group I (Plyometric training group) were better than the experimental group II (staircase training group) and experimental group III (jump rope training group) on shooting and experimental group III (jump rope training group) is better than the experimental group II (staircase training group) on shooting.

The results of this study revealed that the experimental group I (Plyometric training group) were better than the experimental group II (staircase training group) and experimental group III (jump rope training group) on dribbling and the experimental group II (staircase training group) were better than the experimental group III (jump rope training group) on dribbling.

The results of this study revealed that the experimental group III (jump rope training group) were better than the experimental group I (Plyometric training group) and experimental group II (staircase training group) on passing and the experimental group II (staircase training group) were better than the experimental group I (Plyometric training group) on passing.

CONCLUSIONS

The following conclusion were drawn from the results of the study.

1. It was conclude that experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) were significantly improved on than the control group on shooting.
2. It was conclude that experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) were significantly improved on than the control group on dribbling.
3. It was conclude that experimental group I (Plyometric training group), experimental group II (staircase training group), experimental group III (jump rope training group) were significantly improved on than the control group on passing.
4. It was conclude that the experimental group I (Plyometric training group) was better than the experimental group II (staircase training group) and the experimental group III (jump rope training group) on shooting.
5. It was conclude that the experimental group III (jump rope training group) was better than the experimental group II (staircase training group) on shooting.
6. It was concluding that the experimental group I (Plyometric training group) were better then the experimental group II (staircase training group) and experimental group III (jump rope training group) on dribbling.
7. It was concluding that the experimental group II (staircase training group) were better then the experimental group III (jump rope training group) on dribbling.
8. It was concluding that the experimental group III (jump rope training group) were better then the experimental group I (Plyometric training group) and experimental group II (staircase training group) on passing.

9. It was conclude that the experimental group II (staircase training group) were better then the experimental group I (Plyometric training group) on passing.

REFERENCE

Effect of eight weeks of upper-body plyometric training during the competitive season on professional female volleyball players. J Sports Med Phys Fitness. . Valades D1, Palao JM2, Femia P3, Ureña A4. 2017 Jul 25.. 2017 Jul 25., pubmed.com, pp. doi: 10.23736/S0022-4707.17.07527-2. .

Effects of plyometric training and recovery on vertical jump performance and anaerobic power. J Strength Cond Res. Luebbbers PE1, Potteiger JA, Hulver MW, Thyfault JP, Carper MJ, Lockwood RH. 2003 Nov; . 2003 Nov; , pubmed.com, pp. 17(4):704-9.

Electromyographic activities of the abdominal muscles during 30% and 75% of maximum expiratory pressure. Ishida H1, Fujisawa M2, Yokoyama R3, Suehiro T4, Watanabe S4. 2017 Oct; Epub 2016 Dec22. s.l. : pubmed.com, 2017 Oct; Epub 2016 Dec22, J Bodyw Mov Ther., pp. 21(4):794-797. doi: 10.1016/j.jbmt.2016.12.004.

The Effects of Jump-Rope Training on Shoulder Isokinetic Strength in Adolescent Volleyball Players. Irem Duzgun, Gul Baltaci , Filiz Colakoglu, Volga Bayrakci Tunay, and Derya Ozer. May 2010. May 2010, human kinetics, pp. Volume 19 Issue 2, 2 Pages: 184-199.

Effects of 2000 Kcal per week of walking and stair climbing on physical fitness and risk factors for coronary heart disease. Leon AS, Casal D, Jacobs D.Jr. 1996 May-Jun. 1996 May-Jun, J Cardiopulm Rehabil., pp. 16(3):183-92. freeman, william. 2011. strength and conditioning. s.l. : john cissik, 2011.

The effects of 6 week Plyometric training program on ability. Michael G. Miller, Jeremy J. Hermiman, Mark D. Richad, Christopher C. Cheatham, and Timothy J.Michael. 2006 Sep;. 2006 Sep;, J Sports Sci Med., pp. 5(3): 459–465.

WEBSITES VISITED

www.en.wikipedia.org, www.google.com, www.pubmed.com



YOGA FOR HOLISTIC HEALTH (EFFECT OF SIMPLIFIED KUNDALINI YOGA WITH AND WITHOUT DIET MODIFICATION ON SELECTED PHYSIOLOGICAL VARIABLES AMONG ADOLESCENT GIRLS)

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ABSTRACT

Yoga practice was associated with attenuated weight gain, most strongly among individuals who were overweight. There was significant difference between SKY practices with diet modification Exp. Gr. I and SKY practices without diet modification Exp. Gr. II. The ordered adjusted Means on BMI were presented through Bar diagram for better understanding of the result of this study. The ordered adjusted means on Pulse Rate were presented through bar diagram for better understanding of the result of this study. Hence systematic SKY practices with suitable diet reduced BMI and Pulse Rate. Adolescence is a transitional stage from childhood to adulthood. It is a transitional stage of physical & psychological development that generally occurs during the period from puberty to legal adulthood. Puberty typically begins during preadolescence, particularly in female. Our study shows that yoga training for 6 months improved lung function strength of inspiratory and expiratory muscles as well as selected muscle strength and endurance. Multiple regression analyses were used to examine covariate-adjusted associations between Yoga practice and weight change from age 45 to recruitment and polychotomous logistic regression was used to examine associations of Yoga practice with the relative odds of weight maintenance (within 5%) and weight loss (>5%) compared to weight gain. Although casual inference from this observational study is not possible, results are consistent with the hypothesis that regular Yoga practice can benefit individuals who wish to maintain or lose weight.

KEYWORDS: Psychological, Preadolescence, Adulthood, Respiratory

INTRODUCTION

Adolescence is a transitional stage from childhood to adulthood. It is a transitional stage of physical & psychological development that generally occurs during the period from puberty to legal adulthood. Puberty typically begins during preadolescence, particularly in female. The sudden and rapid physical changes that adolescent girls typically lend this period of development to be one of self consciousness, sensitivity and concern over one's own body changes, comparison between oneself and peers. In present scenario due to poor dieting habits and life style among young generation, 30 to 40% girls suffer with irregular menstruation. Irregular menstruation lead to so many health risks such as overweight, Blood Pressure, type II diabetics.

PURPOSE OF STUDY

- The purpose of study was to find out the effect of Simplified Kundalini Yoga (SKY) advocated by Vethathiri Maharishi, on selected physiological variables Body Mass Index (BMI) and pulse rate among adolescent girls.

HYPOTHESIS

- It was hypothesized that there would be significant difference due to the SKY practices on selected physiological variables such as BMI and pulse rate among adolescent girls.

REVIEW OF LITERATURE:

Madan Mohan et al.(2003) conducted a study on Effect of yoga training on hand grip on respiratory pressures and pulmonary function i.e. maximum expiratory pressure (MEP), maximum inspiratory pressure (MIP) forced expiratory volume (FEV) forced expiratory volume in first second (FEVI) and peak expiratory flow rate (PEFR). 20 school children in the age group of 12 to 15 years were given yoga training (asanas and pranayama) for 6 months. 20 age and gender matched students formed the control group. Yoga training produced statistically significant ($p < 0.05$) increase in HGS and HGE, MEP, MIP, FEV, FEVI AND PEFR, also increased significantly ($p < 0.001$) after the yoga training. In contrast, the increase in these parameters in the control group was statistically insignificant. Our study shows that yoga training for 6 months improved lung function strength of inspiratory and expiratory muscles as well as selected muscle strength and endurance. It is suggested that yoga be introduced at school level in order to improve physiological functions of overall health and performance of students.

Amit Kauts, Neelam Sharma (2009) studied the effect of yoga on 800 students of class 9. The participants were 400 boys and 400 girls with ages ranging from 14 to 15 years. A yoga module was shared daily for an hour in the morning with an experimental group for 7 weeks. Bight battery of stress scale was administered to identify two stress levels of the students, i.e., high stress and low stress. On the basis of the stress scores, the performance was comparable in high stress and low stress groups, but having values very close to significant values. So it was suggested that yoga module should become a regular feature in the schools.

Krista (2005) examined when this Yoga practice is associated with lower mean 10-year weight gain after age 45. Participants included 15,550 adults, aged 53 to 57 years. Recruited to the Vitamin and Lifestyle (VITAL) cohort study between 2000 and 2002. Physical activity (including Yoga) during the past 10 years, diet, height, and weight at recruitment and at ages 30 and 45. All measures were based on self-reporting, and past weight at was retrospectively ascertained. Multiple regression analyses were used to examined covariate-adjusted associations

between Yoga practice and weight change from age 45 to recruitment and polychotomous logistic regression was used to examine associations of Yoga practice with the relative odds of weight maintenance (within 5%) and weight loss (>5%) compared to weight gain. Yoga practice for four or more years was associated with a 3.1-IB lower weight gain among normal weight (BMI<25) participants (9.5lbs versus 12.6lbs) and an 18.5lb lower weight gain among over weight participants (-5 lbs versus 13.5lbs) (both P for trend <.001). Among over weight individuals 4 + years of Yoga practice was associated with a relative odds of 1.85(95% confidence interval (CI) 0.63 – 5.42) for weight maintenance (within 5%) and 3.88(95% CI 1.30-9.88) for weight loss (>5%) compared to weight gain (P for trend .026 and .003, respectively). Regular Yoga practice was associated with attenuated weight gain, most strongly among individuals who were overweight. Although casual inference from this observational study is not possible, results are consistent with the hypothesis that regular Yoga practice can benefit individuals who wish to maintain or lose weight.

METHODOLOGY:

45 adolescent girls were selected randomly from Chennai between the age group 12 & 15 years. They were divided into 3 groups viz., Exp. Gr. I (Exp. Gr.I), Experimental Group II (Exp. Gr.II) and Control Group (CG) having 15 subjects in each group.

Preliminary test was taken for the above three groups on selected dependent variables before the start of the training program. The training program of SKY with diet modification for Exp. Gr. I, SKY without diet modification for Exp. Gr.II was given for 12 weeks on all 5 days of the week except Sundays. The duration time for the first 4 weeks for Exp. Gr.I and II was 45 minutes, duly increasing the practice time from 45 minutes to 60 minutes during 5th week to 8th week and from 60 minutes to 75 minutes from 9th week to 12th week. These SKY practices included Simplified Physical Exercises, Kaya Kalpa yoga, Introspection and Meditation. Control Group was permitted to undergo their normal lifestyle during the course of experiment and they did not receive any specific yoga training program.

After the experimental period of 12 weeks, the 3 groups were retested again on the same selected dependent variable.

The selected physiological variable BMI and Pulse Rate were measured.

Analysis of covariance (ANCOVA) was used to find out the significant difference between Exp. Gr. I, II and Control Group. The test of significance was fixed at 0.05 level of confidence.

Diet Chart

Grains	– 30%
Dairy products	- 20%
Vegetables and fruits	- 27%
Nuts	- 5%
Pulse, oil, fat	- 18%

If calories

Per day 2500 calories

Carbohydrates - 1500

Fat - 750

Protein - 250

Food intake

Breakfast : Idly, or Pongal, vadai or bonda, sambar, chatni, milk, apple.

Snacks : Dry fruits or fresh fruits or juice.

Lunch : Rice, sambar, vegetables, fruits, curd or butter milk.

Snacks : Nuts, fruits, sprouted grains.

Dinner : Rice or Chappati, Dhall, Veg. Salad, Fruits and Milk.

DATA ANALYSIS

The data pertaining to the variables collected from two groups before and after the training period were statistically analyzed by using Analysis of Co-Variance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance. Paired mean was analyzed by Scheffe's Post hoc test.

RESULT AND DISCUSSION

- The data pertaining to the variables collected from two groups before and after the training period were statistically analyzed by using Analysis of Co-Variance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance and presented in Table- I for BMI.

TABLE – 1
COMPUTATION OF ANALYSIS OF COVARIANCE OF THE TWO EXPERIMENTAL
GROUPS AND CONTROL GROUP ON BODY MASS INDEX
(Scores in ht/wt²)

Test	Exp. Gr. I	Exp. Gr. II	Cont. Group	Source of variance	Sum of squares	DF	Mean Squares	Obtained F value
Pre	24.14	24.65	23.96	between	3.80	2	1.90	0.62
				within	129.03	42	3.07	
Post	20.00	20.35	24.63	between	198.63	2	99.31	18.81*
				within	221.80	42	5.28	
Adjusted Post	20.00	20.37	24.62	between	195.05	2	97.52	18.04*
				within	221.65	41	5.41	
Mean Diff.	4.13	4.29	0.67					

*Significant at 0.05 level of confidence. * F (0,05) (df = 3.22 and 3.23) = 3.23

The obtained F ratio on pre test scores 0.62 was lesser than the required F value 3.22 to be significant at 0.05 level. This proved that there was no significant difference among the groups in pre test and the randomization at the pre test was equal. The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 18.81 was greater than the required table value 3.22. This proved that the difference between the post test mean of the subject were significant. Taking into consideration, the pre test and post test scores among the groups, adjusted mean scores calculated. The obtained F value was 18.04 which was greater than the required F value 3.23. This proved that there was significant difference among the Mean due to 12 weeks of Simplified Kundalini Yoga with and without diet modification on physiological variable BMI. Since significant improvements were recorded, the results were subjected to Post-hoc analysis using Schaffer's Confidence Interval Test. The result were presented in Table - II.

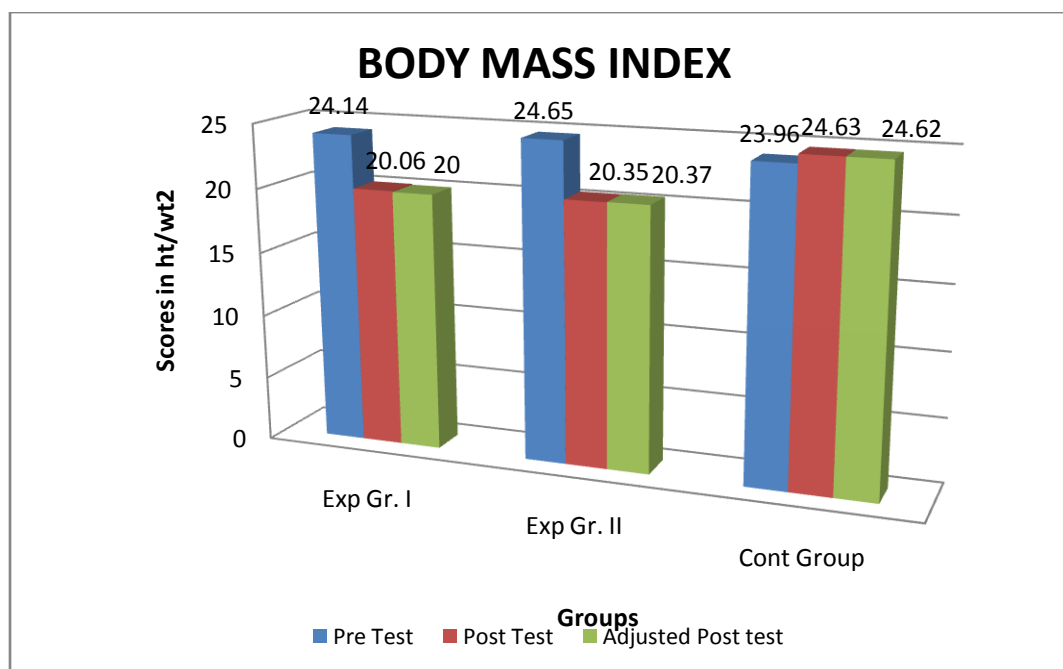
TABLE 2
SCHEFFE'S POST-HOC TEST FOR BODY MASS INDEX
(Scores in ht/wt²)

Exp. Gr. I	Exp. Gr. II	Control Group	Mean Difference	C.I
20.00	20.37	-	0.36*	0.28
20.00	-	24.62	4.61*	0.28
-	20.37	24.62	4.25*	0.28

*Significant at 0.05 level of confidence

The multiple Mean comparisons shown in Table II proved that there was significant difference between adjusted Means of SKY practices with diet modification, SKY practices without diet modification and Control Group. There was significant difference between SKY practices with diet modification Exp. Gr. I and SKY practices without diet modification Exp. Gr. II. The ordered adjusted Means on BMI were presented through Bar diagram for better understanding of the result of this study.

Bar Diagram Showing the Mean Difference among Experimental Group I, Experimental Group II and Control Group of Body Mass Index (SCORES IN HT/WT²)



The data pertaining to the variables collected from two groups before and after the training period were statistically analyzed by using Analysis of Co-Variance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance and presented in Table-3 for Pulse rate.

TABLE 3
COMPUTATION OF ANALYSIS OF COVARIANCE OF THE TWO EXPERIMENTAL
GROUPS AND CONTROL GROUP ON PULSE RATE
(Scores in beats/min)

Test	Exp. Gr. I	Exp. Gr. II	Cont. Group	Source of Variance	Sum of Squares	DF	Mean Squares	Obtained F value
Pre	83.33	82.27	81.60	between	22.93	2	11.46	0.39
				within	1241.87	42	29.57	
Post	72.26	74.20	82.53	between	892.93	2	446.47	107.11*
				within	175.07	42	4.17	
Adjusted Post	72.21	74.21	82.58	between	894.72	2	447.36	107.33*
				within	170.88	41	4.17	
Mean Diff.	11.06	8.07	0.93					

*Significant at 0.05 level of confidence. * F (0,05) (df = 3.22 and 3.23) = 3.23

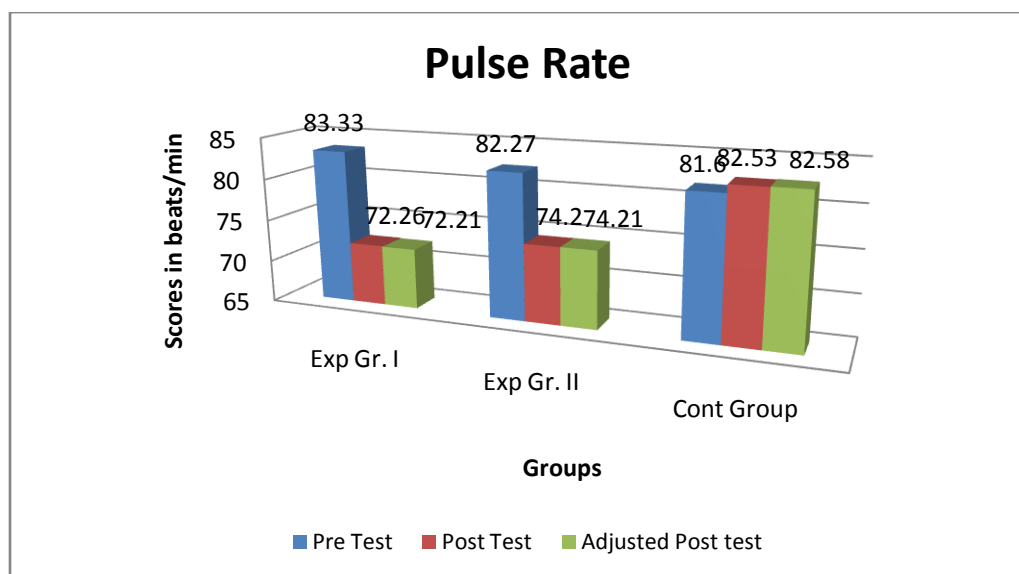
The obtained F ratio on pre test scores 0.39 was lesser than the required F value of 3.22 to be significant at 0.05 level. This proved that there was no significant difference between the groups in pre test and the randomization at the pre test was equal. The post test scores analysis proved that there was significant difference between the groups, as obtained F value 107.11 was greater than the required F value of 3.22. This proved that the differences between the post test means of the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores calculated. The obtained F value was 107.33, which was greater than required F value of 3.23. This proved that there was significant difference among the means due to twelve weeks of SKY practices with diet modification and SKY practices without diet modification on physiological variables Pulse Rate . Since significant improvements were recorded, the results were subjected to post hoc analysis using Schaffer's Confidence Interval test. The results were presented in Table IV.

TABLE 4
SCHEFFE'S POST-HOC TEST FOR PULSE RATE
(Scores in beats / min.)

Exp. Gr. I	Exp. Gr. II	Control Group	Mean Difference	C.I
72.21	74.21	-	2.00*	1.86
72.21	-	82.58	10.37*	1.86
-	74.21	82.58	8.37*	1.86

*Significant at 0.05 level of confidence

The multiple mean comparison shown in Table 4 proved that there existed significant differences between the adjusted means of SKY Practices with diet modifications, Exp. Gr. I and SKY Practices without diet modification, Exp. Gr. II and Control group. There was significant difference between SKY practices with diet modification Group and SKY Practices without diet modification Group. The ordered adjusted means on Pulse Rate were presented through bar diagram for better understanding of the result of this study. Hence systematic SKY practices with suitable diet reduced BMI and Pulse Rate.



Bar Diagram Showing the mean difference among Experimental Group I, Experimental group II and Control Group of Pulse Rate (SCORES IN BEATS/MIN)

CONCLUSION

It was concluded that BMI and Pulse Rate were significantly reduced due to the influence of SKY with diet modification among adolescent girls.

REFERENCE

- Vethathiri Maharishi (2006), "Simplified physical exercise" Vethathiri Publications, India
- Vethathiri Maharishi (2012) "Kaya Kalpam" WCSC, Vethathiri Publications, India
- Vethathiri Maharishi (1983) "Manavalakalai, WCSC, Vethathiri Pathipakam, India

WEBSITE

- www.breathing.com
- www.Pubmed.com
- www.vethathiri.edu.in
- www.stanfordchildrens.org
- www.momjunction.com



THE EFFECTS OF TAPERING ON VO_2 MAX AMONG INTERCOLLEGIATE CRICKET PLAYERS IN PONDICHERRY UNIVERSITY

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ABSTRACT

The purpose of this study was to analyze the effects of tapering on vO_2 max among intercollegiate cricket players in pondicherry university. Thirty intercollegiate cricket players were chosen at randomly from Pondicherry University. They were at the age group of 18 to 25 years. The variable chosen for this study was vO_2 max. All the selected subjects were randomly divided into two groups of fifteen each ($n = 15$). Initially (pre-test) cooper test was conducted for both groups and score was recorded. All the subjects were underwent specific training for eight weeks. After completion of eight weeks training, the cooper test (mid-test) was conducted for groups and score was recorded. Experimental group 1 given linear tapering for 12 days and experimental group 2 was not given any training (detraining). After 12 days, the final test cooper test (post-test) was conducted for experimental group 1 and experimental group 2. The collected data were analyzed through paired T-test to find out the differences among the groups. During the day before competition, vigorous training leads to muscle pain and tired or fatigue. Detraining is also leads to poor performance as it involves loss of fitness gains. Further, it will take more time to regain the earlier fitness level. Therefore this study will provide insight into tapering and its benefits for athletes to maintain their performance and also useful for physical educationist, sports professionals, coaches and trainers. further research can be designed to explore the influence of training programmes based on gender, age and other fitness variables (like speed, endurance, etc.) and using different types of taper.

KEYWORDS: Tapering, VO_2 max, Detraining, cooper test.

INTRODUCTION

VO₂ max is the maximum rate of oxygen conception reflects the cardio respiratory fitness of an individual and is an important determinant of their endurance capacity during prolonged exercise. VO₂ max is one of the most vital physiological factors for developing performance. Cricket players need a more amount of VO₂ max to achieve better as this game (i.e. while bowling, running, fielding, etc.) (Campbell, 2013).

To accomplish more high-level performance in sports and games, physical and physiological fitness preparing is a demonstrated essential. Be that as it may, twelve days before a competition, training is usually stopped in order to recover from training stress and keep away from fatigue. This technique is called detraining. For this situation, the time that is allowed for detraining ought to be considered. This is because when the deconditioning period is unduly drawn out, the recovering of performance may be significantly compromised.

To overcome the difficulties in detraining, tapering procedures are being followed. According to Bosquet et al. (2007), tapering is the decrease in the training load of athletes in the last few days before a major competition to optimize performance. The point of decreasing is to lighten the negative effects caused during a preparatory phase and increase the physiological ability. Modifying the training load and duration of tapering will help build up the adaptation gained during training (Mujika et al., 2004).

PURPOSE OF THE STUDY

The purpose of the study was to find out the effects of tapering on VO₂ max among intercollegiate cricket players in pondicherry university.

SUBJECTS AND METHODOLOGY

For the purpose of this study, thirty (30) intercollegiate cricket players were chosen *at* randomly from Pondicherry University. They were at the age group of 18 to 25 years. VO₂ max was selected as the study variable. Certain elements like way of life, day by day schedule, and eating regimen were not considered in this study. Climatic conditions were not taken.

All the selected subjects were randomly divided into two groups of fifteen each (n = 15). Initially (pre-test) cooper test was conducted for both groups and score was recorded. All the subjects were underwent specific training for eight weeks. After completion of eight weeks training, the cooper test (mid-test) was conducted for groups and score was recorded. Experimental group 1 given linear tapering for 12 days and experimental group 2 was not given any training (detraining). After 12 days, the final test cooper test (post-test) was conducted for experimental group 1 and experimental group 2.

RESULTS

TABLE 1
PAIRED T-TEST FOR THE TAPERING GROUP (EXPERIMENTAL GROUP 1) ON
VO₂ MAX

TEST	Mean \pm S.D	Mean	t	Significant (2-tailed)
Pre-test	48.7 \pm 2.19 ^b	2.48889	-17.679	P>0.05 (0.00)
Mid-test	51.2 \pm 2.25 ^a			

Mid-test	51.2 ± 2.25^a	.17778	1.480	P<0.05 (0.146)
Post-test	51.0 ± 2.20^a			

The analysis of pre test and mid test mean value for the tapering group was found (2.888) respectively. The obtained T value on the pre test and mid test score which (-17.679) was higher than the table value it was find that there was significant difference in the pre test and mid test it was proved mid test score was is increased after completion of specific training.

The analysis of mid test and post test mean value for the tapering group (experimental group 1) was found (.1777) respectively. The obtained t value on the mid test and post test score which (1.480) was not more than table value but approximately equal the table value. It was find out that there is no significance difference in the mid test and post test. It was proved tapering group is maintain the performance level after completion of tapering training.

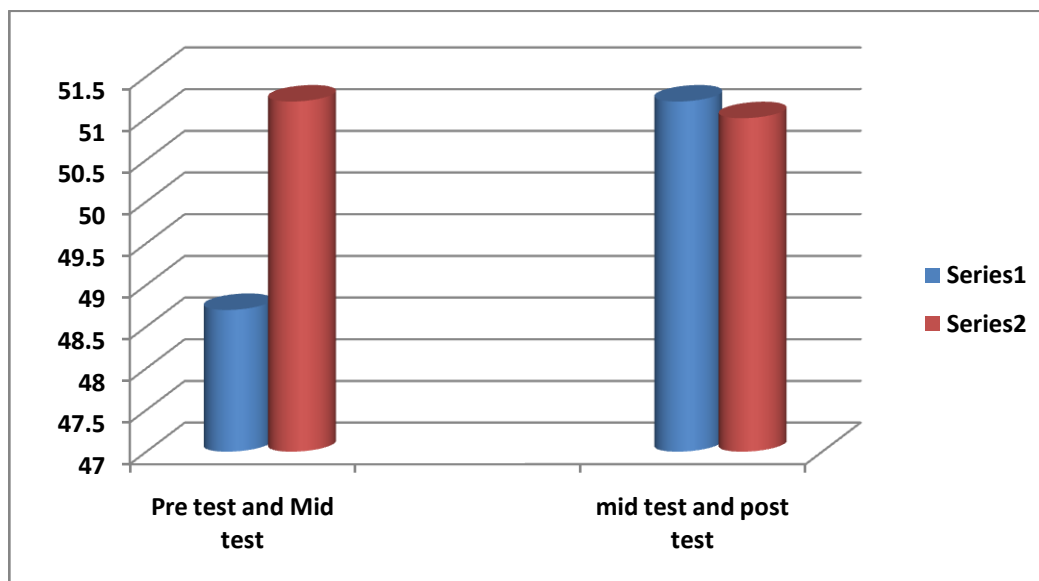


Figure1

The Tapering Group (Experimental Group 1) On VO₂ Max

TABLE 2
PAIRED T-TEST FOR THE DE-TRAINING GROUP (EXPERIMENTAL GROUP 2)
ON VO₂ MAX

TEST	Mean \pm S.D	Mean	T	Significant(2-tailed)
Pre-test	48.9 ± 2.37^b	1.77778	-11.445	P>0.05 (0.00)
Mid-test	50.7 ± 2.08^a			
Mid-test	50.7 ± 2.08^a	-2.02222	9.539	P>0.05 (0.00)
Post-test	48.6 ± 2.53^b			

The analysis of pre test and mid test mean value for the detraining group (experimental group 2) was found (1.777) respectively. The obtained T value on the pre test and mid test score which (-11.445) was higher than the table value it was find out that there was significant difference in the pre test and mid test. It was proved mid test score is increased after completion of specific training.

The analysis of mid test and post test mean value for the tapering group (experimental group 2) was found (-11.445) respectively. The obtained t value on the mid test and post test score which (9.531) was lesser than the table value. It was fine out that there was significance difference in the mid test and post test. It was proved detraining group is decrease the performance level after completion of detraining.

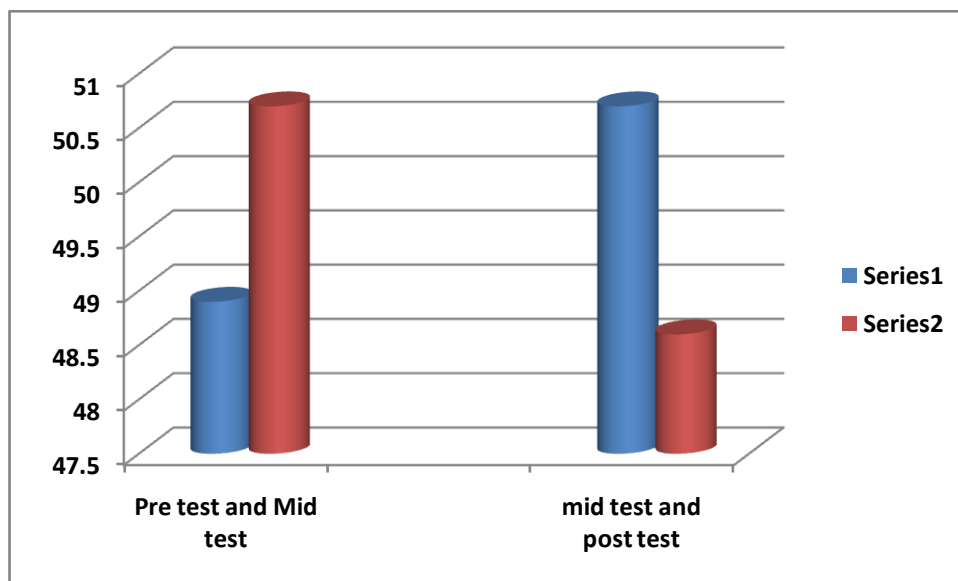


Figure 2

The De-Training group (Experimental Group 2) on VO₂ Max

DISCUSSION

In this study, VO₂ max is increased after completion of cricket specific training for all subjects. The result of post test shows that VO₂ max is maintained among the layers who have undergone tapering process and VO₂ max is decreased those who have undergone in detrained process. This issue was the same as results proved by zarkadas of noofer et al.(1995) and homard et al.(1991).

The attribution of reverse effect is reduced in detrained group. The continuous process involved in tapering group helps to maintain the improvements which are gained. During the day before competition, vigorous training leads to muscle pain and tired or fatigue. Detraining is also leads to poor performance as it involves loss of fitness gains. Further, it will take more time to regain the earlier fitness level.

CONCLUSION

In summary, the present study on the effects of tapering on VO₂ max among intercollegiate cricket players in pondicherry university revealed that the tapering group maintained the performance when compared with the detraining group. The detraining group showed a significant decrease in the performance of the selected variable VO₂ max. These results show

that tapering defeat the negative aspect of both overtraining (because tapering provides adequate recovery from training stress & fatigue) and detraining (in that tapering maintains training-induced physiological adaptations) and helps in achieving optimal performance. Therefore this study will provide insight into tapering and its benefits for athletes to maintain their performance and also useful for physical educationist, sports professionals, coaches and trainers. further research can be designed to explore the influence of training programmes based on gender, age and other fitness variables (like speed, endurance, etc.) and using different types of taper.

REFERENCE

Ashtyani, A., Mohamadi, M., Rahimi, A., & Saravini, R. A. (2006). comparative study on the effects of four tapering techniques on hematological responses in semi-Professional Athletes. *Journal of Medical Science*, 6(4), 641-645.

Campbell, J. (6 November 2013). Endurance conditioning for fast bowlers. *Jock Athletic Magazine* (<http://jackathletic.com/magazine/endurance-for-fast-bowlers>).

Houmard, J. A. (1991). Impact of reduced training on performance in endurance athletes. *Sports Medicine*, 12(6), 380-393.

Hovanlo, F., Khosrow, E., & Alizadeh, R. (2012). The effects of two tapering methods on physical and physiological factors in amateur soccer players. *World Journal of Sport Sciences*, 6(2), 194-199.

Mujika, I., Padilla, S., Pyne, D., & Busso, T. (2004). Physiological changes associated with the pre event taper in athletes. *Sports Medicine*, 34(13), 891-927.

Neufer, P. D. (1989). The effect of detraining and reduced training on the physiological adaptations to aerobic exercise training. *Sports Medicine*, 8(5), 302-320.

Shepley, B., MacDougall, J. D., Cipriano, N., Sutton, J. R., Tarnopolsky, M. A., & Coates, G. (1992). Physiological effects of tapering in highly trained athletes. *Journal of Applied Physiology*, 72(2), 706-711.

Zarkadas, P. C., Carter, J. B., & Banister, E. W. (1995). Modelling the effect of taper on performance, maximal oxygen uptake, and the anaerobic threshold in endurance triathletes. In *Modeling and Control of Ventilation* (pp. 179-186). Springer, Boston, MA.



EFFECT OF INDIVIDUAL AND COMBINED TRAINING OF KALARIPAYATTU AND KARATE ON FLEXIBILITY AND CARDIO VASCULAR ENDURANCE AMONG POLYTECHNIC COLLEGE STUDENTS

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ABSTRACT

The purpose of the study was to find out the effect of individual and combined training of kalaripayattu and karate on flexibility and cardio vascular endurance among polytechnic college students. To achieve the purpose of this study, one twenty polytechnic college student was selected from Govt. polytechnic college, Coimbatore District, Tamilnadu. The subject's age ranged from 15 to 20 years and they were divided into four equal groups namely kalaripayattu training group, karate training group, combined training group and control group. The investigator selected flexibility and cardio vascular endurance dependent variable kalaripayattu training group, karate training group, and combined training group underwent respective training for the period of twelve weeks. Control group was not participating in any type of training. The data were collected before and after the training program and statistically analyzed by using analysis of co-variance (ANCOVA). The result of the study reveals that kalaripayattu training group, karate training group, and combined training group were significantly improved on flexibility and cardio vascular endurance variable than the control group, karate training group was better than the kalaripayattu training group and also combined training group is better than the kalaripayattu training group on flexibility and cardio vascular endurance

KEYWORDS: Kalaripayattu, Karate And Flexibility And Cardio Vascular Endurance

INTRODUCTION

Regular physical activity has an effect on biological responses in both muscles and organs. Therefore the study aiming at analyse the effect of coordinated and well structured physical activity (Karate and Kalaripayattu) on flexibility and cardiovascular endurance. kalaripayattu is the ancient martial art, which has immense benefits spread across various levels.

Karate is the modern martial art. Health related physical fitness plays a key role in karate training. Flexibility and aerobic capacity are the key element to sustain the other health related and motor fitness for the better living and involve in the sports activity. It also have the tram end us effects on self confidence and healthy life style.

METHODOLOGY

The purpose one hundred and twenty (120) male subjects were selected randomly from government polytechnic college Coimbatore and age ranged from 15 to 20 years. The selected students were divided into four groups of equal numbers namely kalripayattu, karate group, combined of karate and kalaripayattu group and control group. The data were collected from all four groups prior and after the experimental training for a period of 12 weeks. The selected variables such as flexibility was tested by sit and reach test and scored in centimeters, cardiovascular endurance was tested by copper 12 minutes run and walk test.

The analysis of covariance (ANCOVA) was used to test the mean difference among the four groups. Then, the obtained 'F' ratio is tested at 0.05 level of significance. If 'F' ratio is significant, further scheffes post hoc test was applied to find the better group.

ANALYSIS OF DATA

The data which were obtained from the subjects were analyzed statistically by the application of analysis covariance (ANCOVA). Then the obtained 'F' ratio was tested at 0.05 Level of significance.

TABLE - 1
ANALYSIS OF COVARIANCE OF KALARIPAYATTU TRAINING GROUP KARATE
TRAINING GROUP COMBINED TRAINING GROUP AND CONTROL GROUP ON
FLEXIBILITY

	Kalarip ayattu Group	Karat e Grou p	Combine d Group	Contr ol Grou p	SO V	S.Sq	df	M.Sq	'F' Ratio
Pre Test Mean	21.53	19.70	18.30	19.43	B	161.55	3	53.85	2.47
S.D	4.31	4.63	4.82	4.74	W	2519.43	116	21.71	
Post Test Mean	42.13	35.83	44.20	19.73	B	11051.62	3	3683.87	90.60
S.D	5.88	3.18	9.86	4.52	W	4716.30	116	40.65	

Adjusted Post Test Mean	40.45	35.87	45.55	20.02	B	10957.64	3	3652.54	167.51
					W	2507.45	115	21.80	

Table value for 3,116 degree of freedom is 2.68

The table I shows that the pre tests mean value of kalaripayattu training group, karate training group, combined training group and control group on flexibility are 21.53, 19.70, 18.30 and 19.43 respectively. The obtained 'F' ratio value of pre test on flexibility is 2.47 which are less than the required table value of 2.68 for significance with df 3 and 116 at 0.05 level of confidence. It is proved that all the four groups were randomly equal.

The post test mean value of kalaripayattu group, karate group, combined training group and control group on flexibility are 42.13, 35.83, 44.20 and 19.73 respectively. The obtained 'F' ratio value of post test on flexibility is 90.60 which are greater than the required table value of 2.68 for significance with df 3 and 116 at 0.05 level of confidence. It is proved that kalaripayattu training group, karate training group and combined training group were significantly improved on flexibility due to the respective training programme.

The adjusted post test mean value of kalaripayattu group, karate group, combined training group and control group on flexibility are 40.45, 35.87, 45.55 and 20.02 respectively. The obtained 'F' ratio value of adjusted post test on flexibility is 167.51 with 0.05 level of confidence. It is proved that kalaripayattu training group, karate training group and combined training group were significantly improved on flexibility due to the respective training programme.

The above statistical analysis indicates that there is a significant difference among the groups on flexibility after the training period. Further, to determine which of the paired means has a significant difference, the Scheffe's post hoc test was applied. The result of the follow-up test is presented in Table 2.

TABLE -2
SCHEFFES POST-HOC TEST FOR PAIRED MEAN DIFFERENCE AMONG THE FOUR GROUPS ON FLEXIBILITY

Mean Value				Mean Difference	C.I
Kalaripayattu Group	Karate Group	Combined Group	Control Group		3.51
40.45	35.87			4.58*	
40.45		45.55		5.1*	
40.45			20.02	20.43*	
	35.87	45.55		9.68*	
	35.87		20.02	15.85*	
		45.55	20.02	25.53*	

The table 2 shows that the mean difference between kalaripayattu training group and karate training group, kalaripayattu training group and combined training group, kalaripayattu training group and control group, karate training group and combined training group, karate training group and control group, combined training group and control group on flexibility are 4.58, 5.1, 20.43, 9.68, 15.85, 25.53 respectively. It is greater than the confidence interval value of 3.51. Hence it was proved that there were significant differences in the effects on leg explosive power.

The mean value of pre test, post test and adjusted post test of kalaripayattu training group karate training group combined training group and control group on flexibility were graphically represented in figure – 1

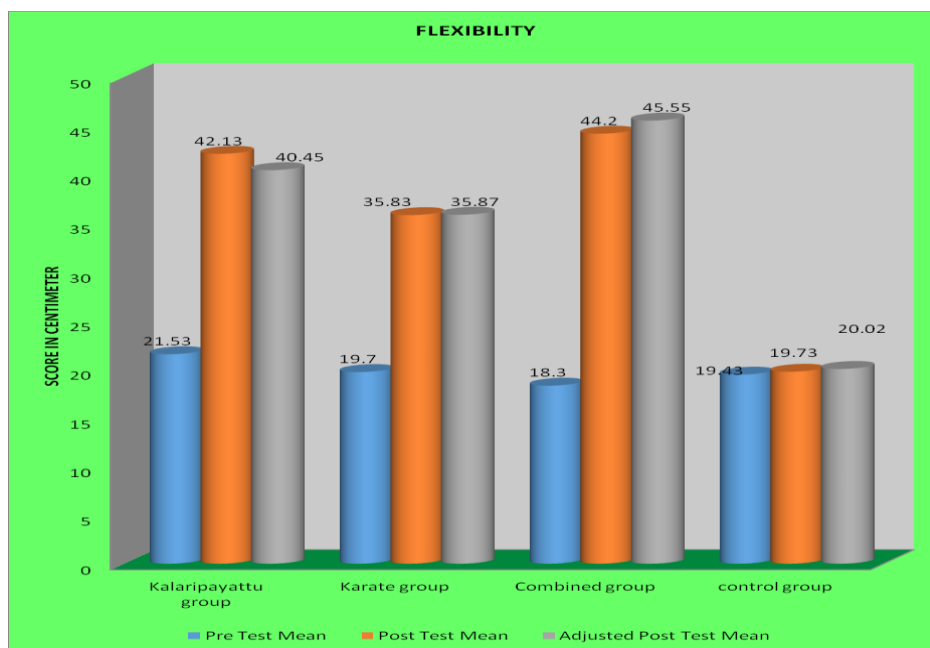


Figure – 1

Bar Diagram Showing the Mean Value of Pre Test, Post Test and Adjusted Post Test of Kalaripayattu Training Group Karate Training Group Combined Training Group and Control Group on Flexibility

TABLE- 3
ANALYSIS OF COVARIANCE OF KALARIPAYATTU TRAINING GROUP KARATE TRAINING GROUP COMBINED TRAINING GROUP AND CONTROL GROUP ON CARDIOVASCULAR ENDURANCE

	Kala ri Grou p	Karat e Grou p	Combin ed Group	Control Group	SO V	S. Sq	df	M. Sq	'F' Ratio
Pre Test Mean	2057	2038.7	2058.5	2089.5	B	39908.60	3	13302.8 6	0.943
S.D	102.1 8	110.11	116.96	142.12	W	1637038. 86	116	14112.4 0	
Post Test Mean	2298. 5	2307.2	2504.2	2107.8	B	2357629. 16	3	785876. 38	57.02
S.D	104.5 4	119.71	91.91	146.33	W	1598530	116	13780.4 3	

Adjusted Post Test Mean	2302	2325	2506	2085	B	2645008.6	3	881669.53	174.29
					W	581727.84	115	5058.50	

Table value for 3,116 degree of freedom is 2.68

The table III shows that the pre tests mean value of kalaripayattu training group, karate training group, combined training group and control group on cardiovascular endurance are 2057, 2038.7, 2058.5 and 2089.5 respectively. The obtained 'F' ratio value of pre test on cardiovascular endurance is 0.943 which are less than the required table value of 2.68 for significance with df 3 and 116 at 0.05 level of confidence. It is proved that all the four groups were randomly equal.

The post test mean value of kalaripayattu group, karate group, combined training group and control group on cardiovascular endurance are 2298.5, 2307.2, 2504.2, and 2107.8 respectively. The obtained 'F' ratio value of post test on cardiovascular endurance is 57.02 which are greater than the required table value of 2.68 for significance with df 3 and 116 at 0.05 level of confidence. It is proved that kalaripayattu training group, karate training group and combined training group were significantly improved on cardiovascular endurance due to the respective training programme.

The adjusted post test mean value of kalaripayattu group, karate group, combined training group and control group on cardiovascular endurance are 2302, 2325, 2506 and 2085 respectively. The obtained 'F' ratio value of adjusted post test on cardiovascular endurance is 174.29 with 0.05 level of confidence. It is proved that kalaripayattu training group, karate training group and combined training group were significantly improved on cardiovascular endurance due to the respective training programme.

The above statistical analysis indicates that there is a significant difference among the groups on cardiovascular endurance after the training period. Further to determine which of the paired means has a significant difference, the Scheffe's post hoc test was applied. The result of the follow-up test is presented in Table- 4

TABLE -4
SCHEFFES POST-HOC TEST FOR PAIRED MEAN DIFFERENCE AMONG THE
FOUR GROUPS ON CARDIOVASCULAR ENDURANCE

Mean Value				Mean Difference	C.I
Kalaripayattu Group	Karate Group	Combined Group	Control Group		
2302	2325			23.0	53.25
2302		2506		204*	
2302			2085	217*	
	2325	2506		181*	
	2325		2085	240*	
		2506	2085	421*	

The table IV shows that the mean difference between kalaripayattu training group and combined training group, karate training group and control group, karate training group and combined training group, karate training group and control group, combined training and control group on

cardiovascular endurance are 204,217,181,240 and 421 respectively. It is greater than the confidence interval value of 53.25. Hence it was proved that there were significant differences in the effects on cardiovascular endurance.

The mean difference between kalaripayattu training group and karate training group on cardiovascular endurance are 23 respectively. It is less than the confidence interval value of 53.25. Hence it's proved that there is insignificant differences in the effects on cardiovascular endurance.

The mean value of pre test, post test and adjusted post test of kalaripayattu training group karate training group combined training group and control group on cardiovascular endurance were graphically represented in figure –2

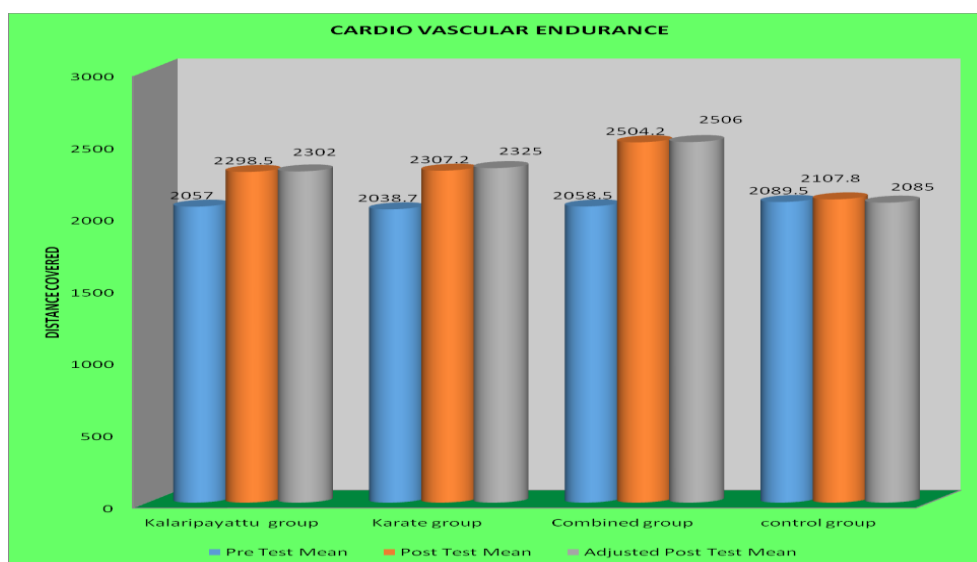


Figure – 2

Bar Diagram Showing the Mean Value of Pre Test, Post Test and Adjusted Post Test of Kalaripayattu Training Group, Karate Training Group, Combined Training Group and Control Group on Cardiovascular Endurance

RESULTS AND DISCUSSION

The results of the study reveals that there is a significant difference between pre test and post test of kalaripayattu training group, karate training group and combined training group on flexibility. There is an insignificant difference between pre test and post test of control group on flexibility.

The results of the study reveals that there is a significant difference between pre test and post test of kalaripayattu training group, karate training group and combined training group on cardiovascular endurance. There is an insignificant difference between pre test and post test of control group on cardiovascular endurance.

It was concluded that the kalaripayattu training group, karate training group, combined training group is better than the control group on flexibility due to the respective training programmes. Hence the karate training group is better than the kalaripayattu training group and combined

training group on flexibility. And also combined training group is better than the kalaripayattu training group and on flexibility.

Regarding statistical analysis, it was observed that there is a significant difference among kalaripayattu training group, karate training group, combined training group and control group on cardiovascular endurance.

CONCLUSION

It was concluded that the kalaripayattu training group, karate training group, combined training group is better than the control group on flexibility due to the respective training programmes. Hence the karate training group is better than the kalaripayattu training group and combined training group on flexibility. And also combined training group is better than the kalaripayattu training group and on flexibility.

It was concluded that, the kalaripayattu training group, karate training group, combined training group is better than the control group on cardiovascular endurance due to the respective training programmes. Hence the combined training group is better than the kalaripayattu training group and karate training group. And also there is an insignificant difference between kalaripayattu training group and karate training group on cardiovascular endurance.

REFERENCES

1. Balakrishnan, P.I. (2003). Kalaripayattu : The Ancient Martial Art Of Kerala. Kozhikode. Poorna publications p.p 35, 40-152.
2. Barry Johnson, L., & Jack Nelson (1982). Practical Measurements For Evaluation In Physical Education . Delhi : Surjeet publication. p-45.
3. Venkatachalam.R (2005), *Kalaripayattu : The divine Martial of God's Own country*.
4. Kesava Chandran, C., Harikumaran Nair, R and Shashidhar, S (2004). Respiratory Function In Kalaridpayattu Practioners. *Indian Journal of Physiological and Pharmacology*. 48 (2) : 235-240.
5. Mori. S. Ohtani Y and Imanaka, K (2002). Reaction times and anticipatory skills of Karate athletes. *Hum Mov Sei*. (2) : 213-30.



EFFECT OF VARIOUS NUTRITIONAL SUPPLEMENTS ON THE SELECTED PHYSICAL VARIABLES OF WOMEN STUDENTS

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ABSTRACT

Understanding the role of nutrients on the physical performance is essential. Undoubtedly sports training always increase the sports performance but acquiring the knowledge about nutritional supplements during training is important for the physical education fraternity. A study was conducted to find out the effect of various nutritional supplements on the selected physical variables of women students. To achieve the purpose of the study 30 women college students from various colleges in Chennai were selected randomly. Selected subjects were divided into three equal groups of ten each. Experimental group I was given 12 weeks of sports drink and experimental group II was given 12 weeks of nutritional bar supplementations and control group was not given any specific nutritional diet. Pretest and posttest was conducted on the selected subjects before and after the experimental period on speed and agility. Collected data was analysed by using statistical procedure ANCOVA to find out the significant difference. The level of confidence was fixed as 0.05. It was concluded that nutritional drink supplementation group showed significant improvement on speed and agility than nutritional bar supplementation group and control group.

KEYWORDS: Nutritional Drink, Nutritional Bar, Speed, Agility

INTRODUCTION

Nutrition is an important part of sport performance for young athletes, in addition to allowing for optimal growth and development. Proper nutrition is vital for child and adolescent athletes to attain proper growth and perform optimally in sports. Young athletes need to learn what foods are good for energy, when to eat certain foods, how to eat during an event, and when and what to eat to replenish after activity

Hydration is imperative for optimal performance for all athletes. Athletes who develop a systematic method of ensuring they are consistently hydrated have better recovery and higher energy levels. When an athlete is adequately hydrated, their body is able to transport nutrients and oxygen to working muscles and aid muscle repair, remove lactic acid build up, eliminate nitrogenous waste and regulate body temperature.

Sports drinks have been researched extensively and generally provide an excellent alternative to plain water for hard working athletes. During intensive aerobic exercise, the body's preferred source of fuel is carbohydrate due to the efficiency of energy transfer to fatigued muscles. The majority of sports drinks are formulated to deliver carbohydrates, electrolytes and fluids in such a way that will minimize stomach upset and maximize intestinal absorption for delivery of energy to muscles.(Laura K Purcell, 2013)

Water and Carbohydrate are the main ingredients found in sports drinks. The source of carbohydrate comes from mixtures of glucose, glucose polymers and fructose. This mixture is typically what varies among brands because different combinations of carbohydrate are used to improve digestion and flavor. Research has shown that a sports drink made up of minimum percentage of carbohydrate is emptied by the stomach most efficiently and absorbed most easily by the small intestine.(Montfort-Steiger V and Williams CA, 2007)

Besides water, electrolytes are the major component of sweat. Sodium and chloride comprise the largest proportion of electrolytes in sweat, along with smaller amounts of potassium, magnesium, calcium, iron, copper and zinc. Sodium stimulates thirst and enhances the absorption of carbohydrate and water by the small intestine. Although higher levels of sodium would result in better fluid retention.

Need of nutritional drinks/bars

Basic nutrition is important for growth, achieving good health and scholastic achievement, and providing energy. Sports nutrition enhances athletic performance by decreasing fatigue and the risk of disease and injury; it also enables athletes to optimize training and recover faster. Balancing energy intake with energy expenditure is crucial to prevent an energy deficit or excess. Energy deficits can cause short stature, delayed puberty, menstrual dysfunction, loss of muscle mass and increased susceptibility for fatigue, injury or illness. Energy excess can result in overweight and obesity.(Froil and K and et.al., 2004)

Before puberty, minimum nutritional and energy requirements (caloric needs) are similar for boys and girls. Energy requirements for adolescents are more variable, depending on age, activity level, growth rate and stage of physical maturity.

Gatorade 350ml contains, Energy 80 kcal, Carbohydrates 21, Sugars 21, , Fat 0, Protein 0, Dietary fiber 0, Potassium 45 mg and Sodium 150 mg. Nutritional peanut bar contains Calories 220.0,

Total Fat 5.0 g, Sodium 125.0 mg, Potassium 160.0 mg, Total Carbohydrate 37.0 g, Dietary Fiber 2.0 g and Sugars 24.0 g

Hypotheses

It was hypothesized that there would be significant difference among control group and experimental group on speed of women students.

It was hypothesized that there would be significant difference among experimental group and control group on agility of women students after 12 weeks of nutritional supplements.

Limitation

1. The influence of certain factors like daily routine, food habits, life style and rest period were not taken into consideration.
2. Hereditary and environmental factors were not taken into consideration.
3. Psychological behavior of the subjects which can influence the study was not considered.

Delimitation

1. 30 women students from various arts and science colleges from Chennai were selected.
2. The age group of the subject was 18-21 years.
3. Physical variables speed and agility were selected for the study.

METHODOLOGY

To achieve the purpose of the study 30 women college students from various colleges in Chennai were selected randomly. Selected subjects were divided into three equal group of ten each. Experimental group I was given nutritional drink Gatorade supplementation. Experimental group II was given nutritional peanut bar for 12 weeks. Control was not given any specific nutritional supplementation during the experimental period. Subjects were undergone their regular sports training during the experimental period. Pretest and post test data were collected on 50M speed and agility before and after the experimental period for the selected subjects. Collected data was analysed by using statistical technique ANCOVA by SPSS 16 to find out the significant difference and the level of significance was fixed as 0.05.

Results and discussion

TABLE 1
SHOWING THE ANALYSIS OF COVARIANCE OF 50M SPEED OF CONTROL GROUP, EXPERIMENTAL GROUP I AND EXPERIMENTAL GROUP II

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Pretest_50MSpeed	83.078	1	83.078	7022.003*	.000
Group	.974	2	.487	41.153*	.000
Error	1.017	86	.012		
Total	85.797	89			

*significant at 0.05 level at 2,86df 3.10

As shown in table I the obtained F-ratio value of 41.153 was higher than the required table value of 3.10 at 2, 86df. Hence, the null hypothesis was rejected and stated hypothesis was accepted. There was a significant difference on speed between experimental groups and control group.

TABLE 2
POST HOC ANALYSIS OF 50M SPEED OF CONTROL GROUP, EXPERIMENTAL GROUP I AND EXPERIMENTAL GROUP II

Group	Adjusted Mean	Drink Group	Bar Group	Control group
Drink Group	9.49	-	.19*	-
Bar Group	9.68	-	-	.05
Control Group	9.73	.24*	-	-

*significant at 0.05 level

As mentioned in table 2 the adjusted posttest mean values showed that there was a significant difference between nutritional drink group (9.49sec) and control group (9.73sec), nutritional bar group(9.68) on speed.

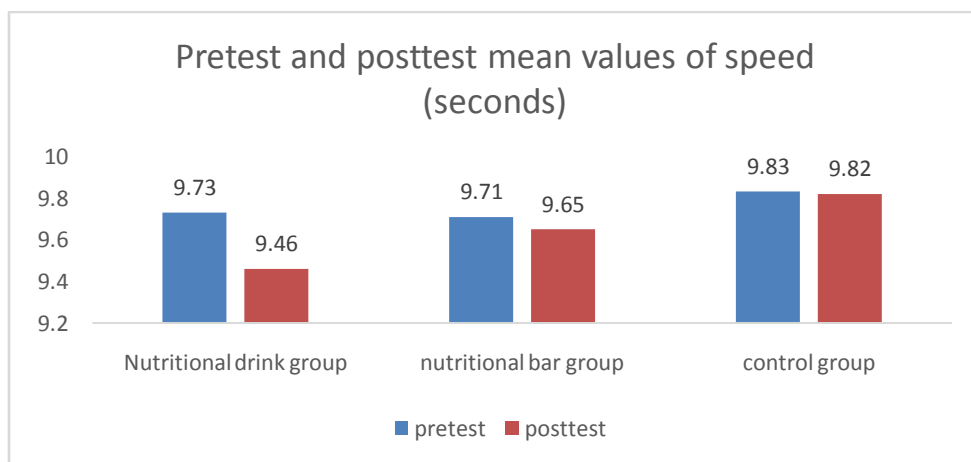


Figure 1

Showing the Mean Values of Speed of Control and Experimental Groups

TABLE 3
SHOWING THE ANALYSIS OF COVARIANCE OF AGILITY OF CONTROL GROUP, EXPERIMENTAL GROUP I AND EXPERIMENTAL GROUP II

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Pre_ Agility	18.773	1	18.773	9870.680*	.000
Group	.169	2	.085	44.491*	.000
Error	.164	86	.002		
Total	19.151	89			

*significant at 0.05 level at 2,86 df 3.10

As given in table 3 the obtained F-ratio value of 44.491 was higher than the required table value of 3.10 at 2, 86df. Hence, the null hypothesis was rejected and stated hypothesis was accepted. There was a significant difference on agility between experimental groups and control group.

TABLE 4
POST HOC ANALYSIS ON ADJUSTED POSTTEST MEANS OF AGILITY OF
CONTROL GROUP, EXPERIMENTAL GROUP I AND EXPERIMENTAL GROUP II

Group	Adjusted Mean	Drink Group	Bar Group	Control group
Drink Group	10.83	-	.08*	-
Bar Group	10.91	-	-	.02
Control Group	10.93	.10*	-	-

*significant at 0.05 level As noted in table 4 the adjusted posttest mean values showed that there was a significant difference between nutritional drink group (10.83sec) and control group (10.93sec), nutritional bar group(10.91sec) on agility.

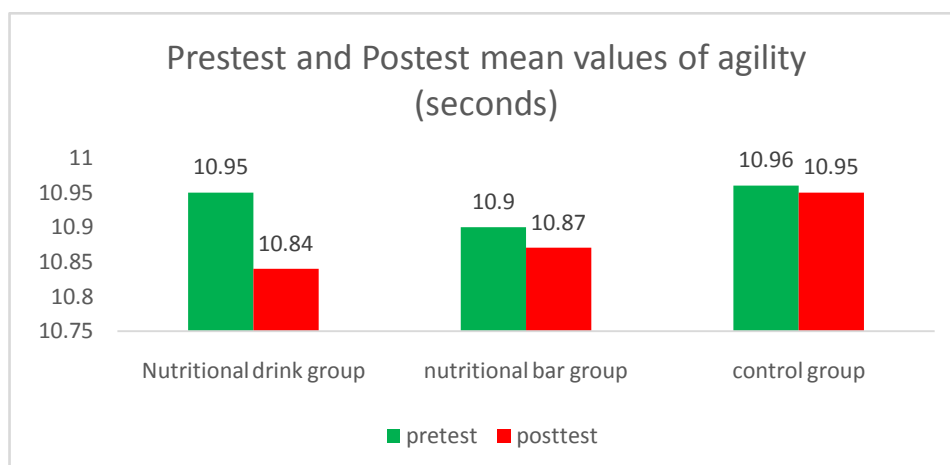


Figure 2

Showing the mean Values of Agility of Control and Experimental Groups

CONCLUSION

1. It was concluded that nutritional drink group had better speed than the women students of control group and nutritional bar group.
2. It was concluded that nutritional drink group had better agility than the women students of control group and nutritional bar group.

REFERENCE

- Laura K Purcell and Canadian Paediatric Society (2013). Sport nutrition for young athletes, Journal of Paediatric and child health, published by frace, April 18(4),pp200–202.
- Montfort-Steiger V and Williams CA (2007). Carbohydrate intake considerations for young athletes, Journal of sports science medicine, September 1;6(3), pp343-352.
- Froiland K and et.al., (2004). Nutritional supplement use among college athletes and their sources of information, International journal of sports nutrition, exercise metabolism, February 14(1) pp104-120.



EFFECT OF NUTRITIONAL DRINK AND NUTRITIONAL BAR SUPPLEMENTATION ON THE MUSCULAR ENDURANCE AND CARDIO RESPIRATORY ENDURANCE OF COLLEGE STUDENTS

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ABSTRACT

The purpose of the study was to find out the effect of nutritional drink and nutritional bar supplementation on the muscular endurance and cardiorespiratory endurance of college students. To achieve the purpose of the study 90 college women students from various Arts and Science College, Chennai were selected randomly. Selected subjects were somewhat taking part in sports activities in their respective colleges. Selected subjects were divided into three equal groups of 30 subjects each namely nutritional drink supplementation group (NDSG), nutritional bar supplementation group (NBSG) and control group (CG). Age group of the subjects ranged from 18-22 years. Supplementation was given to them daily for a period of 12 weeks. Pretest and post test data were collected on the selected subjects before and after the experimental period on muscular endurance and cardio respiratory endurance. Collected data were analysed by using the statistical procedure ANCOVA and the level of significance was fixed as 0.05. It was concluded that nutritional supplement groups showed significant improvement on muscular endurance and cardio respiratory endurance than the control group.

KEYWORDS: Muscular Endurance, Cardio Respiratory Endurance, Nutritional Drink/Bar

INTRODUCTION

A number of factors contribute to success in sport, and nutritional diet is a key component. An athlete's nutritional dietary requirements depend on several aspects, including the sport, the athlete's goals, the environment, and practical issues.

Nutrition is increasingly recognized as a key component of optimal sporting performance, with both the science and practice of sports nutrition developing rapidly. Recent studies have found that a planned scientific nutritional strategy consisting of fluid, carbohydrate, sodium, and caffeine comparatively can help the non-elite runners to perform well. There is sound evidence in the scientific literature to show that some nutritional supplements like nutritional drinks and nutritional bars can indeed assist athletes to achieve peak performance in certain circumstances.

Nutritional supplements are essential for a wide variety of metabolic and physiologic processes in the human body. Some of the physiologic roles of such supplements important to athletes are their involvement in, muscle contraction, normal heart rhythm, nerve impulse conduction, oxygen transport, oxidative phosphorylation, enzyme activation, immune functions, antioxidant activity, bone health, and acid-base balance of the blood. (Campbell C and et.al. 2008)

The purpose of fluid consumption during exercise is primarily to maintain hydration and thermoregulation, thereby benefiting performance. Evidence is emerging on increased risk of oxidative stress with dehydration. Fluid consumption prior to exercise is recommended to ensure that the athlete is well-hydrated prior to commencing exercise. In addition, carefully planned hyperhydration (fluid overloading) prior to an event may reset fluid balance and increase fluid retention, and consequently improve heat tolerance. (Miller SL and et.al. 2007)

There has been a recent resurgence of interest in fat as a fuel, particularly for endurance exercise. A high-carbohydrate strategy inhibits fat utilization during exercise, which may not be beneficial due to the abundance of energy stored in the body as fat. Creating an environment that optimizes fat oxidation potentially occurs when dietary carbohydrate is reduced to a level that promotes ketosis. (Volek JS and et.al. 2015)

Especially carbohydrate and protein, must be met during times of high physical activity to maintain body weight, replenish glycogen stores, and provide adequate protein to build and repair tissue. Fat intake should be sufficient to provide the essential fatty acids and fat-soluble vitamins and to contribute energy for weight maintenance. Adequate fluid should be consumed before, during, and after exercise to help maintain blood glucose concentration during exercise, maximize exercise performance, and improve recovery time. Athletes should be well hydrated before exercise and drink enough fluid during and after exercise to balance fluid losses. Sports beverages containing carbohydrates and electrolytes may be consumed before, during, and after exercise to help maintain blood glucose concentration, provide fuel for muscles, and decrease risk of dehydration. In this study the nutritional drink and nutritional bar with the above mentioned values were used as supplements to find its effects on certain performance related behaviors of women.

HYPOTHESES

It was hypothesized that there would be significant difference between nutritional supplementation groups and control group on muscular endurance.

DELIMITATION

4. 90 women students from various arts and science colleges from Chennai were selected.
5. The age group of the subject was 18-22 years.
6. Variables muscular endurance and cardio respiratory endurance were selected for the study.

LIMITATION

4. Atmospheric conditions, heredity and environment were not taken into consideration.
5. Daily routine of the subjects, previous training experience, life style were not considered.
6. Psychological behavior motivation which can influence the result of the study was not considered.

METHODOLOGY

To achieve the purpose of the study 90 women college students from various Arts and Science Colleges in Chennai were selected randomly. Selected subjects were divided into three equal groups of 30 each. Nutritional drink supplementation group (NDSG) was given nutritional drink Gatorade supplementation, nutritional bar supplementation group (NBSG) was given nutritional peanut bar supplementation daily for 12 weeks. Control group (CG) was not given any specific nutritional supplementation during the experimental period. All the selected subjects undergone their regular sports training during the experimental period. Pretest and post test data were collected on muscular endurance (sit ups) and cardio respiratory endurance (Harvard step test) before and after the experimental period for the selected subjects. Collected data was analysed by using statistical technique ANCOVA by SPSS 16 to find out the significant difference and the level of significance was fixed as 0.05.

RESULTS AND DISCUSSION

TABLE I
ANALYSIS OF COVARIANCE OF NDSG, NBSG AND CG ON MUSCULAR
ENDURANCE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Between	56.183	2	28.092	164.281*	.000
Within	14.676	86	.171		

*significant at 2, 86 df at 0.05 level (3.10)

As represented in table 1 the obtained F-ratio value of 164.281 was higher than the required table value of 3.10 at 0.05 level of significance at 2,86df. Hence, the null hypothesis was rejected. There was a significant difference between control group (CG) and nutritional drink supplementation group (NDSG), nutritional bar supplementation group (NBSG) on muscular endurance.

TABLE 2
POST-HOC ANALYSIS OF POSTTEST ADJUSTED MEAN VALUES OF MUSCULAR
ENDURANCE OF CG, NDSG AND NBSG

Group	Adjusted Mean	Drink Group	Bar Group	Control group
Drink Group	13.55	-	1.57*	-
Bar Group	11.98	-	-	.21
Control Group	11.77	1.78*	-	-

*significant at 0.05level

As noted in table 2 the obtained posttest adjusted mean values of muscular endurance of CG (11.77), NDSG (13.55) and NBSG (11.98) showed significant difference between NDSG and CG, NBSG. Nutritional drink supplementation group (NDSG) showed higher muscular endurance than the other two groups.

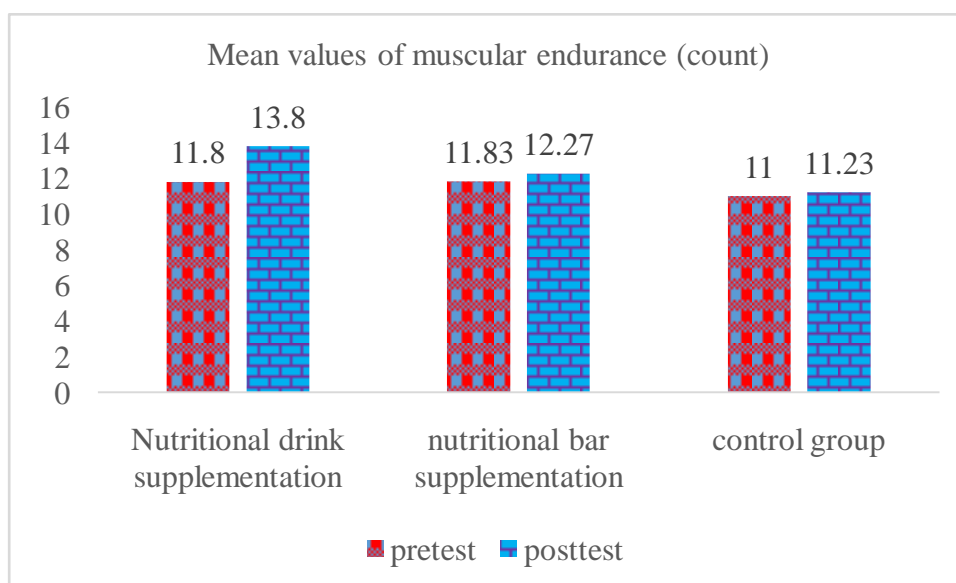


Figure 1

Showing the Pretest and Posttest Mean Values of Muscular Endurance of NdsG, NbsG and Cg

TABLE 3
ANALYSIS OF COVARIANCE OF NDSG, NBSG AND CG ON CARDIO
RESPIRATORY ENDURANCE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Between	44.375	2	22.188	33.670*	.000
Within	56.633	86	.659		

*significant at 2, 86 df at 0.05 level (3.10)

As presented in table 3 the obtained F-ratio value of 33.670 was higher than the required table value of 3.10 at 0.05 level of significance at 2,86df. Hence, the null hypothesis was rejected. There was a significant difference between control group (CG) and nutritional drink supplementation group (NDSG), nutritional bar supplementation group (NBSG) on cardio respiratory endurance.

TABLE 4
POST-HOC ANALYSIS OF POSTTEST ADJUSTED MEAN VALUES OF CARDIO RESPIRATORY ENDURANCE OF CG, NDSG AND NBSG

Group	Adjusted Mean	Drink Group	Bar Group	Control Group
Drink Group	91.38	-	1.25*	-
Bar Group	90.13	-	-	.41
Control Group	89.72	1.66*	-	-

*significant at 0.05level

As mentioned in table 4 the obtained posttest adjusted mean values of cardio respiratory endurance of CG (89.72), NDSG (91.38) and NBSG (90.13) showed significant difference between NDSG and CG, NBSG. Nutritional drink supplementation group (NDSG) showed higher cardio respiratory endurance than the other two groups.

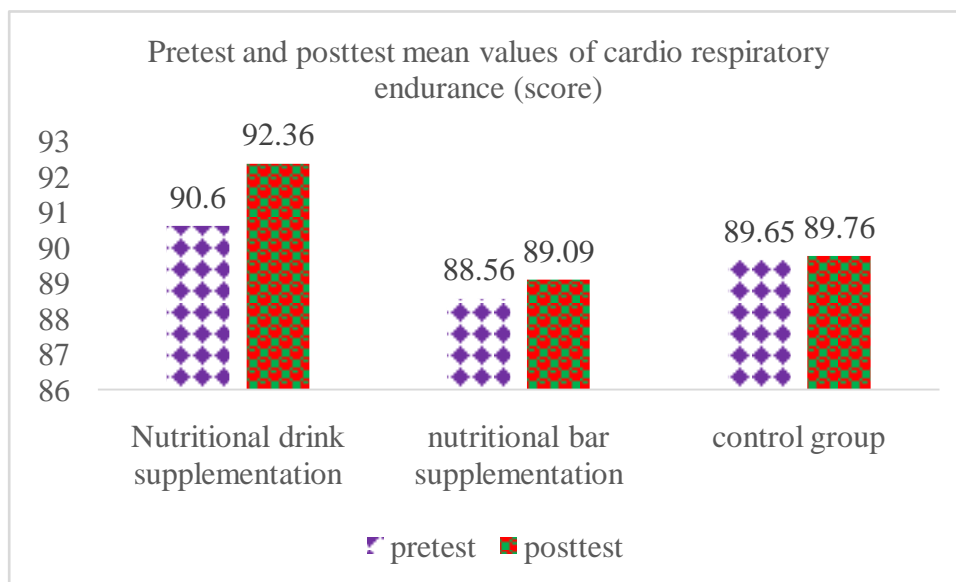


Figure 2

Showing the Pretest and Posttest Mean Values of Cardio Respiratory Endurance of NdsG, Nbsg and Cg

CONCLUSION

- It was concluded that nutritional drink supplementation (NDSG) group had better muscular endurance than the women students of control group (CG) and nutritional bar supplementation (NBSG) group.

4. It was concluded that nutritional drink supplementation group (NDSG) had better cardio respiratory endurance than the women students of control group (CG) and nutritional bar supplementation group (NBSG).
5. Good eating and drinking practices along with talent, training, conditioning, motivation, dedication, adequate sleep and recovery are essential for optimal sports performance. Without these basic elements, no amount of sports supplements will turn you into a champion, supplements can make minimal amount of improvement only.

REFERENCE

Campbell C and et.al., (2008). Carbohydrate-supplement form and exercise performance, International Journal of Sports Nutrition Exercise Metabolism, April; 18(2), pp179-190.

Miller SL and et.al., (2007). The effects of nutritional supplementation throughout an endurance run on leucine kinetics during recovery, International Journal of Sports Nutrition Exercise Metabolism, October;17(5), pp456-467.

Volek JS and et.al., (2015). Rethinking fat as a fuel for endurance exercise, European Journal of Sports Science, 15(1):13-20. doi: 10.1080/17461391.2014.959564



EFFECT OF GOAL SETTING ON MENTAL TOUGHNESS AND PERFORMANCE ABILITIES AMONG ADOLESCENT INDIAN ATHLETES

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ABSTRACT

The purpose of the present study was to determine the effect of goal setting on mental toughness and performance among adolescent Indian athletes. Sixty (N=60) athletes of 17 to 22 years (19.85+ 1.16) of age group were randomly selected from their respective groups. The subjects were selected from three different sports i.e. jumping, sprinting and throwing event players. The athletes have undergone a 6 weeks goal setting program. During the total tenure the athletes were continuously under the observation of their respective coaches. To have a better understanding of the athletes' rate of improvement in mental toughness, general performance and sports performance during the training, a profile was developed for each athlete group. The overall performance of athletes belongs to different disciplines, was also graphically analysed. Further the pre-test and post test data related to their mental toughness and performance components were analysed by applying the analysis of covariance (ANCOVA). The ANCOVA showed that there was a marked amount of improvement in mental toughness but whereas the mean score of all groups did not show any significant difference on reaction. This outcome has indicated that the improvement was uniform throughout the subjects irrespective of the sports they belong to. The post-test mean scores of three different groups had shown a significant difference in 50 meter dash, vertical jump, vertical arm pull and agility.

KEYWORDS: Mental toughness, Performance profile, Goal setting

INTRODUCTION

This study being of its own kind can draw the consideration of the mentors, competitors and games director to understand the significance of this and to consolidate it in all game setting. This can also be used for performance evaluation from time to time. As it is well known that to become a high level performer is not an overnight trick but it requires tremendous amount of positive attitude, dedication, discipline and hard work over the years. This investigation can highlight the requirement in that direction.

There are a few feelings that can hinder a competitors' potential, for example, dread, perplexity, low vitality, weakness, and powerlessness. When one feel these negative feelings one ought to work on altering his opinion set. This is when one must practice creating the positive emotions with the help of goal setting and mental strength to achieve the same. This is a humble effort and message to the athletes and coaches in the direction of performance and enhancement as it's the ultimate goal for both athletes and coach. The present effort put by the researcher is in the direction that how this concept of goal setting if done could help an athlete to reach to his goal without tearing or breaking. This process helps an athlete to be mentally tough for all kind of athletic endeavour.

PERFORMANCE SCENARIO

How do we pick execution perception elective in view of what execution information required? Central to this where/when/how viewpoint is the idea of execution events and their related execution semantics. Given the differences of execution issues, assessment strategies, and sorts of occasions and measurements, the instrumentation and estimation systems expected to bolster execution perception ought to be adaptable, to give greatest open door for arranging execution tests to meet where/when/how destinations, and versatile, to permit predictable cross-stage execution critical thinking.

Scenario 1 –The Angry or Defensive Employee

Scenario 2 –The Employee Who Agrees Too Quickly/Is Quiet

Scenario 3 –Long Term Employee With Some Performance Issues

Scenario 4–Employee With Whom You Don't Have a Good Relationship

Genuine potential can never be completely acknowledged on the off chance that every one of the three ranges of fixation—physical, physiological, and strategic—are not created and rehearsed (Rodriguez, 2005).

Coaches are always interested in learning of ways to motivate their athlete need strategies to maintain their efforts in the face of all type of setback, slumps of season periods, and so on. Unitary concepts of motivation, which originate in psychology such as instinct drives; conditioning, etc. such theories have been replaced by other approaches to understanding motivation. Goal setting is one of those more modest approaches to motivation in sports training.

Success in any sphere which includes sport requires considerable determination and an ability to persist despite difficulties and setbacks. In recent years, professional sport has embraced the contribution of psychological preparation to achieving goals.

- ✓ Goals Need to Be Specific
- ✓ Goals Must Be Difficult but Attainable

- ✓ Goals Must Be Accepted
- ✓ Goals Are More Effective to Evaluate Performance
- ✓ Deadlines Improve the Effectiveness of Goals
- ✓ A Learning Goal Orientation Leads to Higher Performance than a Performance Goal Orientation
- ✓ Group Goal-Setting is As Important As Individual Goal-Setting

STATEMENT OF THE PROBLEM

The purpose of the present study is to investigate the effect of goal setting on mental toughness and performance ability among adolescent Indian athletes.

OBJECTIVE OF THE STUDY

- (a) To set a specific goal for enhancing performance.
- (b) To know the effect of goal setting on performance of athletes
- (c) To know the effect of goal setting on performance of athletes.

DELIMITATIONS

1. This study was delimited to 60 athletes between the age group of 17-22 years.
2. Further the study was delimited to general performance profiling, Physical, skill, Technical and Tactical aspect of performance goal setting.

LIMITATIONS

1. Questionnaire research has its impediments. All things considered, any predisposition that may have crawled into the subject reaction on this record might be considered as a confinement of this study.
2. Athletes recognition towards own conduct might be distinctive. It might be considered as another restriction of this study.
3. Goal setting is done for a specific time, which will be for a period of six months.
4. The preparation and honing style of mentors of different specialities is distinctive, that may have an impact in the answers of the competitors might be considered as another constraint of the study.

HYPOTHESES

Based on the literature found, it is hypothesized that:

Hypothesis1: There would be significant difference in the mental toughness scores of the athletes owing to goal setting at various interval of time.

Hypothesis2: There would be a significant difference in the performance of athletes at various interval of time owing to goal setting.

Definition and Explanation of Terms

Performance Ability

Abilities are general human limits identified with the execution of assignments. they create after some time through the communication of heredity and encounter, and are dependable (Desimone, Wernerl, 2012).

The fundamental contrast between a competency and capacity is that skills require proceeding with training chances to keep up and they may vanish after some time if not utilized. Capacities may likewise “develop” after some time, yet they are typically relative lasting. Capacities are “genuinely steady attributes, which in the grown-up, won’t change particularly unless the individual is subjected to some irregular ecological change” (Fleishman’1962)

Factors Responsible for Performance Ability

Genetic

A quality is the fundamental physical and practical unit of heredity. Each individual has two duplicates of every quality, one acquired from every guardian. Most qualities are the same in all individuals, yet a little number of qualities (under 1 percent of the aggregate) are marginally distinctive between individuals. Alleles are types of the same quality with little contrasts in their arrangement of DNA bases. These little contrasts add to every individual's special physical components.

Physiological

Most extreme oxygen uptake (VO₂max) is characterized as the most astounding rate at which oxygen can be taken up and used by the body amid serious activity. It is one of the fundamental variables in the field of activity physiology, and is as often as possible used to demonstrate the cardio respiratory wellness of a person. Given these uses of VO₂max, there has been incredible enthusiasm for recognizing the physiological elements that farthest point VO₂max and deciding the part of this variable in perseverance execution.

Psychological

A large portion of the musings are programmed and the individual is not by any means mindful then will be then are having then contemplations, for example, these as these are situated in fear, and the feeling that is connected with trepidation is nervousness.

Goal Setting

Goal setting is a powerful technique, especially for improving sport and exercise performance (Kyllo and Landers, 1995). Goal setting in wide terms is the procedure of choosing something an individual need, arranging how to get it, and afterward functioning towards the goal. Objective setting is not wishing or imagining. It is something that is dynamically worked towards. Objective setting is a procedure; it is not something that chose an impulse.

Mental Toughness

In games brain research, mental sturdiness is a blend of scholarly aptitudes that will help you raise the level of your preparation and focused execution: These include: Goal Setting, Stress Management, Self-Confidence, Reboundability, Winning Concentration, Imagery and Visualization (Goldberg, 1998).

Performance Profiling: It is the abilities disclosed by skill tests; short biographical outline (New Webster's Dictionary, 1999).

1. Confidence in Practice: It is the full belief in the trustworthiness of an athlete during practice (New Webster's Dictionary, 1999).

2. Confidence in Competition: It is the full belief in the trustworthiness of an athlete during competition (New Webster's Dictionary, 1999).

3. Relaxation Skill: It is the ability of the person to release any unnecessary tension, tightness or concerns (Weinberg, 1999).

4. Imagination: It is the mental faculty of forming images or concepts of objects or situations not existent or not directly experienced (Oxford Dictionary).

5. Determination: It is the process of deciding or determining.

6. Enjoyment: It is a Pleasurable experience of something.

7. Will to Win: Will to win is defined, as the intensity of the desire to defeat an opponent or to exceed some performance standard in a given sport. Winning or losing should affect their sense of self-esteem. There is some similarity between the will to win concept and need achievement (Anand & Shukla, 1988).

8. Originality: The Capability of or given to inventing or creating something new.

9. Technical Ability: Ability to do something technically.

10. Concentration: It is defined as, "the ability to maintain on relevant environmental cues" (William James, 1993).

11. Motivation: It is defined as; "the direction and intensity of one's effort" (Sage, 1977).

12. Flexibility: It is the ability of the skeletal muscles; joints to move through their full range of motion (John Mascenda, 1995).

13. Aerobic Fitness: It is the ability of an athlete to continue the physical activity for a longer time with sufficient amount of oxygen (Edward & Merle, 1993.)

SIGNIFICANCE OF THE STUDY

Athletes, coaches, sports psychologists, and popular media are in broad agreement that goal setting and mental toughness is a critical ingredient in the making of a champion athlete. Mental toughness is the psychological construct that differentiates champions from the many sub-elite athletes who seem to have the physical characteristics and sporting skills to be champions. However, the problem is that support for this widely accepted claim is largely anecdotal.

1. The findings of the study may add to existing knowledge in this area and will be beneficial to athletes to enhance their performance through performance profiling and goal setting for getting a feedback.

2. It will enable the Coach to understand the athletes' perception towards his goal and plan a program in a systematic manner.

3. Further the study also will be helpful to find out the motivational pattern of an athlete and make the athlete as well as the coach to distinguish between performance goal and outcome goal.

4. The study will further highlight on the role of goal setting on mental toughness of the athletes, which plays a vital role at the time of performance crunch.

5. This study can act as a mile stone in the research area of goal setting and mental toughness, as the effect of the same has been seen over a period of time, to understand various mechanisms of goal setting, performance profiling and mental toughness phenomenon to an athlete's performance.

6. The findings of this study will help the coaches to modify their training program.

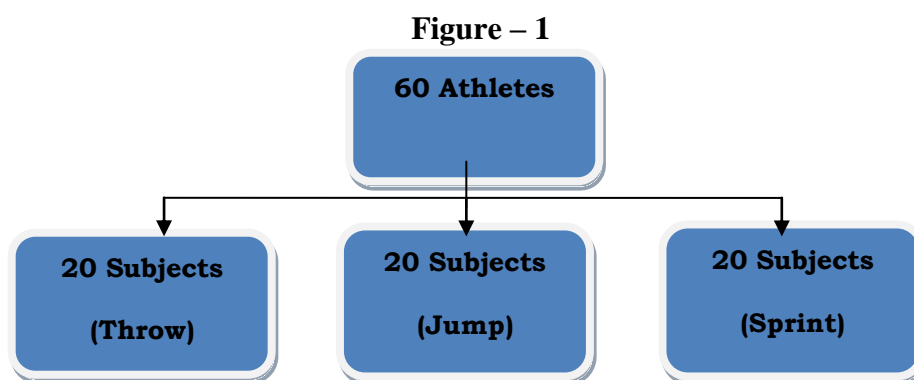
METHODOLOGY AND MATERIAL

RESEARCH DESIGN

The design opted to complete the analysis was Pre –Post Test Factorial Design.

SELECTION OF SUBJECTS

The subjects for the study were 60 male athletes of three major disciplines respectively i.e. Throw, Jump and sprint of Annamalai University, Tamil Nadu were selected. The age of subjects ranged between 17 to 22 years, having the playing experience of 2/3 years and has had the experience of participating in tournament of Inter-district and above level competition. The study will be a single group design. The player's goal will be set with the help of their coach.



Selection of Variables

As explained earlier the subjects chosen for this study were from three major disciplines i.e. Throw, Jump and sprint. To assess the performance, athletes were evaluated by employing Vertical Power Jump Test (Glencross 1960), Vertical Arm Pull Test (Johnson 1969) and Nelson Foot Reaction Test (Nelson and Jack, 1967) along with their throwing performances.

Criterion Measures

1. Mental toughness was measured by Psychological Performance Inventory by James E. Loehr (1982).
2. Performance of athletes was measured by applying the following three tests to measure athletic power (explosive strength) and, speed of reaction respectively.
 - Measurement of explosive strength of major muscles of the lower extremities by Vertical Power Jump Test developed by Glencross and Dennis J. in 1960.

- Measurement of explosive strength of major muscles of the arm and shoulder girth by Vertical Arm Pull Test developed by Johnson B.L in 1969.
- Measurement of speed of reaction of lower extremities by The Nelson Foot Reaction Test developed by Nelson and Jack K. in 1967.
- Actual Performance of athletes was finally measured by taking the average of three performances.

Narration of the Test Items

Psychological Variables

1. **Psychological Performance Inventory (PPI) by James E. Loehr (1982).** It is a useful psychometric instrument to measure individual's mental toughness. This questionnaire measures various aspects of mental toughness such as:

Factor 1	Self Confidence
Factor 2	Negative energy control
Factor 3	Attention Control
Factor 4	Visual / imagery control
Factor 5	Motivational Level
Factor 6	Positive energy Control
Factor 7	Attitude Control

2. Performance Variables

The techniques in athletics require Explosive strength and speed of movement. Therefore for testing the performance of athletes the researcher has selected three tests that help in evaluating athletic power and speed of movement respectively.

1. Vertical Power Jump Test

2. Vertical Arm Pull Test

3. Nelson Foot Reaction Test

4. Estimation of Actual Performance

Tester's Competency and Reliability of Data

The obtained Pearson's Product Moment Co-relation was found to be statistically significant at .01 level of confidence.

Table-3.1
Reliability Co-Efficient of Test Retest Scores

S. No.	Test	Co-efficient of Reliability
1	Mental Toughness (P P I)	0.918
2	Nelson Foot Reaction Test	0.895
3	Vertical Arm Pull Test	0.786
4	Vertical Power Jump Test	0.867
5	Actual Performance	0.916

Statistical Procedure

In order to examine the hypothesis of the study, descriptive statistics such as mean, standard deviation and comparative statistics such as 't' ratio and analysis of co-variance were used for the present study.

RESULTS & ANALYSIS

To start with the discussion, it is the demographic information of the Athletes that have been presented below. The variables that are taken into consideration are age, height, body weight, playing experience and time devoted for training.

The total sample that was opted for the study, their descriptive statistics on various demographic aspects have been presented in table 4.1.

TABLE – 4.1
DESCRIPTIVE STATISTICS OF DEMOGRAPHIC INFORMATION

	N	Minimu m	Maximu m	Mean	Std. Deviation
AGE (years)	60	18.00	22.00	19.85	1.16
Height (in CMS)	60	164.00	184.00	172.30	5.03
Weight (in KG)	60	54.00	92.00	64.05	8.06
Playing Exp (in Years)	60	3.00	6.00	3.3	1.46
Time Devoted for Training (Hours)	60	20.00	36.00	27.05	4.01

Above table indicates that the mean and SD of 60 athletes in their age is 19.85 ± 1.16 ; height 172.30 ± 5.03 ; weight 64.05 ± 8.06 ; playing experience 3.3 ± 1.46 and mean time devoted for training is 27.05 ± 4.01 respectively. The goal setting profile of each athlete on the basis of the data pertaining to psychological performance inventory (PPI) and performance has been described below.

Overall Mental Toughness Score of Athletes Before and After Owing Goal Setting Program for 6 Weeks

Table- 4.2
Analysis of Co-Variance for the of the Athletes of Different Group for Assessing Effect of Goal Setting on Mental Toughness of Athletes

Test	A	B	C	Source of variation	Sum of Squares	Df	Mean sum of Squares	F- ratio
Pre-test	148.	146.6	143.4	Among	213915	2	106957	5.875
Mean & SD	8 12.3	18.6	24.8	Within	218449	17	18204	*
Post-test	166	161.4	159.4	Among	263267	2	131633	5.943
Mean & SD	7.58	14.8	18.3	Within	265755	17	22146	*

Adjusted	163	165.6	162.5	Among	939.11	2	469.55	3.396
Post-test	.2			Within	1520.8	17	138.25	
Mean								

*Significant at 0.05 level $F_{0.05}(2, 17) = 3.52$

A – Jumpers, B – Throwers, C – Sprinters

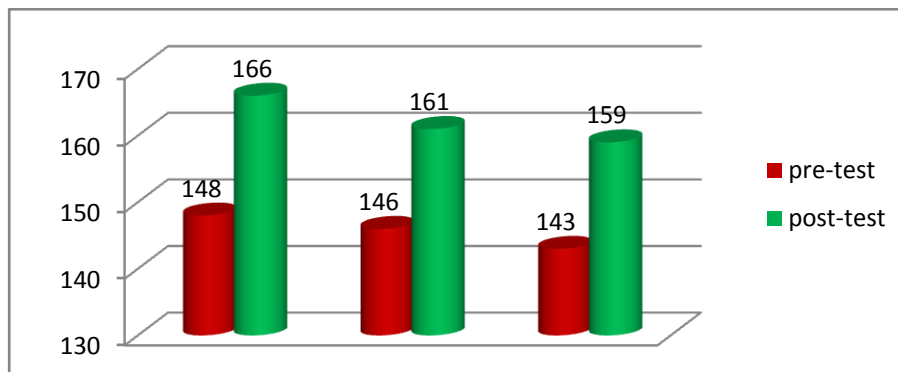


Figure 4.7

Overall Mental Toughness Score of Athletes Before and After Owing Goal Setting Program for 6 Weeks

As shown in table-2, the obtained value in adjusted post-test mean of 3.396 is lower than the required value for the selected degree of freedom; hence it indicates that among the groups they do not differ in their mental toughness factor after goal setting.

Table- 4.3

Analysis of Co-Variance for the of the Athletes of Different Group in Vertical Arm Pull

Test	Group Means			Source of variation	Sum of Squares	D f	Mean sum of Squares	F-ratio
	A	B	C					
Pre-test	9.75	12.53	11.7	Among	1279.5	2	639.7	5.886*
Mean & SD	0.53	0.62	3	Within	1304.2	17	108.6	
Post-test	11.1	14.05	13.4	Among	1652.3	2	826.1	5.900*
Mean & SD	7	0.62	3	Within	1680.1	17	140.01	
Adjusted	12.9	9.81	12.9	Among	0.729	2	0.354	0.650
Post-test	6		8	Within	6.169	17	0.560	
Mean								

*Significant at 0.05 level

$F_{0.05}(2, 17) = 3.52$

A – Jumpers,

B – Throwers,

C – Sprinters

As shown in table-3, an insignificant value of F-ratio was obtained for adjusted post test means (0.650). The obtained value was lesser than the required value for the selected degree of freedom. As there was an insignificant difference in post test adjusted mean scores, there was no further analysis done.

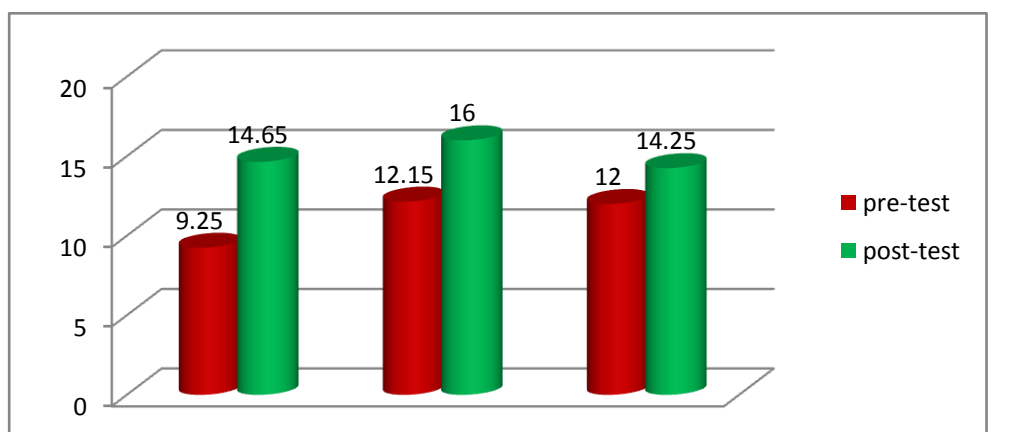


Figure 4.8

Comparison of Pre test& Post-test Means of vertical arm pull

Table- 4.4

Analysis of Co-Variance for the Athletes of Different Groups on Explosive Strength Test									
Test		A	B	C	Source of variation	Sum of Squares	Df	Mean sum of Squares	F-ratio
Pre-test	Mean	2.61	2.47	2.50	Among	64.29	2	32.14	5.966*
	& SD	0.12	0.21	0.14	Within	64.65	17	5.38	
Post-test	Mean	2.91	2.84	2.52	Among	83.17	2	41.58	5.990*
	& SD	0.14	0.06	0.07	Within	83.29	17	6.94	
Adjusted Post-test	Mean	2.82	2.98	2.90	Among	0.300	2	0.150	0.403
					Within	0.410	17	0.372	

*Significant at 0.05 level

F.05 (2, 17) = 3.52

A – Jumpers, B – Throwers, C – Sprinters

As shown in table-6, an insignificant value was obtained for adjusted post test means (0.403). The obtained values were lower than the required value for the selected degree of freedom; hence it indicates that the three groups in the present study do not differ in their vertical jump performance after goal setting. This finding is quite controversial in the context of the type of sport and athletes who were considered in the study. It may be owing to the factor of sample size.

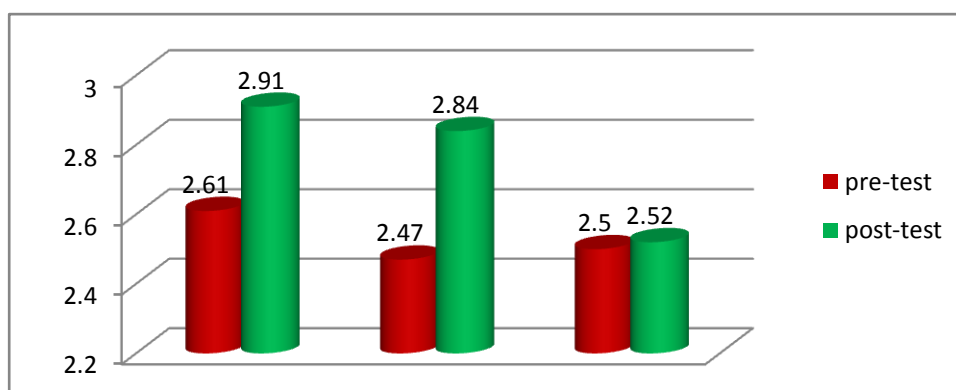


Figure 4.9

Comparison of Pre-Test& Post-Test Means of the Explosive Strength Performance

Table- 4.5

Analysis of Co-Variance for the Athletes of Different Group in Nelson Foot Reaction

Test	A	B	C	Source of Variation	Sum of Squares	Df	Mean sum of Squares	F-ratio
Pre-test Mean & SD	6.54 0.15	6.36 0.18	6.90 0.43	Among Within	435.3 437.0	2 17	217.6 36.41	5.976*
Post-test Mean & SD	6.26 0.11	6.08 0.08	6.69 0.21	Among Within	380.2 380.5	2 17	190.1 31.71	5.994*
Adjusted Post-test Mean	6.31	6.48	5.88	Among Within	0.712 0.971	2 17	0.356 0.088	4.033*

*Significant at 0.05 level

F.05 (2, 17) = 3.52

Required value of critical difference at 0.05 level is 0.413

A – Jumpers, B – Throwers, C – Sprinters

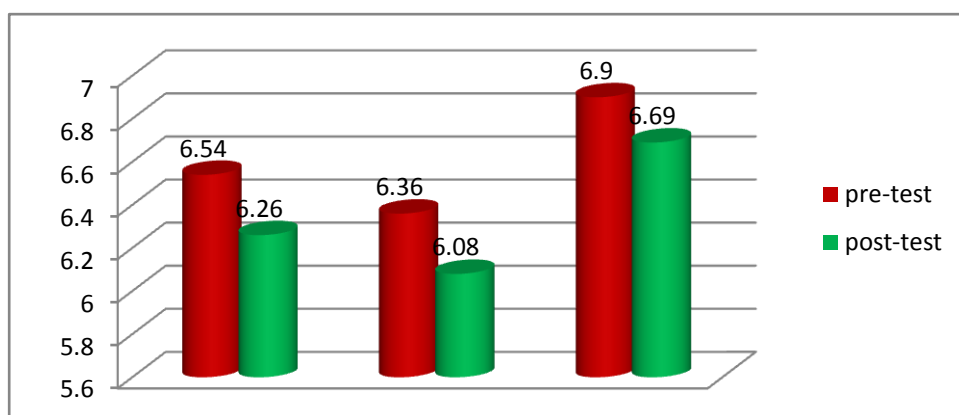


Figure 4.10

Comparison of Pre-Test, Post-Test Means of the Nelsons Foot Reaction

Table- 4.6

Analysis of Co-Variance for the Athletes of Different Groups on Actual Performance

Test	A	B	C	Source of variation	Sum of Square	Df	Mean sum of Squares	F-ratio
Pre-test Mean & SD	72.4 3.13	75.4 1.82	77. 0	Among Within	56131. 9	2 17	28065.9 4700.9	5.970*
Post-test Mean & SD	74.8 0	81.0 2.45	77. 8	Among Within	60600. 1	2 17	30300.1 5078.1	5.966*
Adjusted Post-test Mean	77.4 3	74.3	75. 6	Among Within	18.887 4	2 17	9.4437 5.0738	1.861

*Significant at 0.05 level

F.05 (2, 17) = 3.52

A – Jumpers, B – Throwers, C – Sprinters

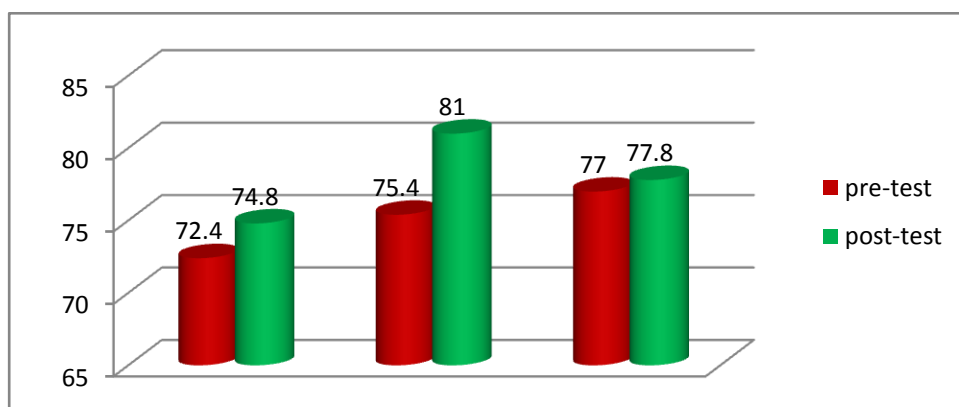


Fig: 4.11

Comparison of Pre-Test and Post-Test Means of Different Groups on Actual Performance

CONCLUSIONS

The total sample that was opted for the study was of sixty numbers. Their descriptive statistics on various demographic the mean and SD in their age is 19.85 ± 1.16 ; height 172.30 ± 5.03 ; weight 64.05 ± 8.06 ; playing experience 3.3 ± 1.46 and mean time devoted for training is 27.05 ± 4.01 respectively.

In case of the athletes in the present study, it was observed that they have improved upon their mental toughness score over a period of time. Psychological Performance Inventory's scores that indicate mental toughness factors highlighted that the athletes have scope for improvement and need for special attention in different parameters and the ability could be improved through training.

The obtained value in post-test mean of 1.394 is lower than the required value for the selected degree of freedom; hence it indicates that among the groups they differ in their mental toughness factor after goal setting.

The obtained value in post-test mean of 4.033 is higher than the required value for the selected degree of freedom, which indicated that there has been a significant improvement in all the subjects belonging to three different experimental groups.

As far as the psycho-physiological capabilities are concerned, all the athletes have shown a periodic and progressive improvement over a period of time. However it was seen that prior to the implementation of goal setting treatment the athlete's psycho-physiological parameters need massive improvement to cope up with their performance standards. Major of the athletes' response was periodic and continuous up to the 6th week and in the final observation the performance was comparatively better than the initial measurement.

All the athletes in the present study have shown significant and continuous improvement in their performance, over a period of time. The study indicates a progressive pattern of improvement in the performance standard of all the athletes with respect to time.

On the basis of the findings of the study, the following conclusions are drawn:

1. Six weeks of goal setting training is a useful mean to improve the mental toughness of individual athletes irrespective of their sport discipline.

2. Goal setting enhances sports specific performance, skill performance and fitness performance of individual athletes irrespective of their sports discipline.
3. Goal setting training program is useful to improve the general performance.

REFERENCES

- Weinberg, Robert S., (1981) The Relationship Between Mental Preparation Strategies and Motor Performance: A Review and Critique, *QUEST* Vol. 33 (2), 195 – 213.
- Brobst, B., & Ward, P., (2002) Effects of public posting, goal setting, and oral feedback on the skills of female soccer players. *The Journal of Applied Behavior Analysis*; 35(3), pp. 247-257.
- Pierce, Barbara E., & Burton, Damon (1998), Scoring the Perfect 10: Investigating the Impact of Goal-Setting Styles on a Goal-Setting Program for Female Gymnasts, *The Sport Psychologist*, 12(2), pp. 156 – 168.
- Mellalieu, Stephen D; Hanton, Sheldon; & O'Brien, Michael (2006) The Effects of Goal Setting on Rugby Performance; *Journal of applied Behaviour analysis*, Vol. 39(2), 257–261.
- Goudas, M., Theodorakis Y., and Laparidis K., (2007), The Effect of External Versus Internal Types of Feedback and Goal Setting on Endurance Performance, *Athletic Insight Journal*, Vol. 9(3), 57-66.
- Senecal J, Loughhead TM, & Bloom GA (2008) A season-long team-building intervention: examining the effect of team goal setting on cohesion, *Journal of Sport Exercise Psychology*. Vol.30 (2), 186-199.
- Stoeber J., Uphill, M.A., & Hotham S. (2009) Predicting race performance in triathlon: the role of perfectionism, achievement goals, and personal goal setting. *Journal of Sport and Exercise Psychology*, Vol. 31(2), 211-245.
- Rovio, E., Eskola, J., Gould, D., and Lintunen, T. (2009) Linking theory to practice – Lessons learned in setting specific goals in a junior ice hockey team, *Athletic insight, The online journal of sport psychology*, Volume 11 (2), 235-41.
- Fred C. Lunenburg (2011) “Goal-Setting Theory of Motivation”, *International Journal of Management, Business, and Administration*, Vol. 15 (1), 121-128
- Fourie, S. & Potgieter, J.R. (2001). The nature of mental toughness in sport: South African Journal for Research in Sport, *Physical Education and Recreation* 23 (2), 63-72, 143-49.
- Loehr, J.E. (1986). *Mental toughness training for sports: Achieving athletic excellence*. Lexington, MA: Stephen Greene Press.
- Boyce B. A., & Wayda V. K., (1994), The Effects of Assigned and Self-Set Goals on Task Performance, *Journal of Sport and Exercise Psychology*, 16(3), pp 258-269.
- Tzetzis G, Kioumourtoglou E, Mavromatis G (1997) Goal setting and feedback for the development of instructional strategies, *Perceptual and Motor Skills*, Vol. 84, 1411-1427.
- Stephens G. Harkins, & Malia D. Lowe (2000) The Effects of Self-Set Goals on Task Performance, *Journal of Applied Social Psychology* Vol. 30 (1), 33–40.
- Brobst, B., & Ward, P., (2002) Effects of public posting, goal setting, and oral feedback on the skills of female soccer players. *The Journal of Applied Behavior Analysis*; 35(3), pp. 247-257.



IMPLICATION OF RESTRICTED DIET OF CARBOHYDRATE, FAT AND PROTEIN WITH PHYSICAL EXERCISES INTERVENTION ON OBESITY

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ABSTRACT

If obese or overweight, have an increased risk of developing various health problems. The best chance of losing weight and keeping the weight off is to be committed to a change in lifestyle. The remedial solution for this obesity includes eating a healthy diet and doing some regular physical activity. The main purpose of the study is to investigate obesity persons by restricting diet with carbohydrate, fat and protein and involving them in physical exercises. The excess amount of dumped carbohydrate which is stored as fat was reduced by lowering the intake of carbohydrate and increasing fat and protein and coupling physical exercise to reduce the level of obesity. Collection of various sources of existing studies on obesity reduction through restricted diet and physical exercises. Most of the studies derived the implication of controlled diet, diet with exercises and only exercises intervention to find out the significant results on obese people. The data interpreted with the statistical analysis and percentile calculation to derive the results from the review of literatures from various sources. From the existing studies; the results revealed that restricted diet with exercise modules had high impact on obesity reduction than only diet or only exercises intervention.

KEYWORDS: Carbohydrate, Fat, Protein, Physical Exercises, Obesity

INTRODUCTION

Health and physical fitness have a vital role in the life of men from time immemorial; every individual should develop physical fitness for a happy and effective living. Physical fitness has been defined as the ability to carry out daily tasks with vigour and alertness, without undue fatigue, and with ample energy to enjoy leisure time activities and to meet unusual situations and unforeseen emergencies.

Obesity is a state of being fatty or overweight that ideal level. If obese or overweight, have an increased risk of developing various health problems. The best chance of losing weight and keeping the weight off is to be committed to a change in lifestyle. The remedial solution for this obesity includes eating a healthy diet and doing some regular physical activity

METHODOLOGY

The main purpose of the study is to investigate obesity persons by restricting diet with carbohydrate, fat and protein and involving them in physical exercises. The excess amount of dumped carbohydrate which stored as fat was reduced by lowering the intake of carbohydrate and increasing fat and protein and coupling physical exercise to reduce the level of obesity. The method of collecting data is done by various sources of existing studies on obesity reduction through restricted diet and physical exercises. Most of the studies derived the implication of controlled diet, diet with exercises and only exercises intervention to find out the significant results on obese people. The data interpreted with the statistical analysis and percentile calculation to derive the results from the review of literatures from various sources.

FINDINGS

Sl.no	Variables	Authors	Result	Year
1	Corticolimbic activation for High-Calorie Food Cues	Dimitropoulos, A., Tkach, J., Ho, A.,	Obese have more cues for hcf	2012
2	moderate-to-vigorous intensity aerobic exercise, dietary weight loss, or both interventions combined(45 min aerobic)	Foster-Schubert, K., Alfano, C. et.al	dietary weight loss and aerobic exercise interventions was excellent	2012
3	Diet and exercise	Philippou, C., Andreou, E., et.al	Exercise + diet has more effect	2012
4	Aerobic and/or caloric restriction	Hagan RD, Upton SJ et.al	D+E has more result	1986
5	diet-induced weight loss or exercise-induced weight loss	Ross R, Dagnone D, Jones PJ et.al	E+ D has more results	2000
6	Exercise-induced reduction in obesity and insulin resistance in women	Ross R, Janssen I, Dawson J et.al	Exercise, diet group has significant with other two groups	2004
7	Exercise and weight loss on plasma lipids	Sopko G, Leon AS, Jacobs DR Jr	Both separately and	1985

		et.al	independently improves HDL	
8	Exercise and diet in men and postmenopausal women with high LDL, low HDL	<u>Stefanick ML, Mackey S</u> et.al	Result are good in exercise group and failure in non-exercise group	1998
9	Fat intake on body weight	<u>Hooper L, Abdelhamid A</u> et.al	Found result in reduced intake	2015
10	Reduction in saturated fat intake for cardiovascular disease	<u>Hooper L, Martin</u> Net.al	Shows good result in reduction and recommended to reduce in regular diet	2015

CONCLUSION

1. From the existing studies; the results revealed that restricted diet with exercise modules had high impact on obesity reduction than only diet or only exercises intervention.
2. The second conclusions derived from this study are the only doing exercises also impact over the obesity reduction.

RECOMMENDATIONS

1. Restricting on carbohydrates and Involving with Cardio will have huge impact on weight reduction and controlling the level of obesity.
2. This study may be recommended for further laboratorial experiment for further outreach.

REFERENCES

1. **Dimitropoulos, A., Tkach, J., Ho, A., & Kennedy, J. (2012)** "Greater Corticolimbic Activation to High-Calorie Food Cues after Eating in Obese vs. Normal-Weight Adults" *Appetite*, 58(1), 303–312. <http://doi.org/10.1016/j.appet.2011.10.014>
2. **Foster-Schubert, K., Alfano, C et.al (2012)** "Effect of diet and exercise, alone or combined, on weight and body composition in overweight-to-obese post-menopausal women" *Obesity* (Silver Spring, Md.), 20(8), 1628–1638. <http://doi.org/10.1038/oby.2011.76>
3. **Philippou, C., Andreou, E et.al (2012)** "Effects of diet and exercise in 337 overweight/obese adults" *Hippokratia*, 16(1), 46–50.
4. **Hagan RD, Upton SJ, Wong L, Whittam J. 1986** "The effects of aerobic conditioning and/or caloric restriction in overweight men and women" *Med Sci Sports Exerc.* 1986 Feb;18(1):87-94.
5. **Ross R, Dagnone D, Jones PJ et.al 2000** "Reduction in obesity and related comorbid conditions after diet-induced weight loss or exercise-induced weight loss in men. A randomized, controlled trial" *Ann Intern Med.* 2000 Jul 18;133(2):92-103.



FORMULATION AND SENSORY QUALITY OF VALUE ADDED COOKIE FOR SPORTS PERSON

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ABSTRACT

Sports and physical fitness are characterized by numerous biochemical and physiological changes in the body affecting the body composition, body secretions, cellular functions and metabolic reactions. Nutrients play a significant role in maintaining healthy bodily function, preventing disease, and boosting cognitive performance, as well as fueling physical performance and recovery. Athletes typically require modestly increased intakes of macronutrients and micronutrients. The extra intake is required for proper repair and recovery, energy, metabolic function, and endocrine function. Protein is associated with muscle building, repairing and preventing their damage in sports. It is also essential for the formation of ligaments, tendons, cartilage, bones as well as hormones, enzymes, antibodies and neurotransmitters. But sports persons may require different amount of these nutrients. Hence the present study aimed to formulate the value added cookie with the incorporation of selected cereal, pulse, vegetable protein with the addition of coffee bean powder and evaluate the sensory quality using nine point hedonic rating scale. The preparation of cookie upto 40% replacement with value added flour mix was acceptable in all sensory attributes as compared to control cookie. It ensures good health and well being toward sports performance.

KEYWORDS: Value added protein, Coffee bean, Cookie, Sensory attributes

INTRODUCTION

Sports performance and recovery is gently influenced by the quality of protein and supply of the amino acids at the appropriate time. Ingestion of protein alone does not build the muscles. Training and exercise is essential because they have an anabolic effect and promote protein synthesis. Baked products have popularities in the populace because of their availability, ready to eat convenience and having good shelf life (**Vijaykumar et al., 2013**). Because of their low moisture content this ensures less chance of microbial spoilage, therefore large scale production and distribution possible. Biscuits among all the bakery products are more significant and widely used snack by children and adult (**Dhankar, 2013**). Therefore, attempts are made for the formulation of cookie, in which wheat flour partially replaced with the value added flour mix.

MATERIAL AND METHODOLOGY

Selection of ingredients

Nutrition is equally much more important to body to accomplish the goal set by trainers, but most of the sports person neglects it. So they need to consume food supplements for boosting endurance capacity and performance. In this view the present study aimed to formulate and develop the value added biscuits with the incorporation of selected cereal, pulse, vegetable, nuts and seeds such as maize, barley, oats, red rice flakes, soya bean, peanut, cucumber seed, almond, beet root with the addition of coffee bean.

Procurement of raw material

The maize, barley, oats, red rice flakes, soya bean, peanut, cucumber seed, almond, beet root and coffee bean were purchased from the local market of Thanjavur district in bulk.

Processing of Value Added Cookie

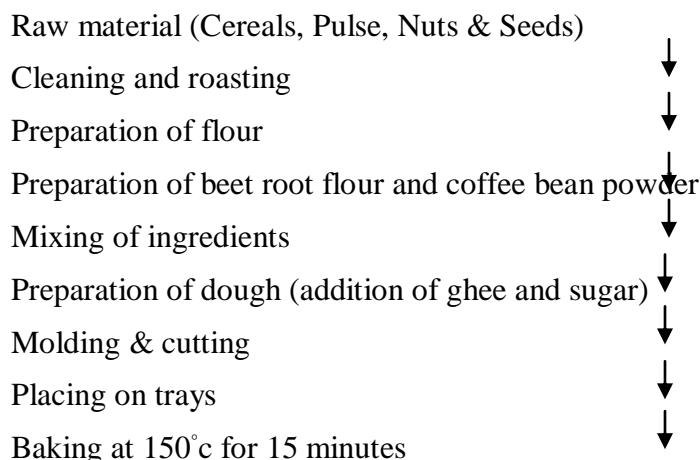


Figure - 1

Preparation of value added flour mixes

The selected raw materials were thoroughly cleaned and roasted separately and set aside for cooling. Then the roasted ingredients were made into flour using electric mixer. The powdered flour mix was stored in air tight container until further use for experiments. For the preparation of beet root powder, beet root was cleaned thoroughly using running water, then outer skin was removed and dried in tray drier at 50°C for the period of two days. Then dried beetroot was

powdered using electric mixer. Similarly the coffee bean was roasted and grinds it in an electric grinder. The powdered beet root powder and coffee bean powder was stored in polythene pouch separately and stored.

Preparation of value added flour mix for biscuit

Formulation was prepared by blending wheat flour and value added flour mix in different proportions. For the purpose of standardization of flour mix, a number of preliminary trials were conducted. Different combinations of flour of wheat flour and value added flour mix in the ratio of 70:30, 60:40, 50:50 were used to prepare coffee bean incorporated cookie shown in Table-I and standardized proportion of value added coffee bean incorporated biscuit is shown in Table - II

TABLE – 1
PREPARATION OF FLOUR MIX PER 100GM

Samples	Wheat flour	Value added flour mixes
CB	100	-
WVACS1	70	30
WVACS2	60	40
WVACS3	50	50

CB- Control Cookie with 100% wheat flour WVACB- Wheat and Value added Cookie with coffee bean powder

TABLE – 2
STANDARDIZED RECIPE OF COOKIE

Samples	Wheat flour
Value added flour mixes	50
Wheat flour	50
Ghee	50
Sugar	50

Sensory evaluation of Cookie

The prepared control and value added cookie were evaluated by a panel of judges using nine point hedonic rating scale. The parameter studied were colour/appearance, flavour, texture, taste, and over all acceptability were shown in Figure –II and Table-III

RESULT AND DISCUSSION

Preparation of flour blends:

To develop the flour blends maize, barley, red rice flakes, oats, soya bean, peanut, almond and cucumber seed were procured in equal proportion and processed separately with the addition of subsequent equal proportion of beet root powder and coffee bean powder. The control cookie was prepared from whole wheat flour. From the development of value added cookie with coffee powder, the acceptability was observed in all the ratio of wheat flour: value added flour mix viz, 70:30, 60:40 and 50:50.

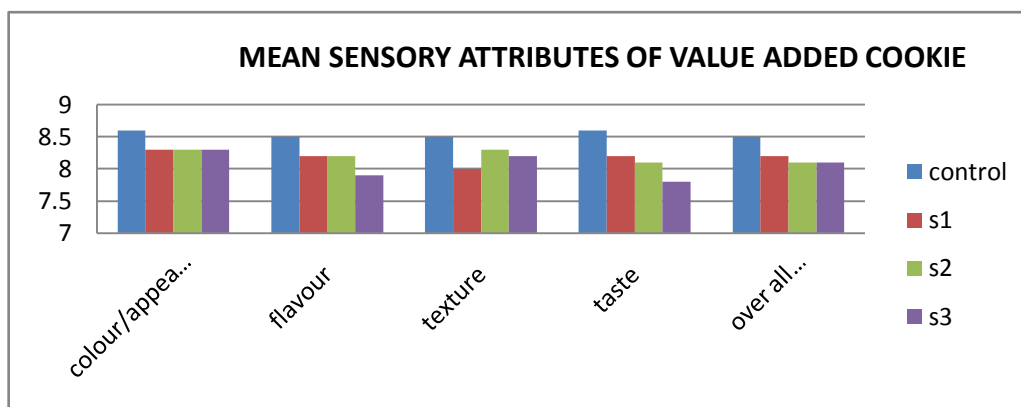


Figure 2

Sensory evaluation of value added cookie

Results of mean sensory evaluation of biscuit prepared with 30,40 and 50 % of value added flour mix with the addition of wheat flour mix at 70,60 and 50% were given in the **Table-III** and figure – 1.

TABLE – 3
MEAN SENSORY ATTRIBUTES OF VALUE ADDED COOKIE

Samples	SENSORY ATTRIBUTES					Total scores
	Colour& Appearance	Flavour	Texture	Taste	Over all acceptability	
Control	8.6	8.5	8.5	8.6	8.5	42.7
S1	8.3	8.2	8	8.2	8.2	40.9
S2	8.3	8.2	8.3	8.1	8.1	41
S3	8.3	7.9	8.2	7.8	8.1	40.3

Control cookie with 100% wheat flour, **Variation : S₁** with 70% wheat flour and 30% value added mixes, **S₂** with 60% wheat flour with 40% value added mixies, **S₃** with 50% wheat flour with 50% value added mixes

Sensory evaluation revealed that control cookie has got highest scores in the parameters like colour and appearance (8.6), flavour (8.5), texture (8.5), taste (8.6) and over all acceptability (8.5) where as in value added health mix cookie made from incorporation of wheat flour (60%) and value added health mixes flour (40%) shows highest scores in colour (8.3), flavour (8.2), and taste (8.3) and obtained maximum score and rated as extremely good. Plant Phytochemicals or natural antioxidants have been associated with many health benefits (**Huang and Prior, 2011**).

CONCLUSION

Hence the present study conclude that the formulation of value added flour mix to be incorporated with wheat flour for the development of cookie was acceptable to provide health benefit to the sports person. Value added cookie with preparation up to 40% replacement with value added flour mix was acceptable in all sensory attributes. In order for athletes to meet these

recommendations and obtain valuable nutrients from whole, natural foods and ability needed to apply that knowledge to their own food choices. This effort will promote change in dietary habits of the individual to obtain adequate nutrition to optimize health and fitness or sports performance.

REFERENCES

1. C. Vijay kumar, D. Peter, H. Bobde, M. John, "Quality characteristics of cookies prepared from oats and finger millet based composite flour," Journal of International Engg. Sci Technology, (3), pp. 677-683, 2013.
2. P. Dhankar, "A Study on Development of Coconut Based Gluten Free Cookies," Int Journal Engg Sci Invent, (2), pp. 10-19, 2013.
3. D. O. Huang, and B. R. Prior, "The Chemistry behind Antioxidant Capacity Assays, Journal of Agriculture and Food Chemistry, (53), pp. 1841-1856, 2005.



EFFECT OF PROCESSING ON THE TOTAL ANTIOXIDANT CAPACITY AND TOTAL PHENOL CONTENT OF INDIAN GREEN LEAFY VEGETABLES

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ABSTRACT

Green leafy vegetables are identified as a rich source of beta carotene. Apart from carotenoids, they contain many bioactive components and are found to have the highest antioxidant capacity than some fruits and root vegetables. There are many green leafy vegetables conventionally used in Indian households and data on the Total Antioxidant Capacity (TAC) and Total Phenols (TP) of these greens is scarce. Nine commonly used green leafy vegetables, namely, Amaranthus G. (Amaranthus Gangeticus), Amaranthus T. (Amaranthus Tristis), Fenugreek leaves(Trigonella Foenum-graecum), Coriander leaves(Coriandrum Sativum Linn.), Mint leaves(Mentha Sativa), Curry leaves(Coriandrum Sativum Linn), Spinach(Spinach oleracea Linn), Solanum leaves(Solanum Nigrum) and Drumstick leaves(Moringa Oleifera) were selected and assessed for TAC by Oxygen Radical Absorbance Capacity (ORAC) assay and Ferric Reducing Antioxidant Power (FRAP) assay and TP by Folin Ciocalteu method. The leaves were subjected to steaming and drying and the effects of the processes on TAC and TP were analysed. The TAC of fresh leaves ranged from 496.72 $\mu\text{mol TE}/100\text{g}$ in spinach to 5248.98 $\mu\text{mol TE}/100\text{g}$ in curry leaves by ORAC assay. Fresh curry leaves had the highest antioxidant capacity in both assays and also the highest total phenolic content of 703.42 mg GAE/100g. Steamed and dried leaves had higher values than fresh leaves. In evaluating the effect of processing, after adjusting for moisture gain or loss, steaming increased while drying decreased the TAC and TP content of green leaves with few exceptions. Phenols contributed a higher percentage to TAC in fresh leaves, but their contribution decreased after steaming and drying.

KEYWORDS: *Green leafy vegetables, Total Antioxidant Capacity, Total Phenols, Steaming, Drying*

INTRODUCTION

Plant based foods, namely, fruits and vegetables are being increasingly researched for their role as nutraceutical agents in the prevention and treatment of diseases. The protective effect of these foods are probably mediated through multiple beneficial nutrients contained in them, including mono and polyunsaturated fatty acids, n-3 fatty acids, antioxidant vitamins, minerals, phytochemicals, fibre, and plant proteins[1]. Ascorbates act as hydrophilic scavengers of free radicals while α -tocopherol and carotenoids act as hydrophobic scavengers[2]. Phenols, polyphenols, flavonoids, terpenes in fruits and vegetables [3] and specific components like lycopene in tomatoes and its products [4] and green tea polyphenols [5] prevent degenerative diseases, offer chemo protection and reduce oxidative stress. The additive and synergistic effect of phytochemicals in fruits and vegetables are responsible for their potent antioxidant and anticancer activities, and that the benefit of a diet rich in fruits and vegetables is attributed to the complex mixture of phytochemicals present in whole foods [6]. The complex mixture of phytochemicals and their synergistic effect make their individual assessment difficult and hence the Total Antioxidant Capacity (TAC) along with Total Phenols (TP), since phenolic acids are widely prevalent in foods, will provide the overall measure of the antioxidant effect of the food.

Green leafy vegetables are identified as a rich source of beta carotene. Apart from carotenoids, they contain many bioactive components and are found to have the highest antioxidant capacity than some fruits and root vegetables [7]. Green leafy vegetables are rich in phenolic acids and flavanoids [8] which are potent antioxidants and help in preventing cardio vascular [9] and some chronic diseases [10]. A higher intake of dark green leafy vegetables or dark yellow vegetables has been significantly associated with reducing risk of type 2 diabetes mellitus [11].

In India the tropical climate gives access to fresh fruits and vegetables including green leafy vegetables. There are many green leafy vegetables conventionally used in Indian households and data on the TAC and TP of these greens is scarce. A measure of TAC and TP of the fresh and processed green leaves will provide useful information on their antioxidant capacity and encourage people to consume them considering their benefits.

MATERIALS AND METHODOLOGY

Collection of samples

Commonly used green leafy vegetables (Figure I) namely *Amaranthus G.* (*Amaranthus Gangeticus*), *Amaranthus T.* (*Amaranthus Tristis*), Fenugreek leaves (*Trigonella Foenum-graecum*), Coriander leaves (*Coriandrum Sativum Linn.*), Mint leaves (*Mentha Sativa*), Curry leaves (*Coriandrum Sativum Linn*), Spinach (*Spinach oleracea Linn*), Solanum leaves (*Solanum Nigrum*) and Drumstick leaves (*Moringa Oleifera*) were selected as they are commonly used and are very much accessible at the local markets. The leaves were purchased from local markets in the Coimbatore district of Tamilnadu, India. To eliminate the cultivar and seasonal variations, a collective sample from five different vendors across the city was purchased for each variety and estimations done for samples (only leaves) collected during two seasons and average values taken.

Oxygen Radical Absorbance Capacity (ORAC) assay

TAC of the green leaves was measured as Oxygen Radical Absorbance Capacity (ORAC) using method by Ou et al [12]. The ORAC assay is more sensitive and reflects antioxidant properties even of such a low quantity of polyphenols [13]. The advantage of the ORAC assay is that it combines both the inhibition time and inhibition degree of the radical generation, as it takes the oxidation reaction to completion and uses the area under the curve to quantify the antioxidant capacity. Fluorescein sodium salt was used for imparting fluorescence. The working solution and the solution for dilution was sodium phosphate buffer with a Ph of 7.4. Trolox, a water soluble analogue of vitamin E was used as the standard and measurements were taken using a spectrofluorometer (Jasco FP 777, Tokyo, Japan). The fluorescence was measured every minute after the addition of 2,2-azobis (2-methyl propionamidine) dihydrochloride (AAPH). All fluorescent measurements are expressed relative to the initial reading. The final results were calculated using the difference of areas under the fluorescent decay curves between the blank and sample and were expressed as micromole Trolox equivalents per 100 g of food ($\mu\text{mol TE}/100\text{g}$). Total ORAC value for the samples was calculated by adding the values of the hydrophilic and lipophilic extracts.

Ferric Reducing Antioxidant Power (FRAP) assay

Ferric Reducing Antioxidant Power (FRAP) of the sample extracts was estimated using the method by Benzie and Stain [14]. It estimates the ability of the sample to reduce ferrous ion to ferric ion. In presence of 2, 4, 6-Tripyridyl-s- Triazine (TPTZ), a blue colour was formed, the intensity of which was measured at 593 nm using a UV spectrophotometer (optima). Trolox was used as the standard and results expressed as micromole Trolox equivalents per 100 g of food ($\mu\text{mol TE}/100\text{g}$).

TOTAL PHENOLS

The total phenolic content of the green leafy vegetables were estimated by Folin Ciocalteu method [15]. Gallic acid was used as the standard and results expressed as mg of gallic acid equivalents per 100 g of food (mg GAE/100g).

METHODS OF PROCESSING

The leaves (100 g) were subject to two methods of processing, namely, shade drying at room temperature in well ventilated room for 6-7 days till the leaves lost 98% of moisture and steaming (5 minutes) and their TAC and TP values estimated.

PREPARATION OF EXTRACTS

The leaves both fresh and processed were macerated and extracted with 80% methanol [16] by shaking vigorously for 30 minutes using a cyclo rotator. The sample suspensions were centrifuged at 10000 rpm at 5°C for 20 minutes and the supernatants filtered through wattman filter paper and the extract used for estimation of hydrophilic ORAC, FRAP and TP. To estimate the ORAC value of the lipid soluble fractions, the residue was agitated with acetone, shaken vigorously for half an hour, centrifuged (10000 rpm at 5°C for 20 minutes) and the supernatant used for estimation.

RESULTS AND DISCUSSION

Total Antioxidant Capacity of fresh leaves

The TAC values by ORAC assay was higher than FRAP assay for all the samples. There was a significant correlation ($P < 0.01$) between the two methods. But the ranking of foods in the order of highest antioxidant capacity was observed to be different in the two methods. For example, fenugreek leaves ranked fourth in ORAC assay whereas it was eighth in FRAP assay. ORAC and FRAP assays have two different principles, the former based on quenching peroxide radical and the later based on the reducing capacity of the compounds and hence variations can be expected.

The TAC of fresh leaves (Table I and Table II) ranged from 5248.98 $\mu\text{mol TE}/100\text{g}$ to 496.72 $\mu\text{mol TE}/100\text{g}$ by ORAC assay and 4419.4 $\mu\text{mol TE}/100\text{g}$ to 374.97 $\mu\text{mol TE}/100\text{g}$ by FRAP assay. In both assays curry leaves had the highest antioxidant capacity and spinach had the least. The amaranth varieties ranked second and had higher TAC values than drumstick, coriander, mint and fenugreek leaves. Curry leaves have also been reported to have comparatively the highest antioxidant capacity by other antioxidant assays [17].

TAC of Dried and Steamed leaves

The dried samples had significantly higher TAC values by both ORAC and FRAP assay than fresh and steamed leaves (Table I and Table II) except for spinach leaves. Steamed spinach leaves did not have a higher value than fresh leaves but dried spinach leaves had. Cooking with excess water, boiling and blanching reduces the antioxidant capacity while sautéing and steaming at atmospheric and high pressures increases the antioxidant capacity [18].

Among steamed leaves Mint and Amaranth leaves had the highest antioxidant capacity followed by curry leaves. The TAC values (ORAC) of steamed Mint leaves was seven times more than fresh leaves.

Among dried samples (Table I and Table II), dried Curry leaves had the highest antioxidant capacity in both ORAC and FRAP assay, 22471.46 $\mu\text{mol TE}/100\text{g}$ and 14448.9 $\mu\text{mol TE}/100\text{g}$ respectively. The dried leaves had very high TAC values, the TAC value of dried Solanum leaves being 18 times more than fresh leaves.

TOTAL PHENOLS

Among fresh leaves, Curry leaves had the highest phenolic content of 703.42 mg GAE/100g and Mint leaves had the least total phenols of 154.01 mg GAE/100g (Table III). Curry leaves have been studied to be rich in phenolics. The major phenolic constituents in curry leaves include myricetin-3-galactoside, quercetin-3-rutinoside, quercetin-3-glucoside, kaempferol-3-O-caffeoylate, isorhamnetin-3-O-glucoside and 5-caffeoyl quinic acids [19].

Steaming substantially increased the phenolic content of all the leaves except in curry leaves and spinach. The phenolic content of steamed curry leaves was 1.5mg less than fresh leaves. The phenolic content of steamed spinach leaves was marginally higher, by 8.29mg, than fresh leaves. Steamed mint leaves had the highest phenolic content of 785.4 mg GAE/100g.

Dried fenugreek leaves had a lower phenolic content than fresh leaves while all the other samples had higher values than fresh leaves. A study on the effect of sun drying on the antioxidant and phenolic contents has also revealed a significant increase in the total phenol content (6.45-223.08 percent gain), reducing property (16.00-362.50 percent gain) and free

radical scavenging ability (126.00-5757.00 percent gain) of the green leafy vegetables but a significant decrease in vitamin C content[20].

Effect of processing on the TAC and TP content

The effect of drying and steaming on the TAC and TP content was analysed after correcting for gain or loss in moisture after steaming and drying. Table IV depicts the effect of steaming and drying on TAC by FRAP analysis. A very high increase in TAC values was observed after steaming in all the leaves except Spinach leaves in which the TAC decreased by 9.9 μ mol TE. The TAC values of Mint leaves increased from 922.57 μ mol TE/100g to 7238.03 μ mol TE/100g, while the TAC of Amaranthus varieties increased on an average by 4182.3 μ mol TE/100g. On the contrary, drying resulted in a high loss of TAC in all the leaves. The loss varied from 65 percent in spinach leaves to 92 percent in curry leaves. Steaming increased the TAC of leaves at a higher percentage than FRAP analysis.

Steaming and drying decreased the TP values of curry leaves by 68.95mg GAE/100g and 645.03 mg GAE/100g respectively.

Contribution of Total Phenols to Total Antioxidant Capacity

The phenol constituent of the green leafy vegetables contributes more to the antioxidant properties of vegetables than ascorbic acid [21]. A wide variation was observed among the leaf varieties in the contribution of phenols to total antioxidant capacity.

The highest contribution was observed in fresh leaves where the percentage contribution ranged from 38.7 in Drumstick leaves to 13.2 in Mint leaves by ORAC assay and 55.3 percent in drumstick leaves to 13.5 percent in coriander leaves by FRAP assay(Figure II).

Both steaming and drying decreased the contribution of phenols to TAC, indicating a loss during processing. The margin of decrease varied considerable among the leaves. The percentage contribution of phenols decreased from 17.3 percent to 7 percent after steaming and 6.2 percent after drying in Amaranthus G. leaves, whereas the phenolic contribution decreased from 38.7 percent to 33.1 percent after steaming and to 5.6 percent after drying in drumstick leaves by ORAC assay. Similar variations were observed in FRAP assay as well.

CONCLUSION

Green leafy vegetables are rich source of antioxidants. All the varieties of green leaves selected showed a high level of antioxidant capacity by both ORAC and FRAP assays and are rich in phenols. Steaming and drying have a profound influence on the antioxidant content of the leaves. All leaves showed a significant increase in antioxidant capacity and total phenols after steaming and drying with a few exceptions like spinach and curry leaves. The total phenolics in leaves also showed a significant increase after steaming and drying, but for curry leaves whose phenolic content decreased after steaming. There are wide variations in the contribution of phenols to TAC in fresh leaves and in the contribution of phenols to TAC after drying and steaming indicating a change in the antioxidant profile after processing. Evaluating the effect of the chosen processing methods steaming would be the ideal method for processing green leafy vegetables.

REFERENCES

1. Hu, F (2003) Plant based foods and prevention of cardiovascular disease: an overview. Am J Clin Nutr , 78, 544S-551S

2. J. Chaudière, R. Ferrari-Iliou (2009) Intracellular from Antioxidants: Chemical to Biochemical Mechanisms. Food Chem Toxicol, Volume 37, Issues 9–10, September–October 1999, Pages 949-962
3. Basu, A. and Imrhan, V (2007) Tomatoes versus lycopene in oxidative stress and carcinogenesis: conclusions from clinical trials. European Journal of Clinical Nutrition, 61, 295-303.
4. Ahmad, N. And Mukhtar, H (1999) Green tea polyphenols and cancer : Biologic mechanisms and practical implications. Nutrition Reviews, 57, 78-83.
5. Hall, J.N. and Moore, S (2009) Global variability in fruit and vegetable consumption. American Journal of Preventive Medicine, 36, 402-409.
6. Rui Hai Liu (2003) Health benefits of fruit and vegetables are from additive and synergistic combinations of phytochemicals. American journal of clinical nutrition , 78, 5175-5205.



EVALUATION OF QUALITY CHARACTERISTICS OF MILLET BASED COOKIES

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ABSTRACT

Millet flour produces light, dry, delicate baked goods and a crust that is thin and buttery smooth. Hence an attempt was made to develop millet cookies, with exceptional sensory attributes and nutritional qualities. Cookies were prepared using five types of millets in different ratios. Cookies with 100% wheat flour serves as a control sample. The sensory evaluation was carried out by using nine point hedonic scale and nutrient values was calculated using a standard procedure. It was found that there was a significant difference among all variations with respect to all sensory parameters. It was also observed that overall acceptability to be mentioned was most liked by panel members was foxtail millet at 100% with all the millet based cookies. There was a significant level at 1% ($p < 0.01$) in energy, protein, fat, carbohydrate, and fibre. The breaking strength of the cookies ranged between 5961.42 and 3321.53; little millet 75% had the highest value (5961.42), while cookie sample, finger millet 75% had the least value (3321.43). It showed that there was no significant on weight, diameter, thickness and spread factor between the control and millet based cookies. Therefore, it is evident that the developed millet cookies, can be substituted instead of wheat flour, and this could make a significant contribution to the nutrient intake especially the malnourish children and as well as to the consumers .

KEYWORDS: *Millet Flour, Sensory Evaluation, Physical Parameters, Nutrient Values*

INTRODUCTION

Baked products such as cookies are very popular among all age groups, especially young children. Biscuits are important baked product in human diet, which are usually consumed with beverage and also used as weaning foods for infants (Ferial and Azza, 2011). Generally, wheat is one of the cereals used widely in most part of the world for the preparation of baked products such as cookie, pastries, bread etc. However, cookie from other cereals like rice, jowar, maize or millet is uncommon. Recently, millets are gaining importance because they can offer several nutraceuticals, health benefits and also being the powerhouse of nutrients. Cookies play a significant role in the baking industry due to variety in taste, texture and aroma. They are low moisture foods with longer shelf life, generally prepared out of refined wheat flour, fat and sugar. Cookies are high fat – food products and obtain texture and flavour characteristics from the shortening used. Cookies are nutritive snacks produced from unpalatable dough that is transformed into appetizing product through the application of heat in an oven Anozie, China, and Beleya (2014).

Refined wheat flour is a key ingredient for preparing cookies due to its gluten content. However, refined wheat flour is a product of refining that contains higher proportion of starch, low dietary fibre and minerals and the resultant cookies are characterized with low proteins, fat and mineral content. Therefore to improve its nutritive value, different variety of millet flour has been incorporated into refined wheat flour and whole wheat flour for the need better nutritive quality with the following objectives

- To evaluate quality characteristics of millet based cookies
- To find out the nutritional content of the developed cookies
- To find out the textural property of developed cookies.

METHODOLOGY

Development of cookies using millets

The composite flour was prepared by replacing wheat flour (WF) with various millets at 50, 70, and 100%. Millets such as Barnyard (Kuthiravalli), Foxtail millet (Thinnai), Little millet (Samai), Kodo millet and Finger millet (Ragi), was selected for the study and developed baked cookies using them. And whole wheat flour was used as control one.

Cookies Formulation

Cookies were prepared using five types of millets in different ratios and also without mixing with the whole wheat flour. The ingredients such as sugar, millet flour, whole wheat flour and fat were mixed thoroughly to form a dough. The dough was prepared and sheeted to a uniform thickness of 0.25 cm and cut into circular shapes of 5-cm diameter. The developed cookies were baked at 170°C for 15 min. Cookie prepared using 100% whole wheat flour was used as control. Baked cookies were tried out in different proportions with various millet flour and evaluated by trained panel members using a nine point hedonic scale.

Sensory Evaluation

The formulated cookies were evaluated by the trained panel members using a nine point hedonic scale. Sensory characteristics of developed cookies were evaluated for different sensory attributes by trained panel member. Each panelist indicated the extent of their likes/dislikes in terms of color, flavor, taste, crispiness; texture and overall acceptability for all samples were

assessed using nine point hedonic scales (Ackrabali and Maharaj, 2014). Hedonic scale was in the following sequence : like extremely-9, like very much-8, like moderately-7, like slightly-6, neither like nor dislike -5, dislike slightly-4, dislike moderately-3, dislike very much-2, dislike extremely-1, of the formulated cookies . The sensory scores for each parameter were subjected to statistical analysis and the mean scores were calculated.

Nutrient Analysis

The nutrient values such as energy, protein, carbohydrate, fat and fibre of developed cookies was calculated using a standard procedure.

Textural properties

Textural attributes like hardness (N), breaking strength (N), (peak breaking force), fracture force (N) and toughness(N-mm) of cookies were measured using Texture Analyzer (Model TA-Hdi stable Micro systems). The hardness of cookies was measured by using cylindrical stainless probe P2 (5mm dia). Texture Analyzer settings were kept same for all the tests (pre –test speed 1.0mm sec, test speed 3.0 mm sec , post test speed 10.0mm sec, distance 5mm, trigger type auto 50g and data acquisition rate 500pps). The individual sample of cookies was placed on the based plate and the probe was attached to the crosshead of the instrument. The least weight that caused the breaking of the cookies was regarded as the break strength of the cookies.

Physical Characteristics of Cookies

The baked cookies were determined for physical parameters such as diameter (D) and thickness (T), measured according to standard method, and the spread ratio (D/T) was calculated. The spread ratio was determined using a vernier caliper, which weight of cookies were determined by using electronic analytical weighing balance. Spread Ratio was calculated using the formula

$$\text{Spread Ratio} = \frac{\text{Diameter}}{\text{Thickness}}$$

(Akubor, 2004).

Statistical Analysis

The data obtained were statistically analyzed by using a statistical package for the Social Sciences, SPSS ver 17.0 and Agres Stat ver 3.1. Mean separation was done using Arithmetic mean and significance difference was accepted at 1% confidence level.

RESULTS AND DISCUSSION

The result of the Mean Scores of the developed millet cookies are presented in Table-I

TABLE –1
MEAN SCORES OF THE DEVELOPED MILLET COOKIES

Millet cookies –	Sensory Attributes					
	Colour	Flavour	Taste	Crispiness	Texture	Overall acceptability
Control	5.40± 0.61	6.30± 0.47	5.50± 0.70	6.15± 0.37	6.30± 0.47	6.05 ± 0.67
Barnyard						
50:50	6.40 ± 0.75	6.80± 0.41	5.30± 0.47	6.70 ±0.47	5.70± 0.66	6.18± 0.65
75:25	6.75 ± 0.44	6.80± 0.41	6.45 ± 0.51	6.80± 0.41	6.30 ± 0.47	6.62± 0.23
100	6.55 ± 0.51	6.75± 0.44	7.30 ± 0.47	7.40± 0.22	7.05± 0.22	7.01± 0.36
Foxtail						
50:50	6.65 ± 0.49	6.30± 0.47	5.70± 0.73	6.85± 0.75	7.00± 0.32	6.50± 0.52
75:25	7.20 ± 0.41	7.35± 0.49	7.85± 0.67	7.45 ±0.51	7.75± 0.64	7.52± 0.27
100	7.00 ± 0.00	7.25 ± 0.44	8.15± 0.67	7.70 ±0.66	7.30 ±0.47	7.48± 0.45
Little						
50:50	7.00± 0.00	7.20 ± 0.41	7.10± 0.64	7.35± 0.49	7.05± 0.22	7.14± 0.14
75:25	6.90± 0.31	7.20± 0.41	7.95± 0.60	7.25± 0.44	7.65 ±0.49	7.39± 0.41
100	6.90± 0.31	7.20± 0.41	7.95± 0.60	7.25± 0.44	7.65± 0.44	7.39± 0.41
Kodo						
50:50	7.10± 0.31	7.20 ± 0.41	5.95 ±0.60	6.60± 0.50	6.65 ± 0.49	6.70± 0.50
75:25	7.70± 0.73	7.55 ± 0.51	7.15± 0.75	7.35± 0.49	7.25± 0.44	7.40 ±0.22
100	7.10± 0.31	7.80± 0.62	7.80± 0.62	7.50± 0.51	7.10± 0.31	7.39± 0.30
Finger						
50:50	7.30± 0.47	7.40± 0.50	6.05 ±0.76	6.70 ± 0.47	6.45 ± 0.51	6.29 ± 0.67
75:25	7.70 ±0.47	7.30 ±0.57	8.00 ±0.65	8.10± 0.45	7.10 ±0.31	6.77 ± 0.29
100	7.80 ± 0.41	7.65 ±0.49	8.80 ±0.41	8.05 ±0.22	7.30± 0.47	7.33 ± 0.27

Table 1 represents the millet based cookies prepared with five varieties of millets with whole wheat flour at different ratios 50:50, 75:25, 100 percent millet. The mean scores for acceptability ranged from colour to texture. Means for colour scores exhibited significant variations in cookies with different ratios of different variety of millets ranged from 5.50± 0.61 to 7.80 ± 0.41. It was observed that the highest mean score for colour is finger millet. Finger millet 100% cookies has a similar colour like a chocolate cookies, it looks smooth and appealing. Perceptions of flavour are synthesis of taste and smell

impressions, along with texture and also influenced by appearance. Means for flavour scores exhibited significant variations in millet based cookies ranged from 6.30 ± 0.47 to 7.80 ± 0.62 . Taste is an important parameter when evaluating sensory attribute of food. Mean scores for millet based cookies shows a significant changes in taste scores of cookies were observed by varying level of 50%, 75% and 100% ranged from 5.30 ± 0.47 to 8.80 ± 0.41 . Finger millet (100%) has the highest mean score among the formulated millet based cookies, gives a nutty taste. Texture is a combine sensation of all the rheological and structural traits of the product perceptible by mechanical, tactile and where appropriate, visual and auditory receptors. Means for texture scores explained significant differences in millet based cookies ranged from 5.70 ± 0.66 to 7.75 ± 0.64 . The scores of overall acceptability ranged from 6.18 ± 0.65 to 7.52 ± 0.27 while the control group shows 6.05 ± 0.67 . It was observed that overall acceptability to be mentioned was most liked by panel members was finger millet at 100% among all the millet based cookies. The mean scores were not much significantly different in 50% and 75% in all the millet based Cookies. (Anju and Sarita, 2010) developed barnyard millet biscuits and compared their acceptability with foxtail millet flour and crude refined wheat flour (CRWF) and reported better acceptability for barnyard millet flour and foxtail millet flour over wheat biscuits.

The results of the nutrient content of developed cookies are depicted in Table 2.

TABLE -2
NUTRIENT CONTENT OF DEVELOPED MILLET COOKIES

Millet cookies	Energy Kcal/100g	Protein g/ 100g	Fat g /100g	Carbohydrate g /100	Fibre g / 100g
Control	431.87	14.02	73.41	81.29	1.90
Barnyard					
50:50	411.37	11.07	74.96	79.34	7.75
75:25	401.2	9.6	75.74	78.37	10.68
100	390.87	8.12	76.51	77.39	13.6
Finger					
50:50	425.37	11.62	73.21	82.59	2.75
75:25	422.12	10.43	73.12	83.24	3.18
100	418.87	9.22	73.01	83.89	3.60
Foxtail					
50:50	426.87	14.12	74.71	77.04	4.95
75:25	424.37	14.18	75.37	74.92	6.48
100	421.87	14.22	76.01	72.79	8.00
Kodo					
50:50	415.87	12.12	73.26	79.54	5.45

75:25	407.87	11.18	73.19	78.67	7.23
100	399.87	10.22	73.11	77.79	9.00
Little					
50:50	431.87	11.82	74.91	80.09	4.75
75:25	433.62	10.45	75.47	80.62	5.78
100	431.87	9.62	76.41	78.89	7.60
SE_D	6.68	0.68	0.98	0.95	0.71
CD (r)	13.85	1.41	2.04	1.97	1.48
CD (%)	18.8**	1.92**	2.77**	1.20**	13.56**
Grand mean	422.04	11.47	74.26	79.29	5.29

** Significant at 1% level, r-ratios

The above Table II depicted the nutritional values of the developed millet based cookies with wheat flour as control. Energy content was found to be more in little millet 75 percent, 433.62 K .cal. Protein content was found to be high in foxtail millet, 14.22g. Fat content turns out to be high in barnyard millet with 100 percent, 76.51g than the other millet based cookies. The carbohydrate content of finger millet is 83.89 g turn out to be the highest among the millet cookies. Fibre content was found to be the highest in barnyard millet cookies with 13.6 g in 100 percent. It is significant at 1% ($p < 0.01$) in energy, protein, fat, carbohydrate, and fibre. Cookies have become one of the most desirable snack for both youth and elderly people due to their low manufacturing cost, more convenience, long shelf-life and ability to serve as a vehicle for important nutrients (Akubor, 2003; Honda *et al.*, 2005).

The given table represents the textural and physical characteristics of the developed millet cookies and whole wheat flour as control.

TABLE- 3
TEXTURAL AND PHYSICAL PARAMETERS OF THE DEVELOPED COOKIES

Millet Cookies	Hardness	Fracturability	Weight	Diameter (mm)	Thickness (mm)	Spread ratio.
Control	5601.7	30.385	12.3	4.5	0.64	0.70
Barnyard						
50:50	5723.32	30.257	11.3	3.6	0.50	0.72
75:25	5468.32	27.972	11.2	3.8	0.52	0.73
100	4220.54	29.812	11.5	3.8	0.52	0.73
Foxtail						
50:50	5478.76	29.860	11.4	3.7	0.52	0.72
75:25	4893.54	27.386	11.5	3.9	0.53	0.73

100	4546.43	29.543	11.4	3.8	0.51	0.74
Little						
50:50	5756.65	29.632	11	3.6	0.50	0.72
75:25	5961.42	29.940	11.2	3.9	0.53	0.73
100	5143.27	29.674	11.3	3.9	0.53	0.73
Kodo						
50:50	4387.58	28.4	11.3	3.6	0.50	0.72
75:25	4876.82	27.139	11.7	3.9	0.53	0.73
100	4136.89	27.892	11.4	3.8	0.51	0.74
Finger						
50:50	4790.35	27.693	11	3.6	0.50	0.72
75:25	3321.53	26.631	11.4	3.8	0.52	0.73
100	4976.38	27.787	11.6	3.8	0.51	0.74
SE_D	158.31	0.69	1.08	0.63	0.04	0.07
CD (Tr)	328.33	1.43	2.24	1.31	0.09	0.15
CD (%)	3.14 ^{NS}	2.36 ^{NS}	9.86 ^{NS}	15.15 ^{NS}	8.20 ^{NS}	9.61 ^{NS}
Grand mean	5044.17	29.28	10.9	4.1	0.54	0.77

NS- Not Significant

The above Table 3 shows the physical properties of refined wheat flour as control and millet cookies using millets. The breaking strength of the cookies ranged between 5961.42 and 3321.53 ; Little millet 75% had the highest value (5961.42), while cookie sample ,finger millet 75% had the least value (3321.43). The breaking strength is referred to the force required to break the cookies. The factorability of the cookies varied from 30.385 to 26.631 , control sample recorded the highest and finger millet was found to be the least as compared to the other samples. From the literature, it was revealed that regarding thickness and in spread factor, did not influence much in physico chemical properties (Mahmood *et al.*, 2008). It showed that there was no significant on weight, diameter, thickness and spread factor between the control and millet based cookies. Regarding diameter and thickness, the control was found to be highest. It was observed that there was no change in spread factor as compared with the control one and millet cookies. Gluten influences the cookie diameter and spread onset time which is again dependent on the amount water available to the non – gluten constituents (Bram *et al.*,2008) .Sharma,) documented that the spread ratio of cookies increased as non wheat protein content increased

CONCLUSION

The results vividly showed that it could be possible to produce nutritious and acceptable cookies through the substitution of wheat flour with various types of millets. The high protein and fibre

contents of cookies made from millets such as foxtail millet, finger millet and barnyard millet substitution as well as the acceptability of the developed cookies attested to this fact. The results also showed that substitution with various types of millets did not alter the physical characteristics and acceptability of the cookie samples especially at 1% substitution level. In conclusion, the high protein and fibre contents of the cookies made with various types of millet flour substitution could bring a significant contribution by improving the nutritional status of the children and combat the malnutrition which is the burning issue like our country India.

REFERENCES

1. Anozie, G. O., China, M. A., & Beleya, E. A. (2014). Sensory evaluation and proximate composition of snacks produced from composite flour of *Discorea alata* and *Telfaira occidentalis* seed flours. *Journal of Home Economic Research*, 20, 100–108.
2. Ferial, M. A., & Azza, A. A. (2011). Effect of supplementation of Bambara groundnut (*Vigna subterranean* L.) flour on the quality of biscuits. *African Journal of Food Science*, 5, 376–383
3. Ackbarali, D.S. and Maharaj, R. (2014), Sensory Evaluation as a tool in determining acceptability of innovative products developed by undergraduate students in Food Science and Technology at the university of Trinidad and Tobago., *Journal of Curriculum and Teaching*, 3 (1) : 10 -27 .
4. Akubor PI (2004), Chemical composition, functional properties and baking potential of African breadfruit kernel and wheat flour blends , *Int. J. Food Sci. Technol.*39(2): 223-229.
5. Bram P, Edith W., Hans ,G., Krist of, B., and Jan, AD. (2008) The role of gluten in a sugar-snap cookie system: A model approach based on gluten–starch blends. *Journal of Cereal Science* 48 pp 863-869.



ADDRESSING ANAEMIA THROUGH CAULIFLOWER GREENS (BRASSICA OLERACEAL VAR BOTRYTIS)

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ABSTRACT

Anaemia is the condition of inadequate or impaired red blood cells. It is measured by low haemoglobin or haematocrit, affects nearly one-quarter of the world's population. The prevalence of anemia is highest in preschool children and adolescents. Poor immune function, behavioral changes, cognitive impairment and decreased work performance are the major symptoms of anemia. There is a negative effect on the performance of athletes due to anaemia. Iron deficiency anaemia can be treated by providing food supplements which are rich in iron. In the end stage of anaemia, energy metabolism starts to suffer and the person may not be able to work at full capacity. Hence the present study carried out with the objective to treat anaemia by supplementing cauliflower greens. They were categorized into two groups of 20 subjects each as experimental and control group. The experimental group was supplemented with cauliflower greens. Socio economic details, dietary pattern and lifestyle pattern of the subjects were studied using a structured interview schedule. Impact of supplementation was assessed by estimate the blood haemoglobin level of the subjects before and after supplementation.

KEYWORDS: Adolescence, Anaemia, Haemoglobin

INTRODUCTION

Anaemia is a deficiency in the size or number of red blood cells or amount of haemoglobin they contain, which limits the exchange of oxygen and carbondioxide between the blood and the tissue cells. There is a reduced number or volume of red blood cells along with too little haemoglobin in the blood. The red blood cells may be immature and therefore too large or too small to function properly^[1]. This is actually the last stage of iron deficiency and it represents the end point of a long period of iron deprivation. Iron deficiency is the most prevalent nutritional problem in the world. Approximately 1.3 billion individuals in the world suffer from anaemia. Countries in South Asia particularly India (50 to 90 per cent), Bangladesh (40 to 74 per cent) and Srilanka (58 per cent) have very high prevalence^[2]. There is a negative effect on physical and mental performance of athletes due to iron depletion, with or without anemia. Twenty five per cent of athletes are anaemic and it is necessary to provide nutritional counseling and iron supplementation for better performance^[3]. In the end stage of anaemia, energy metabolism starts to suffer and the person may not be able to work at full capacity. Hence the present study carried out with the objective to treat anaemia by supplementing cauliflower greens.

METHODOLOGY

Hundred adolescent girls belonging to the under graduate classes from a city college in Coimbatore was selected for this study. Blood haemoglobin level of all the subjects was estimated. Forty adolescent girls who had blood haemoglobin less than 12g/dl were selected for the supplementation study. They were categorized into two groups of 20 subjects each as experimental and control group. The experimental group was supplemented with cauliflower greens. Socio economic details, dietary pattern and lifestyle pattern of the subjects were studied using a structured interview schedule. Impact of supplementation was assessed by estimate the blood haemoglobin level of the subjects before and after supplementation.

RESULTS

All the selected subjects were distributed in the age group of 18 to 20 years. In general majority of the selected subjects were non vegetarians. They consumed non vegetarian foods only once a week or rarely, which was insufficient to correct their anaemic condition.

70 per cent of subjects both from experimental and control groups consume junk foods. These junk foods did not include any iron containing foods or iron absorption enhancing foods. They contributed only fat and carbohydrate.

Green leafy vegetable consumption pattern of selected subjects indicated that most of the healthful green leafy vegetables were not liked by the subjects.

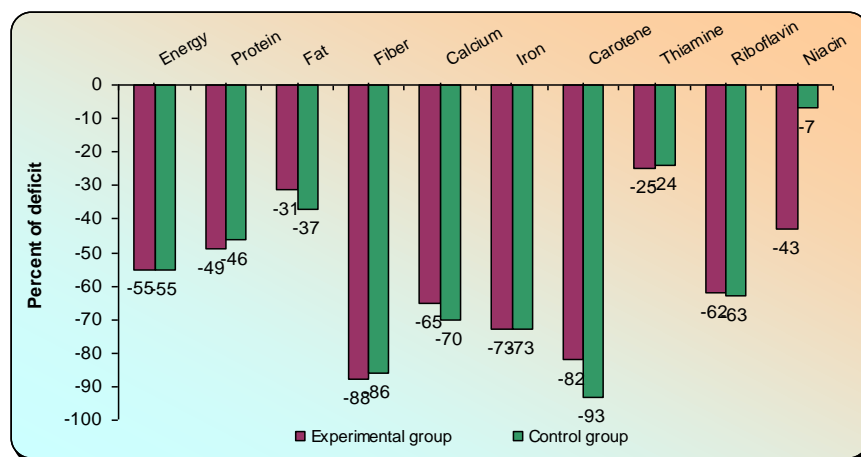


Figure 1

Mean Nutrient intake of Selected Subjects

Mean nutrient intake of the selected subjects reveal that all the nutrients were consumed in inadequate quantities (Figure 1).

The lifestyle habits of selected subjects shows that the major leisure activity among selected subjects was watching TV and they were not engaged in any kind of exercise.

The mean haemoglobin level of the experimental group had increased from 10.01 g/dl to 11.53 g/dl after supplementation of cauliflower greens for a period of 90 days. The increase was statistically significant at five per cent level (Figure 2).

Green leafy vegetables are good source of calcium, iron, β carotene, vitamin C and folic acid. It helps in correcting anaemia and reduces prevalence of anaemia ^[4]

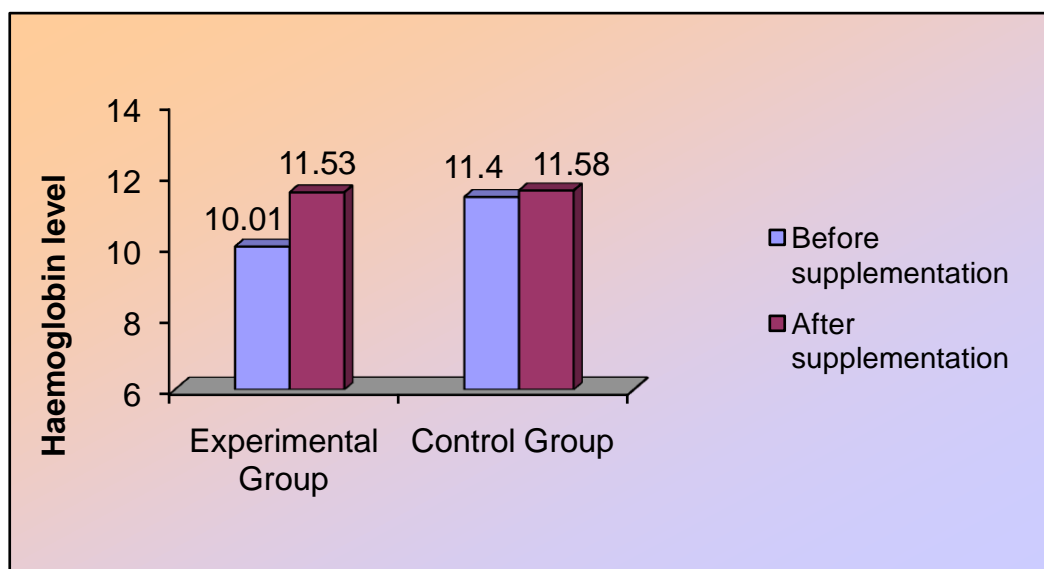


Figure 2

Mean Blood Haemoglobin Level of the Selected Subjects

CONCLUSION

Cauliflower green (*Brassica oleraceal var botrytis*) has a beneficial effect in improving the blood haemoglobin level of anaemic population and to increase the capability of adolescents.

REFERENCE

1. Georgieff M.K. 2008, Behavioral consequences of early iron deficiency, Nutrition Reviews, Vol.68: s45-s48
2. Nath G K. 2011, Haemoglobin and nutritional status of post adolescent girls on hostel diet, The Indian journal of nutrition and dietetics, vol.48:229-280
3. Dubnov G and Constantini NW.2004, Prevalence of iron depletion and anemia in top-level basketball players, Int J Sport Nutr Exerc Metab, 14 (1): 30-7
4. Nutrition Foundation of India. 2006, Nutrients in green leafy vegetables, Food and nutrition bulletin, vol.12: 311



DIETARY SUPPLEMENTATION AMONG IRULA ADOLESCENT GIRLS AND ITS EFFECT ON BIOCHEMICAL PROFILE

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ABSTRACT

India is the land to large number of indigenous people. The word tribe denotes a group of people living in primitive conditions. Tribes are one of the most exploited and deprived sections of the population. Irula or Irulas, a schedule tribe, are one of the major tribes of Tamil Nadu. Prevalence of undernutrition in women is high and due to iron deficiency tribal adolescent girls often suffer from anaemia. There is a general agreement that adolescent girls need iron supplementation which will be effective, preventive and curative. It is imperative to safeguard and protect the adolescent girls from malnutrition. Use of novel type of dietary supplements has a better strategy to overcome anaemia. The supplementation of iron rich foods will protect the health of the tribal adolescent girls. Five varied composition of supplementary mixes were formulated standardized and acceptability of the best combination of supplement mix was identified by memory evaluation with the help of 30 taste panelists. A sub sample of 60 anaemic tribal adolescent girls were selected constituting 30 subjects in each experimental and control group for dietary intervention. During mid morning under the supervision of the Headmistress the supplementary mix in powder form weighing 50 grams was distributed to the subjects along with the Amla weighing 25 to 30 grams to enhance the iron assumption. After supplementation there was an improvement in haemoglobin status among selected tribal adolescent girls which is significant at 1% level. It is observed that the significant improvement were noticed in Serum Iron, Total Iron Binding Capacity and Haematological parameters and from the t value it can interviewed that the improvement of Haematological parameter was significant at 1% level.

KEYWORDS: Tribes, Irula, Adolescent Girls, Haemoglobin, Anaemia, Supplementation.

INTRODUCTION

India is a home of almost more than half of the world's tribal population¹. According to India's census in 2001, there are 84.3 million scheduled tribes which is 8.2 per cent of the population². Today, the first and foremost problem for tribal communities in India is to earn and sustain livelihoods³. Irulas are one among the six primitive tribal groups and one of the poorest tribal communities with a population of 2.1 lakhs concentrated at Tamil Nadu. The name Irulas are derived from the Tamil word "Irul" meaning dark which refers to their skin tone^{4&5}. The nutritional status of the tribal people is poor because their diet is insufficient in quantity and poor in quality⁶. Dietary intake of the tribal girls are very poor and much below the Recommended Daily Allowances (RDA) and iron deficiency is the major cause of anaemia in tribal communities. The main cause is due to poverty^{7,8,9&10}. Anaemia is still one of India's major public health problems, especially among adolescent girls¹¹. Dietary modification involves increased iron intake, by increasing total food intake and consumption of locally available iron rich foods and dietary practices favouring iron absorption. One way to improve the absorption of iron food is to increase the intake of vitamin C¹². Inclusion of weekly supplementation of iron has a effective effect¹³. It is imperative to safeguard and protect the adolescent girls and to improve the overall health of the tribal population. The supplementation of iron rich foods will promote the health of the tribal adolescent girls by controlling the incidence of nutritional deficiency disorders. Thus the present study aimed at estimation of haemoglobin level among selected subjects, develop a product suitable for dietary intervention and implement and study its impact.

METHODOLOGY

The area chosen for the current study was Tholampalayam panchayat, Karamadai block, Coimbatore city of Tamil Nadu state. The haemoglobin level was estimated for all the 146 tribal adolescent girls in the age group of 13-15 and 16-18 years. A subsample of 60 moderate and mild anaemic adolescent tribal girls in the age group of 13-17 years were selected for dietary supplementation. The iron rich ingredients such as rice flakes (*Oryza sativa*) (40g), whole wheat (*Triticum aestivum*) (10g), roasted Bengal gram (*Cicer arietinum* (15g), dry coconut (*Cocos nucifera*) (10g), white gingelly seeds (*Sesamum indicum*) (10g) and cane jaggery (*Saccharum officinarum*) (15g) were included. Each ingredient except jaggery was roasted separately and powdered to improve the sensory attributes. All the powdered ingredients at room temperature were thoroughly mixed. Before initiating supplementation as per the recommendation of the physician deworming tablet (Albendazole 400mg) was administered to the sub sample for an effective absorption of iron. Under the supervision of the headmistress, the supplementary mix in the powder form (50g) was distributed to the subjects during mid morning for a period of seven months. For weekends and on holidays it was packed and distributed to the subjects. One amla fruit weighing 25 to 30g containing 150 to 180mg vitamin C was given along with the supplement everyday.

A sub sample of 15 adolescent tribal girls each in experimental and control group were selected for further biochemical analysis and carried out by Sysmah auto haem procedure by drawing 5ml of blood.

RESULTS

A. Mapping of anaemia among adolescent girls by biochemical analysis

The anaemic status of selected tribal adolescent girls aged 13-15 and 16-18 years are shown in Table 1.

TABLE 1
ANAEMIC STATUS OF SELECTED TRIBAL ADOLESCENT GIRLS (N: 146)

Age (years)	Anaemic					
	Mild (11-11.9g/dl)		Moderately (8-10.9g/l)		Severely (<8g/dl)	
	No.	%	No.	%	No.	%
13 – 15 (n: 58)	34	58.6	22	38.0	2	3.4
16 – 18 (n: 88)	63	71.6	20	22.7	5	5.7

All the adolescent girls in the study group were found to be anaemic. It is obvious that both in the 13-15 years and 16-18 years maximum of 58.6 per cent and 71.6 per cent were mild anaemic respectively. Followed by this moderate anaemia was noted among 38 per cent of the 13-15 years adolescent girls and 22.7 per cent among 16-18 year adolescent girls. A minimum of 3-6 per cent of the adolescent girls were affected by severe anaemia. Similar to the present study that the prevalence of anaemia among adolescent girls were more common ranging from 59.8 – 61 per cent¹⁴.

The overall prevalence of anaemia among adolescent girl students of Assam was as high as 71.5 per cent which coincides with the present study¹⁵.

B. Dietary Supplementation

1. Quality Assessment of Supplementary Mix

a. Composition of the selected mix

The mix with 40g rice flakes, 10g whole wheat, 15 roasted bengal gram, 10g dry coconut, 10g white gingelly seeds, 15g cane jaggery had the highest score and was confirmed as the most acceptable combination. Hence with a ratio of 4:1:1.5:1:1:1.5 was chosen for supplementation of dietary intervention programme.

b. Composition and cost of the accepted mix

The composition and cost of the most accepted iron rich supplementary mixare shown in Table 2.

TABLE 2
COMPOSITION AND COST OF THE MOST ACCEPTED IRON RICH
SUPPLEMENTARY MIX (100G)

Food stuffs	Quantity (g)	Cost (Rs.)
Rice flakes (<i>Oryza sativa</i>)	40	1.60
Whole wheat (<i>Triticum aestivum</i>)	10	0.29
Roasted Bengal gram (<i>Cicer arietinum</i>)	15	0.99
Coconut dry (<i>Cocos nucifera</i>)	10	1.40
White gingelly seeds (<i>Sesamum indicum</i>)	10	1.40
Jaggery cane (<i>Saccharum officinarum</i>)	15	0.60
Total	100	6.28

The cost of gingelly seeds and coconut dry for 10g each was Rs.1.40 which was the highest among the selected ingredients. Rice flakes costed only Rs.1.60 for 40g. Cost of roasted Bengal gram was 0.99 paise for 15g and jaggery cane costed 0.60 for 15g. Thus the total food cost of the most accepted iron rich supplementary mix for 100g was Rs.6.28. The cost includes only the cost of ingredients if it is made by the individuals.

c. Nutrient contribution of the most accepted supplementary mix

The nutrient contribution of most accepted supplementary mix is shown in TableLXII and Figure 1.

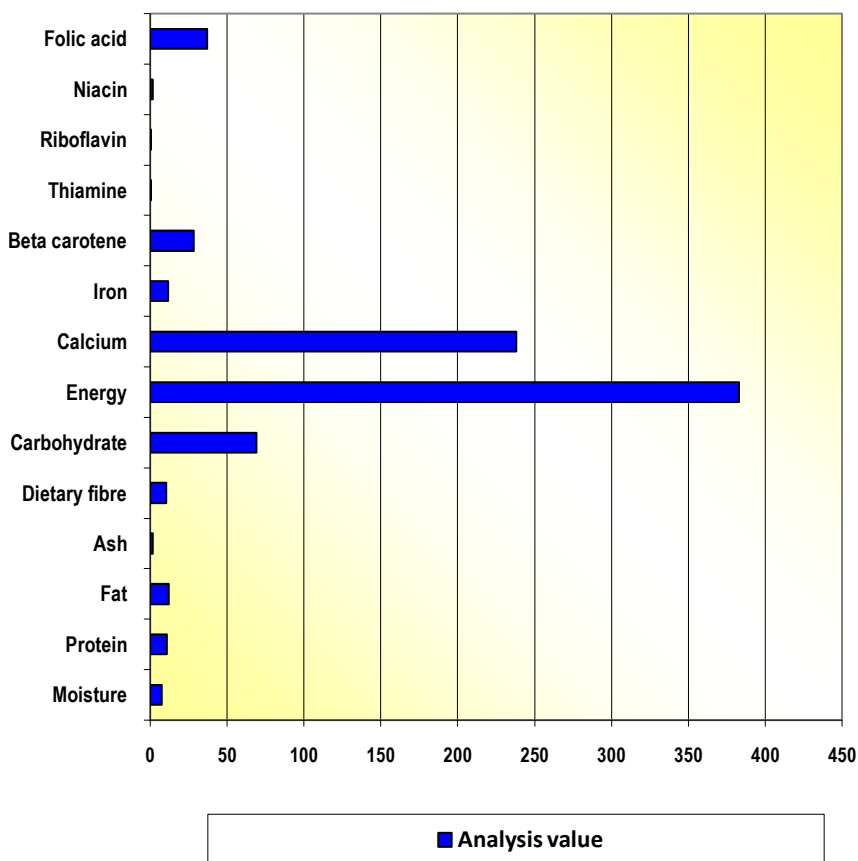


Figure 1

Nutrient Contribution of the Most Accepted Supplementary Mix

The accepted supplementary mix of 100g provided 11.5mg of iron. The analysed energy value was 383 kcal. The analysed value of protein was 10.9g, fat 12g, dietary fibre 10.5g, beta carotene 28.2 g and thiamine 0.23mg. The analysed value of folic acid was 37.2 g and carbohydrate 69.3g. Amla (*Embllica officinalis*), a berry found in abundance in tropical countries and a rich source of vitamin C (600mg/100g) was selected to enhance the iron absorption. One amla fruit weighing 25 to 30g containing 150 to 180mg vitamin C was given along with the supplement every day.

B. Impact of Intervention Programmes

The supplementation was undertaken to improve the nutritional status of anaemic tribal adolescent girls. The impact of intervention programme was assessed by biochemical parameters such as haemoglobin level, serum iron, total iron binding capacity, serum ferritin, packed cell volume, mean corpuscular volume, mean corpuscular haemoglobin and mean corpuscular haemoglobin concentration, health and dietary knowledge, attitude and practice of anaemic adolescent girls and anaemic adult women.

1. Haematological Status

a. Haemoglobin level

Impact of intervention programme on haemoglobin status among selected tribal adolescent girls and adult women shown in Table 3.

TABLE 3
IMPACT OF INTERVENTION PROGRAMMES ON HAEMOGLOBIN STATUS
AMONG SELECTED TRIBAL ADOLESCENT GIRLS (N: 60)

Haemoglobin status (g/dl)	Mean \pm SD		't' value
	Before	After	
Supplementation (n:30)	9.89 \pm 1.19	12.37 \pm 0.46	16.38**
Control (n:30)	10.26 \pm 1.03	10.24 \pm 1.04	1.56 ^{NS}

**Significant at 1% level; NS-Not significant

It is clear from the statistical analysis that due to the intervention programme there is an improvement in the haemoglobin status among selected tribal adolescent girls which is significant at one per cent level.

b. Biochemical Parameters

Following table 4 depicts the impact of intervention programme on biochemical parameters among selected tribal adolescent girls.

TABLE 4
IMPACT OF INTERVENTION PROGRAMME ON BIOCHEMICAL PARAMETERS
AMONG SELECTED TRIBAL ADOLESCENT GIRLS (N: 30)

Biochemical parameters	Reference value	Experimental Group A (n:15)			Control (n:15)		
		Mean \pm SD		't' value	Mean \pm SD		't' value
		Before	After		Before	After	
Serum iron (μ g/dl)	65 – 130	52.13 \pm 3.70	62.20 \pm 4.60	15.64*	48.37 \pm 3.44	48.00 \pm 3.48	0.35 ^{NS}
Total Iron Binding Capacity (μ g/I)	250 – 400	457.27 \pm 25.81	334.33 \pm 23.77	19.12*	424.00 \pm 11.63	427.20 \pm 10.45	0.76 ^{NS}

Serum ferritin (ng/mL)	10 – 120	8.67±1.00	14.21±1.9 4	13.64* *	7.07±0.99	7.01±0.99	0.16 ^{NS}
Packed cell volume (%)	35 – 40	28.42±1.85	35.49±2.0 4	21.87* *	22.17±0.79	21.97±0.70	0.73 ^{NS}
Mean corpuscular volume (c μ)	82 – 92	76.23±1.90	82.90±3.3 4	12.00* *	70.55±1.22	70.03±1.20	1.12 ^{NS}
Mean corpuscular haemoglobin (Pg)	29.5±2.5	23.93±1.36	28.09±1.0 4	10.47* *	23.37±1.54	22.93±1.47	0.78 ^{NS}
Mean corpuscular haemoglobin concentration (%)	35± 3	27.56±1.50	33.21±1.8 9	20.31* *	27.57±2.03	26.05±2.24	0.01 ^{NS}

**Significant at 1% level; NS-Not significant

It is observed that the significant improvements were noticed in serum iron, total iron binding capacity, serum ferritin, packed cell volume, mean corpuscular volume, mean corpuscular haemoglobin and mean corpuscular haemoglobin concentration among tribal adolescent girls after giving iron supplement and from the 't' value it can be inferred that the improvement of haematological parameters was significant at one per cent level.

CONCLUSION

India is the home to large number of indigenous people, who was still untouched by the lifestyle of the modern world. The nutritional status of the tribal people is poor and thereby overall health is inferior. Several intervention programmes have been initiated to combat the micronutrient deficiencies. The most commonly adopted strategy is the dietary supplementation which will be effective, preventive and curative. While research on the situation analysis of anaemic adolescent girls is needed, it is equally imperative explore intervention strategies which are acceptable, affordable and reduce anaemia in these girls in the long term. Thus there was an improvement in the haemoglobin status of adolescents after the administration of formulated iron rich supplementary mix. Hence it is need of the hour to carry out national wide survey among tribes pertaining to communicable and non-communicable diseases and ensure income generating programmes to the tribes for their better livelihood.

REFERENCES

1. http://tribal.nic.in/final_content.pdf.
2. Office of the Registrar General and Census Commissioner, 2001, Annual Report Ministry of Tribal Affairs (MoTA), Govt of India.
3. Mahajan, S., Sharad, Newale, M., and Pednekar, P., 2000, Orchard development gives tribal communities new chances, The BAIF Journal, Vol. 20, No.1, Pp.3-6.

4. www.indianetzone.com
5. Sasirega, S., 2010, A study on social life of Irula women in Chengalpet of Tamilnadu, Published by Christian University, Bangalore, P.1-34.
6. Indira,S. and Chattopadhyaya, K.P., 2001, The tribal problem and its solution, Eastern Anthropology, Vol. 8, No.1, Pp.99-103.
7. Milton, K., 2000, Hunter-gatherer diets - a different perspective, Am J Clin.Nutr., Vol.71, No.3, Pp.665–667.
8. Bentley, M.E., Griffiths, P.L., 2003, The burden of anaemia among women in India, Eur.J.Clin.Nutr., Vol.57, No.1, Pp.52-60.
9. Deka, S., 2011, Health and Nutritional Status of the Indian Tribes of Tripura and Effects on Education, Health Science, Vol.3, No.3, Pp.3-4.
10. Vyas, S. and Choudhry, M., 2005, Tribal development in 20th century, Shiva Publishers and Distributors, Udaipur, P.200.
11. Gupta, V.K., Maria, A.K., Kumar, R., Bahia, J.S. and Arora, S., 2011, To study the prevalence of anaemia in young males and females with respect to the age, body mass index (bmi), activity profile and the socio-economic status in rural Punjab, Journal of Clinical and Diagnostic Research, Vol.5, No.5, Pp.1020-1026.
12. Patil, S.V., Durgawale, P.M., Kakade, S.V. and Dighe, S., 2014, An assessment of interventional strategies for control of anemia among adolescent girls in an urban slum of Karad, Dist. Satara, Maharashtra, Al Ameen J Med Sci., Vol.7, No.3, Pp.195-200.
13. Deshmukh, P.R., Garg, B.S. and Bharambe, M.S., 2008, Effectiveness of weekly supplementation of iron to control anaemia among adolescent girls of Nashik, Maharashtra, India, J Health PopulNutr., Vol.26, No.1, Pp.74-78.
14. Dutt, R., Patil, S., Joshi, S., Mhatre, R. and Ramdev, 2009. Prevalence of anaemia among adolescent girls in rural area of Raigad District, Maharashtra, Ind. J. Prev. Soc. Med., Vol.40, No.3,4, Pp.144-146.
15. Sharma, S.K., Narain, K., Devi, R.K., Mohapatra, P.K., Phukan, R.K. and Mahanta, J., 2012. Haemoglobinopathies – major associating determinants in prevalence of anaemia among adolescent girl students of Assam, India, WHO South-East Asia Journal of Public Health, Vol.1, No.3, Pp.299-308.



ORGANOLEPTIC AND NUTRITIVE EVALUATION OF MICRONUTRIENT RICH PROTEIN SHAKE DEVELOPED USING QUINOA (CHENOPODIUM QUINOA)

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ABSTRACT

Worldwide, there are approximately one billion people who have chronic inadequate intake of protein. Protein deficiency has adverse effects on the quality of life and is essential across all age groups. In view of this, an attempt was made to develop and evaluate a functional protein shake enhanced with micronutrients for people suffering from protein deficiency and to support athletes for their increased requirement for protein. Quinoa was selected as the functional ingredient as it is a complete protein with high percentage of lysine. The protein premix powder was developed using skimmed milk powder, quinoa (*Chenopodium quinoa*), ragi malt (*Eleusine coracana*) (V1=20:50:30, V2=30:40:30, V3=40:30:30) and were compared with control (T0). The three variations were incorporated with pumpkin seeds, sesame seeds and watermelon seeds which are rich sources of zinc, in different proportions (5%, 10%, and 15%) served as treatments T1, T2 and T3 respectively. The products were also organoleptically evaluated by using 9-point hedonic scale, out of which V3T1 received the highest score. Subsequently, the standard and V3T1 were subjected to proximate analysis to obtain the results. The standard had ash (77.12%), moisture (0.87%), protein (19.7g), fat (3.4g), dietary fibre (11.38g) and iron (1.8mg) content per 100g. V3T1 had ash (86.97%), moisture (0.71%), protein (21.6g), fat (4.0g), dietary fibre (23.9g) and iron (4.9mg) content per 100g. In conclusion, it was observed that in comparison with standard preparation (T0), variation (V3T1) which was selected after sensory evaluation was found to be high in all the nutrients. The product being gluten-free, vegetarian and economical can serve to a wider range of population.

KEYWORDS: Worldwide, Approximately, Inadequate, Micronutrients

INTRODUCTION

Malnutrition remains a major cause of morbidity and is the most common worldwide cause of death in children who are less than five years of age. The disease accounts for 60% of all childhood mortality in developing countries. Nearly half of all deaths in children under 5 are attributable to under nutrition, translating into the loss of about 3 million young lives a year (UNICEF, 2015).

The metabolic demand for protein in endurance-trained adults on a higher volume training day is greater than their sedentary peers. A higher protein intake ($1.2\text{--}1.4\text{ g}\cdot\text{kg}^{-1}\cdot\text{d}^{-1}$) has been recommended for endurance athletes compared with healthy non-exercising individuals based primarily on nitrogen balance methodology (Kato *et al.*, 2016).

Recent evidence suggests two to three times the RDA for protein intake may be optimal to enhance fat-free mass during periods of caloric restriction (Murphy *et al.*, 2015) which may be commonly practiced among athletic populations to achieve a body composition more favourable for performance. Investigation of dietary intakes for various youth age groups suggests that intakes this high are often achieved in normal dietary patterns (Jeukendrup *et al.*, 2011), which indicates intake is sufficient to meet the elevated demands.

More and more products each year are being released that tout the “high-protein” label and consumers are responding favourably to them. With the recent trends in health and wellness, those looking to consume nutrient-dense foods and building muscle have sought protein-fortified snacks and beverages.

Quinoa (*Chenopodium quinoa*) has the high concentration of protein ranging from 13.8 – 21.9%. Due to the high content of essential amino acids, quinoa is considered the only plant food that provides all essential amino acids, which are extremely close to human nutrition standards established by The Food and Agriculture Organization (FAO). The high nutritional value, medicinal properties, and gluten free quality of quinoa may benefit several at-risk consumer populations, including children, the elderly, high-performance athletes, lactose intolerant consumers, osteoporosis-prone women, and people with anemia, diabetes, dyslipidaemia, obesity, or celiac disease (Vega-Galvez, *et al.*, 2010).

MATERIALS AND METHODOLOGY

Procurement of raw material

The present study was designed to develop a protein shake enriched with micronutrients. Good quality ingredients required for the development of the product were procured from local convenience stores. All the ingredients were stored in air tight containers and were kept at room temperature.

Formulation of protein shake

The standardized formula (*Developed at the Wisconsin Center for Dairy Research, University of Wisconsin-Madison, California Polytechnic State University & Proliant, Inc.* ©2014 U.S. Dairy Export Council.) was modified for the preparation of nine sets of premix powder.

TABLE 1
STANDARDISED FORMULA

Ingredients	Amount (g)
Skimmed milk powder	42
Whey protein concentrate (35% protein)	20
Oat bran	15
Cocoa powder	3
Fructose	20

TABLE 2
FORMULATION OF PROTEIN PREMIX POWDER

INGREDIENTS	V1			V2			V3		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Skimmed milk powder	20	20	20	30	30	30	40	40	40
Quinoa	50	50	50	40	40	40	30	30	30
Ragi malt	30	30	30	30	30	30	30	30	30
Fructose	8	8	8	8	8	8	8	8	8
Cocoa powder	5	5	5	5	5	5	5	5	5
Pumpkin seeds	5	10	15	-	-	-	-	-	-
Sesame seeds	-	-	-	5	10	15	-	-	-
Watermelon seeds	-	-	-	-	-	-	5	10	15

PROCESSING OF RAW MATERIAL

Processing of Quinoa: Quinoa seeds were cleaned and washed with cold water with physical abrasion prior to thermal processing, to reduce the saponin content. The washed seeds were dried in the oven for 20 minutes, then were roasted on a low flame in an aluminium pan and then coarsely grounded (Repo-Carrasco-Valencia *et al.*, 2010).

Processing of Ragi: Ragi seeds were washed 5 times and soaked in water for 5 hours. Excess water was drained, seeds were tied in a muslin cloth and 5 kg weight was kept on it. These seeds were germinated at $27 \pm 3^\circ\text{C}$ for 24hr and dried in shade for 2 days. The malted ragi seeds were grounded into flour by using the electric grinder (Desai *et al.*, 2010).

Processing of Pumpkin seeds, Sesame seeds and Watermelon seeds: The seeds were roasted and coarsely grounded.

Preparation of premix powder

Weigh all the ingredients into a bowl, then dry blend into a homogenous powder. Store in an air tight container.

Sensory Evaluation

The organoleptic characteristics of the samples were evaluated by semi-trained panellists using nine point Hedonic scale with corresponding descriptive terms ranging from 9 (like extremely) to 1 (dislike extremely) (Jones *et al.*, 1955).

Proximate Analysis

Ash, moisture, protein, fat, total dietary fibre and iron were determined according The Association of Analytical Communities (AOAC) (2000).

Statistical Analysis

Data analysis was undertaken using Microsoft excel and minitab. The data obtained from sensory evaluation was statistically analysed by ANOVA. Mean and standard deviation was done for sensory and proximate analysis.

RESULTS AND DISCUSSION

TABLE 3
MEAN SENSORY ATTRIBUTE SCORES OF DEVELOPED PRODUCTS

Variations	Sensory Scores									
	Appearance		Colour		Odour		Texture		Taste	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
T0	8.36	0.9	6.48	1.5	7.16	1.7	6.40	1.6	5.96	1.2
V1T1	6.76	1.0	6.04	1.6	5.68	1.8	6.52	1.4	5.32	2.0
V1T2	6.20	1.2	6.24	1.3	5.60	1.4	5.44	1.5	4.88	1.4
V1T3	6.04	1.2	6.72	1.2	5.88	1.2	5.36	1.4	4.60	1.3
V2T1	5.92	1.2	6.92	1.0	5.72	1.4	5.40	1.9	5.52	1.9
V2T2	6.32	1.3	6.76	1.1	6.04	1.6	6.16	1.7	5.96	1.3
V2T3	6.88	0.9	6.76	0.9	6.68	1.2	6.64	1.2	6.40	1.7
V3T1	7.04	1.2	6.88	0.9	6.40	1.2	6.80	1.0	6.64	1.2
V3T2	6.72	1.0	5.40	1.9	5.84	1.1	6.44	1.6	6.36	1.6
V3T3	6.48	1.6	6.32	1.5	5.88	1.1	6.20	1.5	5.08	1.9
F-Test	9.04*		3.06*		3.17*		3.30*		4.95*	
SE±	0.2324		0.2698		0.3561		0.3633		0.4450	
CD	0.6442		0.7478		0.9871		1.0070		1.2335	

* Significant at 5% Level,

SE: Standard error,

CD: Critical difference

The above table 3, shows the mean sensory attribute scores of the developed products. It was evident from the findings that the mean sensory scores of appearance was found to be the highest in T0 (control) (8.36 ± 0.9) followed by V3T1 (7.04 ± 1.2) and V1T1 (6.76 ± 1.0). However, the least score was observed in V2T1 (5.92 ± 1.2). In relation to colour, V2T1 (6.92 ± 1.0) received the highest score followed by V3T1 (6.88 ± 0.9) and V2T2 (6.76 ± 1.1), V2T3 (6.76 ± 0.9) while V3T2 (5.40 ± 1.9) received the least score. The mean sensory scores of odour was highest in T0 (control) (7.16 ± 1.7) followed by V2T3 (6.68 ± 1.2) and V3T1 (6.40 ± 1.2), lowest in V1T2 (5.60 ± 1.4). In terms of texture, the highest mean score was observed in V3T1 (6.80 ± 1.0) followed by V2T3 (6.64 ± 1.2) and V1T1 (6.52 ± 1.4) while the least was observed in V1T3 (5.36 ± 1.4). The mean sensory score of taste revealed that V3T1 (6.64 ± 1.2) was highest followed by V2T3 (6.40 ± 1.7) and V3T2 (6.36 ± 1.6). However, V1T3 (4.60 ± 1.3) scored the least. The data subjected for Analysis of Variance (ANOVA) indicated that there was a significant difference in the mean scores of sensory attributes between the variations ($p < 0.05$).

The result was supported by the findings of a research study (Deželak *et al.*, 2014) where the retro nasal odour perception in quinoa beverage was less acceptable because of the presence of volatile compounds, presumably pyrazines. In a similar study, it was concluded that F1 was perceived as having significantly more desirable flavour and aroma than with higher concentrations of quinoa flour (F2 and F3), which could be attributed because consumers are not familiarized with the taste of quinoa (Curti *et al.*, 2017). The results agreed well with (Bianchi *et al.*, 2015) who also found that the higher the proportion of quinoa in a product the lower the flavour acceptance. It is relevant to point out that the addition of quinoa flour effectively adjusted the sensory perception.

TABLE 4
MEAN SENSORY SCORES OF OVERALL ACCEPTABILITY OF DEVELOPED PRODUCTS

No.	Treatment	Overall Acceptability Scores	
		Mean	SD
1	TO	6.28	1.3
2	V1T1	5.48	2.0
3	V1T2	4.80	1.6
4	V1T3	5.04	1.5
5	V2T1	5.56	1.4
6	V2T2	6.04	1.2
7	V2T3	6.80	1.1
8	V3T1	7.00	1.0
9	V3T2	6.36	1.6
10	V3T3	5.68	1.1
F-Test		6.45*	
SE \pm		0.5079	
CD		1.4078	

* Significant at 5% Level, SE: Standard error, CD: Critical difference

The above table 4, reveals the mean sensory scores of overall acceptability of the developed products. Results indicated that the highest overall acceptability score was found in V3T1

(7.0±1.0) followed by V2T3 (6.80±1.1) and V3T2 (6.36±1.6). However, the least score was found in V1T2 (4.80±1.6). Statistical analysis of the data indicated that the overall acceptability mean scores between all the variations was found to be significant at 5% level ($F=6.45^*$). It depicts that the sensory score was slightly declined when Quinoa was incorporated in higher amounts (40-50%) in the protein shake. A study was conducted by (Diaz *et al.*,) 2015 where it was examined the impact of Andean grains like Quinoa on the sensory and physical properties of corn-based extruded snacks, it stated that incorporation of up to 35% quinoa was acceptable.

Table 4
Proximate and Mineral Composition

Nutrients	Control (T0)	V3T1
	Mean±SD	Mean±SD
Total Ash%	77.07±0.19	86.92±0.12
Moisture %	0.87±0.002	0.71±0.002
Protein (g)	19.66±0.05	21.56±0.05
Fat (g)	3.41±0.01	4.00±0.01
Total Dietary fibre (g)	11.37±0.02	23.90±0.05
Iron (mg)	1.79±0.005	4.90±0.05

On the basis of sensory evaluation, T0 (control) and the most acceptable variation V3T1 having the composition (40:30:30:5) of skimmed milk powder, quinoa, ragi malt and watermelon seeds respectively, were analysed for their proximate and mineral composition.

The above table 4 depicts that V3T1 has higher nutritive value when compared to T0 (control). The protein, fat, dietary fibre, and iron content was increased in V3T1 as compared to T0 (control), this is due to incorporation of functional ingredients quinoa and watermelon seeds.

CONCLUSION

Of all the variations, the most acceptable variation V3T1 had the highest mean sensory score for texture (6.80±1.0), taste (6.64±1.2) and overall acceptability (7.0±1.0). It was found to be nutrient rich, having macro and micro nutrient content (Total Ash%=86.92±0.12, Moisture%=0.71±0.002, Protein=21.56±0.05, Fat=4.00±0.01, Dietary fibre=23.90±0.05 and Iron=4.90±0.05). The protein shake developed being gluten-free, vegetarian and economical can serve to a wider range of population. Hence, it was concluded that the protein shake could be recommended for supplementation to protein deficit groups and the ones with increased protein requirement.

REFERENCES

AOAC Official methods of analysis (2000)

Bianchi, F., Rossi, E. A., Gomes, R. G., & Sivieri, K. (2015). Potentially synbiotic fermented beverage with aqueous extracts of quinoa (*Chenopodium quinoa* Willd) and soy. *Food Science and Technology International*, 21(6), 403-415.

- Curti, c. A., Vidal, p. M., Curti, r. N., & Ramón, a. N. (2017). Chemical characterization, texture and consumer acceptability of yogurts supplemented with quinoa flour. *Food science and technology*, 37(4), 627-631.
- Desai, A. D., Kulkarni, S. S., Sahoo, A. K., Ranveer, R. C., & Dandge, P. B. (2010). Effect of supplementation of malted ragi flour on the nutritional and sensorial quality characteristics of cake. *Adv J Food Sci Technol*, 2(1), 67-71.
- Deželak, M., Zarnkow, M., Becker, T., & Košir, I. J. (2014). Processing of bottom-fermented gluten-free beer-like beverages based on buckwheat and quinoa malt with chemical and sensory characterization. *Journal of the Institute of Brewing*, 120(4), 360-370.
- Diaz, J. M. R., Suuronen, J. P., Deegan, K. C., Serimaa, R., Tuorila, H., & Jouppila, K. (2015). Physical and sensory characteristics of corn-based extruded snacks containing amaranth, quinoa and kañiwa flour. *LWT-Food Science and Technology*, 64(2), 1047-1056.
- Jeukendrup, A., & Cronin, L. (2011). Nutrition and elite young athletes. In *The Elite Young Athlete* (Vol. 56, pp. 47-58). Karger Publishers.
- Jones, L. V., Peryam, D. R., & Thurstone, L. L. (1955). Development of a scale for measuring soldiers' food preferences. *Journal of Food Science*, 20(5), 512-520.
- Kato, H., Suzuki, K., Bannai, M., & Moore, D. R. (2016). Protein requirements are elevated in endurance athletes after exercise as determined by the indicator amino acid oxidation method. *PloS one*, 11(6), e0157406.
- Murphy, C. H., Hector, A. J., & Phillips, S. M. (2015). Considerations for protein intake in managing weight loss in athletes. *European journal of sport science*, 15(1), 21-28.
- Repo-Carrasco-Valencia, R. A., Encina, C. R., Binaghi, M. J., Greco, C. B., & Ronayne de Ferrer, P. A. (2010). Effects of roasting and boiling of quinoa, kiwicha and kañiwa on composition and availability of minerals in vitro. *Journal of the Science of Food and Agriculture*, 90(12), 2068-2073.
- UNICEF, *Progress for Children Beyond Averages: Learning from the MDGs*, New York, 2015
- Vega-Gálvez, A., Miranda, M., Vergara, J., Uribe, E., Puente, L., & Martínez, E. A. (2010). Nutrition facts and functional potential of quinoa (*Chenopodium quinoa willd.*), an ancient Andean grain: a review. *Journal of the Science of Food and Agriculture*, 90(15), 2541-2547.
- Wisconsin Center for Dairy Research, University of Wisconsin-Madison, California Polytechnic State University & Proliant, Inc. ©2014 U.S. Dairy Export Council. 'Standard formula'



ROLE OF NUTRITION IN THE HOLISTIC DEVELOPMENT OF THE SELECTED HIV INFECTED CHILDREN

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ABSTRACT

The devastating demographic social and economic impact of HIV/AIDS pandemic continues to pose a huge challenge and burden to the world; since its emergence over 25years ago. In the last quarter of a century human immuno deficiency virus infection and acquired immuno deficiency syndrome (AIDS) has become a global health, social and economical concern. The HIV/AIDS is not confined to any one class, community, religion, age group, sex or profession. According to Indian Health Organization (IHO), women and children are believed to be more prone to AIDS. Many children experience early and devastating effects of HIV on the nervous system, with loss of developmental milestones or abilities and motor problems such as spasticity. The present study was carried out in fifty HIV infected children from Coimbatore district. Socio-demographic characteristics of the children, anthropometric data such as body weight, height, BMI were calculated. In order to assess the holistic development of the children nutritional assessment, tests for cognitive emotional and social development were also carried out. The prevalence of underweight was 8% & 26%, risk of underweight was 10% & 6%, normal weight was 16% & 30%, and overweight was 2% among boys and girls respectively. The type of treatment undergone by the selected children was antiretroviral therapy, 32% and 56% among boys and girls respectively. Tests for evaluating the various developments were carried out and they revealed the following – the emotional developments scores reveals that the boys (36%) had good emotional balance whereas the girls (16%) had a very good emotional balance. In tests for cognition out of the 50 boys and girls, only 10 percent of boys and 16% of girls were able to reproduce the picture exactly the same. The social development among boys and girls was good. The role of nutrition in responding to AIDS is limited, eating a balanced diet does not prevent

HIV infection, does not cure AIDS whereas poor nutritional status in contrast contributes to the more rapid onset of body wasting and other symptoms, leading to sticker demise.

KEYWORDS: Demographic, Reproduce, Devastating, Symptoms,

INTRODUCTION

The devastating demographic social and economic impact of HIV/AIDS pandemic continues to pose a huge challenge and burden to the world; since its emergence over 25years ago. In the last quarter of a century human immuno deficiency virus infection and acquired immuno deficiency syndrome (AIDS) have become a global health, social and economical concern ¹. UNAIDS (2011) estimates that globally 3.4 million children under the age of fourteen years are living with HIV infection, children under the age of 0-14 years who were newly infected with HIV in 2011 are 330,000 and the number of children who were under the age of 0-14 years who died due to AIDS were 23,000. In India approximately 220,000 children are infected with HIV out of 200 million children in 2011 ². Many children experience early and devastating effects of HIV on the nervous system, with loss of developmental milestones or abilities and motor problems such as spasticity. Other children, especially those who were infected later in childhood or adolescence, had a slower progression of the disease with more subtle cognitive symptoms but could also develop severe central nervous system disease in the end stages of their illness. There is still concern, however, some children and adolescents with HIV may have subtle cognitive problems that will have a greater impact as they face more complex educational, social and occupational tasks, particularly with transition to adulthood³. Infection with the human immunodeficiency virus (HIV) frequently results in a progressive debilitating and eventually fatal disease like AIDS. The infection with HIV-1 is characterized by various patterns of the disease progression among the patients, some HIV infected patients are still asymptomatic after fifteen or more years of infection but some patients develop AIDS within two years ⁴. HIV can be transmitted from a mother living with HIV to her child but not all infants born to HIV mothers will have the HIV virus. Without using anti-retroviral (ART) drugs and appropriate feeding, approximately 25-30 percent of infants born to HIV mothers would acquire HIV. Such transmission rates can be reduced to 28 percent if a mother receives ARV before and during delivery and her newborn also receive the drugs within 1-6 weeks after delivery ⁵. The role of nutrition in responding to AIDS is limited, eating a balanced diet does not prevent HIV infection, does not cure AIDS. A poor nutritional status in contrast contributes to the more rapid onset of body wasting and other symptoms, leading to sticker demise ⁶

METHODOLOGY

- 1. Research Design:** Study constituting of HIV infected children between the age group of 6-18 years of age. Independent variables including age of the child, sex of the child, parents' education, and religion, dietary patterns which included food habits, and diet during illness and various everyday practices were investigated.
- 2. Conduct of the Study:** This study was conducted in the rural communities of Coimbatore in Tamil Nadu. A total of 50 HIV infected children were recruited from an orphanage of which 36% constituted of boys and 64% of girls.
- 3. Data Collection and Body Measurements:** The demographic measurements were collected; a well constructed systematic questionnaire was framed and administered in the study. Child

anthropometric data such as body weight, height, BMI (percentile) were measured and calculated. The weight was measured in kilograms, height in centimeters and BMI was calculated by the formula body weight in kgs / height in m². Dietary intake in the past three days was determined by a food frequency questionnaire.

4. **Conducting various studies for evaluating the holistic development:** Tests for cognitive, social and emotional development was carried out using the various standardized questionnaires and tests.

RESULTS AND DISCUSSION

1. Anthropometry Assessment of the Selected Respondents

Anthropometry is the universally applicable inexpensive and non-invasive method available to assess the composition and fat distribution of the human body. It reflects both health and nutritional status of the selected population. Among the various anthropometric measurements, height, weight BMI, head circumference and chest circumference were adopted .

TABLE 1
BMI WISE DISTRIBUTION OF THE SELECTED HIV INFECTED CHILDREN
BASED ON PERCENTILE

BMI Classification NHANES 1 (2004)	BOYS								GIRLS							
	AGE (years)								AGE(years)							
	7-9		10-12		13-15		16-18		7-9		10-12		13-15		16-18	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<5 th Centile (Underweight)	3	6	-	-	1	2	-	-	-	-	6	12	7	14	-	-
5 th to 15 th (Risk of Underweight)	-	-	1	2	2	4	2	4	-	-	2	4	1	2	-	-
15 th to 85 th Centile (Normal)	1	2	2	4	4	8	1	2	1	2	6	12	5	10	3	6
85 th to 95 th Centile (Overweight)	-	-	-	-	1	2	-	-	-	-	1	2	-	-	-	-

It can be inferred that out of the 50 selected children, children who belong to the age group of 7 – 9 years, six percent of the boys were underweight. Boys and girls belonging to the age group of 13 – 15 years who were underweight were two percent of boys and 14 percent of girls. Girls who were underweight were 12 percent and belong to the age group of 10 – 12 years. Boys who belong to the age group of 10 – 18 years who were at the risk of underweight were eight percent; girls who belonged to the age group of 10 – 15 years who were at the risk of underweight were six percent. Children who were of normal weight were present in the age group of 7 – 18 years

were 16 percent of boys and 30 percent of girls. Two percent of boys and girls who belong to the age group 13 – 15 years and 10 – 12 years were overweight respectively.

Morbidity Profile of the selected children

TABLE 2
TYPE OF TREATMENT AND MORBIDITY PROFILE OF THE SELECTED CHILDREN

		Boys (%)	Girls (%)	Total (%)
Type of Treatment	Antiretroviral Therapy	32	56	88
	Multivitamin Supplementary Tablets	4	8	12
Morbidity	Diarrhoea	4	10	14
	Fever	12	40	52
	Common Cold	20	14	34

Among the selected infected children 56 % girls had underwent antiretroviral therapy , only 12 % of the infected children had taken multivitamin supplementary tablets daily. When morbidity pattern was assessed 52 % of the selected infected children suffered from fever very often .

Nutrient Intake of Selected HIV Infected Children

Mean nutrient intake of the selected infected children was assessed using 24 hour recall dietary intake

TABLE 3
NUTRIENT INTAKE OF SELECTED HIV INFECTED CHILDREN

Nutrients	Mean Nutrient Intake of Boys															
	Age (years)															
	7 – 9				10 – 12				13 – 15				16 - 18			
	RD A	Me an	SD	Dif f.	R D A	Mea n	SD	Diff.	R D A	Mea n	SD	Diff.	R D A	Me an	SD	Diff .
Ene rgy (kca l)	1950	1429	275.82	-521	2190	1791	350.86	-399	2450	1916	75.47	-534	2640	2147	120.1	-493
Car boh ydra tes		975.36	110.54	975.36		1056.47	120.76	1056.47		1125.38	95.83	1125.38		1185.4	117.39	1185.4

Protein (g)	41	27.41	3.04	-13.59	54	28.65	4.68	-25.35	70	27.48	2.86	-42.52	78	29.94	6	-48.06
Fat (g)	25	18.36	2.11	-6.64	22	18.69	6.67	-3.31	22	21.62	4.35	-0.38	22	20.55	2.76	-1.45
Calcium (mg)	400	155.5	24.55	-244.5	600	195.17	33.12	-404.83	600	201.61	17.35	-398.39	500	243.83	22.21	-256.17
Iron (mg)	26	18.11	2.54	-7.89	34	15.93	2.23	-18.07	41	18.61	1.84	-22.39	50	20.14	2.74	-29.86
Mean Nutrient Intake of Girls																
Energy (kcal)	1950	1598	30.08	-352	1970	1664	228.6	-306	2060	1988	122.22	-72	2060	2213	131.47	153
Carbohydrates																
Protein (g)	41	20.74	1.54	-20.26	57	25.87	3.19	-31.13	65	24.79	4.65	-40.21	63	33.05	2.95	-29.95
Fat (g)	25	12.46	1.62	-12.54	22	19.67	2.89	-2.33	22	20.32	3.2	-1.68	22	26.35	3.37	4.35
Calcium (mg)	400	154.13	11.98	-245.87	600	230.18	29.09	-369.82	600	268.59	55.42	-331.41	500	351.83	18.9	-148.17
Iron (mg)	26	15.7	2.81	-10.3	28	17.76	2.66	-10.24	28	19.72	2.04	-8.28	30	20.56	2.44	-9.44

The macro nutrient intake of all selected HIV infected children was significantly low, when compared with the RDA, Nutrients like energy proteins and fats were less for the boys belonging to the age group of 7 – 9 years, their proteins, carbohydrate, fats, calcium and iron intake was deficit. Girls who belonged to the age group of 16 – 18 years their energy was little higher than the RDA, but the other nutrient intake was significantly less.

Assessment of Emotional development

Mental health problems (MHPs) among children and adolescents with perinatal HIV infection, including attention problems, hyperactivity, anxiety and depression, have been described prior to and during the highly active antiretroviral therapy (HAART). Many factors may contribute to the emergence of MHPs among children born to women with HIV (Bauman, 2008)

TABLE 4
EMOTIONAL SCORES OBTAINED BY THE SELECTED HIV INFECTED CHILDREN

Age (years)	SCORES											
	(15-19)				(20-24)				(25-30)			
	Boys		Girls		Boys		Girls		Boys		Girls	
	No	%	No	%	No	%	No	%	No	%	No	%
7-9	1	2	-	-	3	6	1	2	-	-	-	-
10-12	2	4	6	12	1	2	6	12	-	-	3	6
13-15	3	6	7	14	5	10	4	8	-	-	2	4
16-18	3	6	-	-	-	-	-	-	-	-	3	6
Total	9	18	13	26	9	18	11	22	-	-	8	16

Score on the rating scale: 15 – 19: Average, 20 – 24: Good, 25 – 30: Very Good (Sharma, 2003)

From the above table it can be interpreted that out of the 50 selected children, two percent of boys had scored 15-19 points, which means that their emotional development was average, four percent of boys scored 10-12 points, similar scores were scored by six percent of boys whose age was between 13-18 years. Children who gained scores 20-24 were only by two percent of girls whose age was 7-9 years. Twelve percent of girls belonged to the age group of 10-12 years scored 20-24 points and remaining eight percent of girls scored 20-24 points. Girls in the age group of 16-18 years had scored 25-30 points were six percent; and the remaining four percent of girls also scored 25-30 points. Aspects which were assessed in emotional development were expressing the feeling of love spontaneously, adjusting with change of teacher, expressing happiness, fear, anger and feeling of sadness.

Cognitive Development: Details of the cognitive development among the selected children is projected in Table V

TABLE 5
COGNITIVE DEVELOPMENT OF THE SELECTED CHILDREN

AGE (years)	NOT SAME				SAME				EXACTLY SAME			
	BOYS		GIRLS		BOYS		GIRLS		BOYS		GIRLS	
	NO	%	NO	%	NO	%	NO	%	NO	%	NO	%
7-9	2	4	1	2	2	4	-	-	-	-	-	-
10-12	-	-	3	6	10	20	-	-	-	-	5	10
13-15	-	-	-	-	3	6	10	20	5	10	3	6

16-18	-	-	-	-	3	6	3	6	-	-	-	-
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For assessing the cognitive development of the children visual memory test developed by Wechsler in (1996) was used. In this test, the children were asked to look at the picture for 10 seconds and reproduce the same without seeing it. Then the children's cognitive development was assessed by analyzing the picture drawn by them, whether they have drawn the picture as not same, same and exactly same. From the above table it can be interpreted that out of the 50 selected children, 10 percent of children belonging to the group of 7-9 years were not able to draw the picture as exactly same. In 10-12 year old boys and girls, only 10 percent girls could draw the picture exactly the same but six percent of boys could not draw the picture as same.

Social Development Scores

Details of the social development scores obtained among the selected HIV Infected children is projected in Table 6

TABLE 6
SOCIAL DEVELOPMENT SCORES OBTAINED BY THE SELECTED CHILDREN

Age (years)	Scores (6 – 10)			
	Boys		Girls	
7-9	4	8	1	2
10-12	3	6	15	30
13-15	8	16	13	26
16-18	3	6	3	6
TOTAL	18	36	32	64

Scores on the rating scale: 1 – 5: Average, 6 – 10: Good, 11 – 15: Very Good (Sharma 2003)

Mean scores obtained for social development by all the selected children was good it was about 6-10 for all the age group, this indicates that social development of the children for the aspects like taking turns in group play or situations and trying to share things working co-operatively with adults, work and play co-relatively with other children making all decisions and controlling ones behaviour was good.

Nutritional and micronutrient deficiencies play an important additive role in immune degradation and impaired development in children. Proper nutrition among HIV infected children is an essential component of an effective response to the HIV/AIDS pandemic in the world. Prevalence of growth failure is significantly greater than that expected in the general population. Inadequate weight gain and muscle wasting are common among HIV infected children along with delayed developmental milestones. For the millions of people suffering from HIV/ AIDS the fragile rampart between life and death is guarded by healthcare workers, physicians' psychologists' social workers and other primary care providers serve as the first resource and link to the information about the principal source of education for its prevention. Due to the complexities of the HIV/AIDS pandemic preventive and curative interventions call for good teamwork on part of the healthcare workers.

REFERENCES

1. Levy J A, & Kaushik, 2009, HIV /AIDS, Encyclopedia of Microbiology, Ed III, Pp 391 – 413.
2. <http://www.unaids.org/aboutunaids/>
3. Allison.S, Wolters. P, Brouwers. P, 2009. Youth with HIV / AIDS: Neurobehavioral Consequences, HIV and the Brain: New challenges in the Modern Era, Pp 187 – 211
4. Shingo Iwami, Shinji Nakaoka, Yashiro Takeuchi, Yoshiharu Miuro, Tomoyuki Miura, 2009, Immune Impairments Thresholds in HIV Infection, Immunology Letters, Vol: 123, Pp 149 – 154.
5. www.unicef.co.in Wardlaw. G, 1996, Perspectives in Nutrition, Under Nutrition throughout the World, Vonhoffmann Press, Pp 765-8



COGNIZANCE LEVEL OF ICT AMONG CHILDREN WITH LEARNING DISABILITIES IN CHENNAI

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ABSTRACT

Technologies like Information and communication technologies (ICT) play a vital role in day-to-day's life especially for school students in terms of shaping their knowledge and skills. However, there is a paucity of research has focused on the cognizance (aspect of use and accessibility level) of ICT among young children who have Learning Disability (LD). Therefore, the main aim of this paper is to analyse the cognizance level of ICT on young children in academic and personal development. The study chooses the target population of 75 students of each 25 from normal schools, special schools, and school with remedial centre. The study completely relies on primary data collection method through open and closed ended questionnaire. After data collection, the data analysis was carried out by SPSS. The following tests was carried out include Kruskal-Wallis test and Chi-square test. Study findings show that all the three included types of children are familiar with IT gadgets. For internet access and smart learning, the children from normal schools and schools with remedial centers score the same whereas; it was low in the case of LD children in special schools. With respect to IT gadgets use, all the three groups of young children use games as the majority. Social networking and games did not show any significant difference among three categories, whereas, project and homework showed significant differences among groups in this study. Overall, the study concluded that there is no doubt the accessibility and use of ICT can have a beneficial influence on the education of children with LD.

KEYWORDS: Communication, Disability, Questionnaire, Technological

INTRODUCTION

Growing up with technologies like Information and communication technologies (ICT) exploring their role in day-to-day's lives of young children. The ICT term is generally utilised in educational practice, policy and research, replaces the earlier term Information Technology (IT) that covers computer and internet (Bolstad, 2004). Today's children are considered to be the first generation of digital age and moreover, they have strong cognizance level to acquire any new information. Over the past few decades, the changes in society prompt the students to get awareness and use the new technologies in ways which will permit them to manage this high competitive technological workplace. Majority of the researchers have agreed that computer based technology support the students functioning in classroom(Hasselbring & Glaser, 2000).It supports the children to enhance their cognizance level in professional learning and development and personal development include enhance strong communication between parents and other people in education setting. Some individuals understand huge advantages and accessibility of computer-based technologies may afford children with learning disabilities(LD)(Bray, Brown, & Green, 2004).

LD refers to a variety of disorders caused by difference in the brain that affects how information is received, processed or communicated(Jacob & Kuruvilla, 2016). They have trouble in processing sensory information because they see, hear and understand things differently. The introduction of ICT and use of the Internet have played a major part in shaping the knowledge and skills of these students. Assistive technology has introduced awareness for both educators and students and development of ICT-based platforms to enhance the learning outcomes of these students(Adam & Tatnall, 2004, 2007). However, there is not much evidence support this statement. Moreover, the usage level of IT among young children is also not clearly explained. Owing to the changing scenario and the large leap of IT in the field of education, the researcher made an effort to study the accessibility and usage level of IT among young children of LD. The reason for analyzing the accessibility and usage level of ICT is because of the researcher will get an idea of cognizance level from this effort.

REVIEW OF THE LITERATURE

The literature review stating the cognizance (accessibility and usage)levelof IT on children in academic and personal development is discussed below in brief.

Young children using computers

During the past few decades, researchers start debates towards learning technologies for young children because of increasing use of computer related technologies for learning of students(Clements, 1999).The report given by the Cordes & Miller (2000)revealed that computers must be removed from primary schools in US because of some dangerous impact to young children in their intellectual, social or emotional, moral and physical hazards. Like, Harvey (2001) represents the same thought as the ICT gives dangerous ways to young children especially in the learning process. This study highlighted that young children spent their time of majority in computers. Though the report revealed by Roberts (1999) examined that children in America aged 2-7 years used computer in an average of 4 hours and 13 minutes at daily specifically they watching videos or television shows in major part, later playing games, only few times they spent for computers. All these studies have specified the most of the young children using computers for various purposes. The cognizance level of IT is increasing among

young children for their academic and personal development(Maimela, 2016). Hence the past studies in line with this concept will be discussed in upcoming section.

Cognizance level (Accessibility and effective use)of ICT on young children in academic development

ICT pervades the educational system and make the young children are being fast forwarded via the fundamental of educational uses of ICT. Usually, computers can established to young children when they are around three years old (Haugland, 1999). The increasing accessibility of ICT supports young children in enhancing their academic development. Some studies showed this effective use and accessibility as follows:

ICT engaged education will be a leap towards sustenance of education as it gives regular gathering of collaboration for parents, planners, teachers, students and instructors(Rout & Aggarwal, 2004).The establishment and usage of ICT by adults and children in early childhood education must be grounded in a clear understanding of the practices, purposes and social context(O'Hara, 2004; O'Rourke & Harrison, 2004; Sheridan & Samuelsson, 2003). Majority of the countries, curriculum and policy support for ICT is still lacking in school sector(O'Hara, 2004; Sheridan & Samuelsson, 2003; Stephen & Plowman, 2003). For instance, in Scotland, ICT strategies were developed by early school education and this strategies support children for enhancing their academic achievement. Some researchers agreed that ICT in childhood education provide enhanced learning skills and decision making power to academic practitioners (Downes *et al.*, 2001; O'Hara, 2004; Siraj-Blatchford & Siraj-Blatchford, 2003).Numerous studies find out the accessibility and use of ICT across distinct early education settings(Brooker, 2003; Downes *et al.*, 2001; Kankaanranta, 2001).

Especially, the accessibility of ICT for LD children is increasing was evidenced in various reports. As per the study of computer programs are helpful for practice and drill lessons for LD children. Tas Adam *et al.* (2014) reported that ICT increasing the learning capability for LD children. According to the report of (Semenov, 2005), ICT enhanced the school learning activities in classroom. Tas Adam & Tatnall (2010) described that ICT gives concept teaching for LD children in improving their performance in secondary-level mainstream classes. Obradović *et al.* (2015)examined the creative teaching with ICT help for LD children.Inclusive Technology (2017)also evidenced the benefits of ICT for young children in learning activities induce academic achievement.

Cognizance level (Accessibility and use) of ICT on young children in personal development

ICT can be an effective tool to get cognizance level of young children's especially in learning and personal development. Linderoth *et al.* (2002)revealed that many children nowadays use ICT for watching film and video games. In this way, children gaining the cognitive needs i.e, desire of knowledge and understand and predictable capability from games. Stephen & Plowman (2003)also noticed the use of ICT among young children as students use ICT for other purposes especially games. Some studies argued that ICT give wrong intentions to children through games but for LD children, ICT brings games for enhancing their motor skills (skipping rope, jumping games, playing catch); board games for fun creation, dominoes, uno, monopoly, scrabble for enhancing reading, Maths, writing and reading skills(Knowles, 2017).Tas Adam & Tatnall (2010)highlighted the use of IT for young children in improving the self-esteem and useful life skills. Adam (2010)determined the e-learning model for LD children via the analysis of curriculum of students and web based technologies.

METHODOLOGY

Selection of students

Primary school children aged between 7-10 years of the following categories were selected; Children from normal school (25 Numbers); Children from normal school with remedial centre for Learning difficulty (25 Numbers); and Children from special school meant for LD (25 Numbers). Three institutions were allowed their students to participate in this research.

Selection of Tools

Due to explore student's belief about the IT usage and accessibility, Questionnaire method was selected to elicit the information. Hence, students were enquired to give a written response to the open ended questions framed with respect to objective of the research.

Design

A cross-sectional design through survey methodology was adopted for this research. In an attempt to report rather than explain the quality of responses of participants to written items on open-ended items on the questionnaire, the investigators utilized a phenomenological approach which permitted the investigators to examine the particular perceptions held by the respondents.

Procedures

Questionnaire was administered to the children through school to the parents. Response of the participants was anonymous and any examining information inadvertently gathered still confidential.

RESULTS AND DISCUSSION

After data collection, the results were carried out through different statistical analysis via SPSS. The results of this paper are represented via following subsections. Initially, the paper represents the findings of descriptive statistics. Followed by quantitative analysis results were carried out by Kruskal-Wallis test and Chi-square test.

TABLE 1
ACCESSIBILITY OF IT

Accessibility of IT							
S. No		Children in Normal school		LD Children in Normal school with remedial coaching		LD Children in Special school	
		n=25	%	n=25	%	n=25	%
1	IT Gadgets	25	100%	25	100%	16	64%
2	Internet Access	24	96%	25	100%	15	60%
3	Smart Learning	21	84%	15	60%	3	12%
	Total	70	93.30%	65	76.70%	26	45.33%
	Average	23.3		21.7		8.7	

From the above table, it is clear that all three groups are familiar with IT gadgets and minor variations were observed. As for as internet access and smart learning are concerned, Children from normal and schools with remedial centers scores the same whereas, it was low in the case of LD children in special schools.

TABLE 2
USAGE OF IT GADGETS BY YOUNG CHILDREN

Usage of IT gadgets by young children							
S. No		Children in Normal school		LD Children in Normal school with remedial coaching		LD Children in Special school	
		n=25	%	n=25	%	n=25	%
1	eLearning	9	36	3	12	0	0
2	Social Networking	22	88	18	72	10	40
3	Games	24	96	20	80	12	48
4	e Reader usage	7	28	3	12	2	8
5	Search engine usage	13	52	9	36	3	12
6	Email	12	48	10	40	6	24
7	PowerPoint	13	52	19	76	0	0
	Total	100	57.1	82	46.9	33	18.9

With regard to usage of IT gadgets by young children, all the three groups of young children use games as majority, after that social networking was used in computers. Followed by search engine and PowerPoint was used by all the three group of people. Comparison of all the groups as it is noticed from the above table, children in normal school use computer for games and social networking than others.

Purpose of using IT enabled devices

H₀: The usage of IT does not depend on the learning ability of the children

TABLE 3
CHI-SQUARE TEST OF PURPOSE OF USAGE OF IT ENABLED DEVICES BY YOUNG CHILDREN

	Games	Homework	Project	Social Network
Chi-Square	10.096	2.960	.493	13.780
df	2	2	2	2
Asymp. Sig.	.006	.228	.781	.001

The above table represents the calculated value of significance is less than 0.5 in using the IT for games and social networking and the hypothesis is accepted. Thus, the type of children with and without disability has no impact on playing games and social network. Since the calculated value of significance is more than 0.05 for homework and project, the relevant hypotheses are rejected. Thus, the type of children with and without disability has an impact on doing homework and project work. It is confirmed from the above table, Social networking and games did not show any significant difference among three categories, whereas, project and homework showed significant differences among groups.

CONCLUSION

For educational purposes, much of the power of the Internet lies in its ability to foster virtual learning communities, and LD students are no exception to this. The difference this technology can make to these students in many ways is remarkable. ICT certainly offers students the capacity to construct their own learning experiences, and the present paper shows that there is no doubt the accessibility and use of ICT can have a beneficial influence on education of children with learning disabilities.

REFERENCE

- Adam, A. (Tas). (2010). *Determining an e-learning model for students with learning disabilities: an analysis of web-based technologies and curriculum*. Victoria University. Retrieved from http://vuir.vu.edu.au/18969/1/Anastasios_%28Tas%29_Adam.pdf
- Adam, T., Rigoni, A., & Tatnall, A. (2014). Designing and Implementing Curriculum for Students with Special Needs: A Case Study of a Thinking Curriculum. *Journal of Business Systems, Governance & Ethics*, 1(1). <https://doi.org/10.15209/jbsge.v1i1.68>
- Adam, T., & Tatnall, A. (2004). Using ICT to Improve the Education of Students with Learning Disabilities. In M. Kendall & B. Samways (Eds.), *Learning to Live in the Knowledge Society* (pp. 63–70). New York City: Springer. Retrieved from <https://link.springer.com/book/10.1007%2F978-0-387-09729-9>
- Adam, T., & Tatnall, A. (2007). Building a Virtual Knowledge Community of Schools for Children with Special Needs. In C. Abbott & Z. Lustigova (Eds.), *Information Technologies for Education and Training (iTET)* (pp. 185–193). Prague, Czech Republic: ETIC Prague, Charles University.
- Adam, T., & Tatnall, A. (2010). Use of ICT to Assist Students with Learning Difficulties: An Actor-Network Analysis (pp. 1–11). https://doi.org/10.1007/978-3-642-15378-5_1
- Bolstad, R. (2004). *The role and potential of ICT in early childhood education A review of New Zealand and international literature*. Thorndon, Wellington. Retrieved from <http://www.nzcer.org.nz/system/files/ictinecefinal.pdf>
- Bray, M., Brown, A., & Green, T. D. (2004). *Technology and the Diverse Learner: A Guide to Classroom Practice*. Thousand Oaks, California: Corwin Press. Retrieved from https://books.google.co.in/books?id=PI7OAwAAQBAJ&source=gbs_navlinks_s
- Brooker, L. (2003). Integrating New Technologies in UK Classrooms Lessons for Teachers from Early Years Practitioners. *Childhood Education*, 79(5), 261–267. <https://doi.org/10.1080/00094056.2003.10521210>

Clements, D. . (1999). *The effective use of computers with young children. Mathematics in the early years.* (J. Copley, Ed.). Reston, VA: National Council of Teachers of Mathematics.

Cordes, C., & Miller, E. (Eds.). (2000). *Fool's Gold: A Critical Look at Computers in Childhood.* New York, United States: Alliance for Childhood. Retrieved from <https://eric.ed.gov/?id=ED445803>

Downes, T., Arthur, L., & Beecher, B. (2001). Effective learning environments for young children using digital resources: an Australian perspective. *Information Technology in Childhood Education Annual*, (1), 139–153. Retrieved from <https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0ahUKEwiRh7zPoLvWAhWKQY8KHWkuDnsQFgg6MAI&url=http%3A%2F%2Fwww.learntechlib.org%2Fd%2F8493&usg=AFQjCNHsIisN99Hc7m5t-V0s2Wl6JkW88Q>

Harvey, B. (2001). Harmful to children? The Alliance for Childhood report. In *Proceedings of the 8th European Logo Conference (EuroLogo)* (pp. 25–31). Linz, Austria: EuroLogo. Retrieved from <https://people.eecs.berkeley.edu/~bh/alliance.html>

Hasselbring, T. S., & Glaser, C. H. W. (2000). Use of Computer Technology to Help Students with Special Needs. *The Future of Children*, 10(2), 102–122. Retrieved from https://www.princeton.edu/futureofchildren/publications/docs/10_02_04.pdf

Haugland, S. W. (1999). What Role Should Technology Play in Young Children's Learning? *Young Children*, 54(6), 26–31. Retrieved from <https://eric.ed.gov/?id=EJ597728>

Inclusive Technology. (2017). ICT and Specific Learning Difficulties and/or Dyslexia. Retrieved September 23, 2017, from <http://www.inclusive.co.uk/articles/ict-and-specific-learning-difficulties-and-or-dyslexia-a216>

Jacob, K. S., & Kuruvilla, A. (2016). *Psychiatric Presentations in General Practice: A Guide to Holistic Management* (2nd ed.). Boca Raton, Florida, United States: CRC Press. Retrieved from https://books.google.co.in/books?id=3KidDQAAQBAJ&dq=Learning+disabilities+refers+to+a+variety+of+disorders+caused+by+difference+in+the+brain+that+affects+how+information+is+received,+processed+or+communicated&source=gbp_navlinks_s

Kankaanranta, M. (2001). Constructing digital portfolios: teachers evolving capabilities in the use of information and communications technology. *Teacher Development*, 5(2), 259–275. <https://doi.org/10.1080/13664530100200139>

Knowles, S. (2017). Games for Children With Learning Difficulties. Retrieved September 23, 2017, from <http://www.youthgroupgames.co.uk/games-for-children-with-learning-difficulties.html>

Linderoth, J., Lantz-Andersson, A., & Lindström, B. (2002). Electronic Exaggerations and Virtual Worries: Mapping Research of Computer Games Relevant to the Understanding of Children's Game Play. *Contemporary Issues in Early Childhood*, 3(2), 226–250. <https://doi.org/10.2304/ciec.2002.3.2.6>

Maimela, M. (2016). Factors That Influence the Performance of Students In Botswana Primary Schools. *IOSR Journal of Humanities and Social Science*, 21(9), 40–53. <https://doi.org/10.9790/0837-2109054053>

NAEYC. (1996). *Technology and Interactive Media as Tools in Early Childhood Programs*

Serving Children from Birth through Age 8. Washington, D.C. Retrieved from http://www.naeyc.org/files/naeyc/file/positions/PS_technology_WEB2.pdf

O'Hara, M. (2004). *ICT in the Early Years (Classmates)*. London, United Kingdom: Bloomsbury Academic. Retrieved from <https://www.amazon.com/Early-Years-Classmates-Mark-OHara/dp/0826466443>

O'Rourke, M., & Harrison, C. (2004). The Introduction of New Technologies: New Possibilities for Early Childhood Pedagogy. *Australian Journal of Early Childhood*, 29(2), 11–18. Retrieved from <https://www.questia.com/library/journal/1G1-120099706/the-introduction-of-new-technologies-new-possibilities>

Obradović, S., Bjekić, D., & Zlatić, L. (2015). Creative Teaching with ICT Support for Students with Specific Learning Disabilities. *Procedia - Social and Behavioral Sciences*, 203, 291–296. <https://doi.org/10.1016/j.sbspro.2015.08.297>

Roberts, D. F. (1999). *Kids and Media at the New Millennium - A Kaiser Family Foundation report, November 1999*. Collingdale, Pennsylvania: DIANE Publishing. Retrieved from https://books.google.co.in/books/about/Kids_and_Media_at_the_New_Millennium.html?id=Z3K1VbT1qAEC&redir_esc=y

Rout, C. R., & Aggarwal, A. (2004, April 10). Education & information technology. *The Hindu*, p. 1. Retrieved from <http://www.thehindu.com/2004/04/10/stories/2004041001731000.htm>

Semenov, A. (2005). *A HANDBOOK FOR TEACHERS or How ICT Can Create New, Open Learning Environments*. (J. Anderson, Ed.). Paris, France: UNESCO,. Retrieved from <http://unesdoc.unesco.org/images/0013/001390/139028e.pdf>

Sheridan, S., & Samuelsson, I. P. (2003). Learning through ICT in Swedish Early Childhood Education from a Pedagogical Perspective of Quality. *Childhood Education*, 79(5), 276–282. <https://doi.org/10.1080/00094056.2003.10521212>

Siraj-Blatchford, I., & Siraj-Blatchford, J. (2003). *More Than Computers: Information and Communication Technology in the Early Years*. London: British Association for Early Childhood Education. Retrieved from https://books.google.co.in/books/about/More_Than_Computers.html?id=6ECgAAAACAAJ&redir_esc=y

Stephen, C., & Plowman, L. (2003). ICT in Pre-School Settings: Benign Addition or Playroom Revolution? *Early Childhood Folio*, 7, 33–38. Retrieved from <http://www.nzcer.org.nz/nzcerpress/early-childhood-folio/articles/ict-pre-school-settings-benign-addition-or-playroom>



TO ASSESS THE KNOWLEDGE ABOUT NUTRITION AND PREVALENCE OF ANEMIA AMONG PRIMI GRAVIDA MOTHERS.

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ABSTRACT

Objective of the study is to assess the knowledge about nutrition and prevalence of anemia among primigravida mothers. For this descriptive quantitative study 112 pregnant women were selected by purposive random sampling method from Lakshana clinic of Kancheepuram district., Prevalence of anemia was diagnosed by examining the blood samples of the subjects during their first trimester. Anaemia was classified as mild, moderate and severe as per the World Health Organization criteria .Socio-demographic details and Knowledge level about nutrition was assessed by personal interview using pre-structured questionnaire. Data were obtained after getting consent from the subjects and analyzed statistically using Percentage. Results of the study showed that 42 % of samples had normal hemoglobin level. Among 58% of anemic samples, 33.0% had mild anaemia, 27.68 % had moderate anemia and 1.7 % had severe anemia. Regarding subjects educational level 90.18% had secondary level education and there were no illiterates .Results on knowledge level of nutrition among pregnant women showed that 73% of the subjects were aware about what is anemia , majority of 81% were aware about weight gain during pregnancy, majority of 91% were aware about increased nutritional intake during pregnancy, 31% were not aware that coffee or tea consumption will inhibit iron absorption, 81% were aware about food rich sources of calcium and only 48% were aware about iron rich food sources. The study concluded that though there were no illiterates among the samples prevalence of anemia was found among 58 % of the subjects. Knowledge about nutrition and anemia was also not satisfactory. Anemia is a major nutritional problem during pregnancy. Good nutritional habits and knowledge about nutrition and anemia have impact not only in women but also among children so proper nutrition education and counseling is essential for all women especially for primigravida mothers.

KEYWORDS: Anemia, Haemoglobin level, Primigravida mothers, Nutritional knowledge,

INTRODUCTION

Anaemia is the most common nutritional deficiency disorder among pregnant women. In women, anaemia may become the underlying cause of maternal mortality and perinatal mortality [1]. Nearly 50 per cent of women of reproductive age are anaemic[2]. According to National consultation on control of nutritional anemia in India [3] and [4], anemia is defined as the hemoglobin of less than 12 g/dl in females. Mild anemia is defined as hemoglobin level of 10-11.9 g/dl, moderate anemia as hemoglobin level of 7-9.9 g/dl and severe anemia was defined as hemoglobin level of less than 7g/dl among females. Though Proper balanced nutrition is important in all stages of human cycle, healthy nutrition during pregnancy is vital for both the mother and the developing foetus. Poor nutrition practice during pregnancy is linked with gestational weight gain, increased maternal infections, preeclampsia, anemia, preterm birth or miscarriage [5]. Nutritional knowledge and awareness among pregnant women helps to prevent deficiency diseases and reduce maternal mortality. Aim of the present study is to to assess the knowledge about nutrition and prevalence of anemia among primigravida mothers.

METHODOLOGY

For this descriptive quantitative study 112 primigravida mothers were selected by purposive random sampling method from Lakshana clinic of Kancheepuram district. After obtaining consent from the subjects, Prevalence of anemia was diagnosed by examining the blood samples of the subjects during their first trimester. Anemia was classified according to the World Health Organization (WHO) classification for pregnant women [6]. Mild anemia was classified as hemoglobin concentrations of 9.0 to 10.9 g/dL, moderate anemia as hemoglobin concentrations of 7.0 to 8.9 g/dL, and severe anemia as hemoglobin concentrations < 7.0 g/dL. Personal details about age, educational level and Knowledge level about nutrition was assessed by personal interview using structured questionnaire. Nutritional Knowledge assessment questionnaire included questions to assess knowledge level of nutrition, knowledge on anemia, knowledge on food consumption pattern and knowledge about food sources. Data were analyzed statistically using Percentage.

RESULTS AND DISCUSSION

Results on Haemoglobin Level

The Table I below shows Number of subjects and percentage according to the haemoglobin level. The number of subjects having normal Haemoglobin Level is 42 which is about 37.5% while the number and percentage of Mild, Moderate and severe anemia were 37.5 and 33.04%, 31 and 27.68% & 2 and 1.79% respectively.

TABLE 1
COMPUTATION OF NUMBER OF INDIVIDUALS AND PERCENTAGE ACCORDING TO THE HAEMOGLOBIN LEVEL

S.No	Haemoglobin Level	Number	Percentage
1	Normal	42	37.50
2	Mild Anaemia	37	33.04
3	Moderate Anaemia	31	27.68
4	Severe Anaemia	2	1.79

The result of the present study shows that among primigravida mothers, the Haemoglobin level was normal in 42% of the subject. It was also found that 33.0% had mild anaemia, 27.68 % had moderate anemia and 1.7 % had severe anemia. The result of the study showed that the number of subjects in age group between 20-25yrs were found to be more among the group. The results of the study is in consistent with study done by Rajamouli J et al 2016[7]. The result of the study shows that the percentage of subjects above secondary level is 90.18%. There were no illiterate among the selected subjects. Though there were no illiterates among the selected subjects, the prevalence of anaemia indicates there is lack of nutritional knowledge among the subjects. So education and awareness about nutrition is important for primigravida mothers.

RESULTS ON AGE

The Table 2 shows number of subjects in different age group. The number of subjects in age group between 20-25yrs was 68 which is about 60.71% of the group. This is followed by 25-30yrs age group which is about 27.68%. The number of subject below 20yr was 9 which account for 8.04% and number of subjects above 30 is 4 which is 3.57%.

TABLE 2
COMPUTATION OF NUMBER OF SUBJECTS IN DIFFERENT AGE GROUP

S.No	Age In Years	Number	Percentage
1	<20	9	8.04
2	20-25	68	60.71
3	25-30	31	27.68
4	>30	4	3.57

Results on Education Level

The Table III shows Number of subjects with different education level. The number of subjects who had higher secondary level of Education was 53 which is 47.32%. The number of subjects with secondary level of Education was 27(24.1%). The Diploma/Degree level subjects were 21 which accounts for 18.75% and the number of primary level subject were 11 which is 9.82%.

TABLE 3
COMPUTATION OF NUMBER OF SUBJECTS WITH DIFFERENT EDUCATION LEVEL

S.No	Educational Level	Number	Percentage
1	Illiterates	0	0.00
2	Primary	11	9.82
3	Secondary	27	24.11
4	Higher secondary	53	47.32
5	Diploma/Degree	21	18.75

Results on Nutritional Knowledge among primigravida mothers

Results about knowledge on anaemia, knowledge on nutrition , knowledge on food consumption pattern, knowledge on food sources are discussed below.

A. Knowledge about Anaemia during Pregnancy

TABLE 4
COMPUTATION OF NUMBER OF SUBJECTS AND PERCENTAGE WITH
KNOWLEDGE ABOUT ANAEMIA DURING PREGNANCY

S.NO	Statement/Question	Yes		No	
		Number	%	Number	%
1	Severe malnutrition is a major risk factor of anemia during pregnancy	61	54.46	51	45.53
2	Do you know what is anaemia	73	63.17	39	34.82

Table 4 shows Number and percentage of subjects who answered to the question/statements on Knowledge about Anaemia. During Pregnancy. For the statement namely "Severe malnutrition is a major risk factor of anemia during pregnancy" the number of subjects who answered with "Yes" were 61 which is 54.46% and "No" were 51 which is 45.53%. For the question "Do you know what is anaemia" the number of subjects answered with "Yes" were 73 which is 63.17% and "No" were 39 which is 34.82%.

The result also shows that though 63.17% of the subjects knew what is anemia, 45.53% of the group was not aware that Severe malnutrition is a major risk factor of anemia during pregnancy. The result of the study shows that majority of the subjects were aware that miscarriage was caused by inadequate nutrition and weight gain is important for pregnancy but 56.25% only knew the importance of supplements during pregnancy.

B. Knowledge on Nutrition during Pregnancy

TABLE 5
COMPUTATION OF NUMBER OF SUBJECTS AND PERCENTAGE WITH
KNOWLEDGE ON NUTRITION DURING PREGNANCY

S.No	Statements	Yes		No	
		Number	%	Number	%
1	Inadequate nutrition can be the cause of miscarriage and/or preterm birth	81	72.32	31	27.68
2	Adequate weight gain is important during pregnancy	72	64.29	40	35.71
3	Iron, folic acid and calcium supplements are important during pregnancy	63	56.25	49	43.75

Table 5 shows Number and percentage of subjects who answered to the question/statements on Knowledge on nutrition during pregnancy. For the statement namely "Inadequate nutrition can be the cause of miscarriage and/or preterm birth" the number of subjects answered "Yes" were 81 which is 72.32% and "No" were 31 which is 27.68%. For the statement "Adequate weight

gain is important during pregnancy” the number of subjects answered ”Yes” were 72 which is 64.29% and ”No” were 40 which is 35.71%. For the statement ” Iron, folic acid and calcium supplements are important during pregnancy” the number of subjects answered ”Yes” were 63 which is 56.25% and ”No” were 49 which is 43.75%.

C. Knowledge on Food Consumption Pattern during Pregnancy

TABLE 6
COMPUTATION OF NUMBER OF SUBJECTS AND PERCENTAGE WITH
KNOWLEDGE ON FOOD CONSUMPTION PATTERN DURING PREGNANCY

S.No	Statements	Yes		No	
		Number	%	Number	%
1	Should not skip meals during pregnancy	68	60.71	44	39.29
2	Nutritional intake should be increased during pregnancy	91	81.25	21	18.75
3	Drinking Tea/coffee with meal decreases iron absorption	31	27.68	81	72.32
4	Vitamin c rich foods in diet increase iron absorption	36	32.14	76	67.86
5	Green leafy vegetables should be included in your diet	46	41.07	66	58.93
6	Fruits intake is important during pregnancy	70	62.50	42	37.50

Table 6 shows Number and percentage of subjects who answered to the question/statements for Knowledge on Food Consumption Pattern during Pregnancy. For the statement namely ” Should not skip meals during pregnancy” the number of subjects answered ”Yes” were 68 which is 60.71% and ”No” were 44 which is 39.29%. For the statement ” Nutritional intake should be increased during pregnancy” the number of subjects answered ”Yes” were 91 which is 81.25% and ”No” were 21 which is 18.75%. For the statement ” Drinking Tea/coffee with meal decreases iron absorption” the number of subjects answered ”Yes” were 31 which is 27.68% and ”No” were 81 which is 72.32%. For the statement ” Vitamin c rich foods in diet increase iron absorption” the number of subjects answered ”Yes” were 36 which is 32.14% and ”No” were 76 which is 67.86%. For the statement ” Green leafy vegetables should be included in your diet” the number of subjects answered ”Yes” were 46 which is 41.07% and ”No” were 66 which is 58.93%. For the statement ” Fruits intake is important during pregnancy” the number of subjects answered ”Yes” were 70 which is 62.50% and ”No” were 42 which is 37.50%.

The result of the study shows that though 60.71% of samples accepted not to skip meal , majority of them were aware that nutritional intake should be increased during pregnancy. Though 72.32% did not know that Drinking Tea/coffee with meal decreases iron absorption 67.86% of subjects did not knew that Vitamin c rich foods in diet increase iron absorption. About 62.50% of subjects were aware that Fruits intake is important during pregnancy .Only 41.07% of the subjects accepted that Green leafy vegetables should be included in the diet.

D. Knowledge on Sources of Food rich in Nutrients

TABLE 6
COMPUTATION OF NUMBER OF SUBJECTS AND PERCENTAGE HAVING
KNOWLEDGE ON SOURCES OF FOOD RICH IN NUTRIENTS

S.No	Statements	Yes		No	
		Number	%	Number	%
1	Knowledge about sources of food rich in protein	76	67.86	36	32.14
2	Knowledge about sources of food rich in iron	48	42.86	64	57.14
3	Knowledge about sources of food rich in calcium	86	76.79	26	23.21

Table 6 shows Number and percentage of subjects who answered to the question/statements on Knowledge on Sources of food rich in Nutrients. For the statement namely " Knowledge about sources of food rich in protein" the number of subjects who answered "Yes" were 76 which is 67.86% and "No" were 36 which is 32.14%. For the statement " Knowledge about sources of food rich in iron" the number of subjects who answered "Yes" were 48 which is 42.86% and "No" were 64 which is 57.14%. For the statement " Knowledge about sources of food rich in calcium" the number of subjects who answered "Yes" were 86 which is 76.79% and "No" were 26 which is 23.21%.

The result also shows that majority of 76.79% of the samples had good Knowledge about sources of foods rich in calcium and Knowledge about sources of food rich in protein were 67.86%. Knowledge about sources of food rich in iron was only 42.86%. among the subjects. This shows that subject lacks knowledge about foods rich in iron. So nutrition education and awareness should be improved among primigravida mothers,

CONCLUSION

According to the Global nutrition report 2016, India stands low on the list of nations dealing with problems arising out of iron deficiency—it is 170th among 180 countries ranked for anaemia among women, Nutritional anemia affects almost two-thirds of pregnant women in developing countries. However, many of these women were already anemic at the time of conception, with an estimated prevalence of anemia of almost 50% among non pregnant women in developing countries [8].

The study concluded that though there were no illiterates among the samples prevalence of anemia was found among 58 % of the subjects. Knowledge about nutrition and anemia was also not satisfactory. Anemia is a major nutritional problem during pregnancy.

Good nutritional habits and knowledge about nutrition and anemia have impact not only in mothers but also among foetus. So proper nutrition education and counseling is recommended for all women, especially for primigravida mothers.

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REFERENCE

1. M Ezzati; AD Lopus; A Dogers; HS Vander; C Murray, Lancet, 2002, 360, 1347-1360.
2. Kawaljit Kaur Anaemia 'a silent killer' among women in India: Present scenario Euro J Zool Res, 2014, 3 (1):32-36
3. National consultation on control of nutritional anemia in India. Department of Family Welfare (Maternal Health Division), Ministry of Health and Family Welfare, Nirman Bhawan, New Delhi, 1998.
4. S Seshadri, Department of Foods and Nutrition. WHO Collaborating Centre for Nutrition Research. The Maharaja Sayajirao University of Baroda, Vadodara, India, 1999.
5. Middleton P, Lassi Z, Tran Ts, Bubner T, Flenady V, et al. (2013) Nutrition interventions and programs for reducing mortality and morbidity in pregnant and lactating women and women of reproductive age: a systematic review. Robinson Institute 63.
6. WHO catalogue of indicators for health monitoring . SCHI Unit. Division of Epidemiological Surveillance and Health Situation and Trend Analysis. World Health Organization; Geneva: 1996. April 1993.
7. Rajamouli J, Ravinder A, SCK Reddy¹, Sujatha Pambi. Study on Prevalence of Anemia among Pregnant Women attending. Antenatal Clinic at Rural Health Training Centre (RHTC) and. Chalmeda Anand Rao Institute of Medical Sciences Teaching. Hospital, Karimnagar, Telangana, India :www.ijcmr.com Jul 31, 2016 – 2388
8. Baig-Ansari N¹, Badruddin SH, Karmaliani R, Harris H, Jehan I, Pasha O, Moss N, McClure EM, Goldenberg RL. Anemia prevalence and risk factors in pregnant women in an urban area of Pakistan. Food Nutr Bull. 2008 Jun;29(2):132-9.



ROLE OF DIETARY FIBRE - A FUNCTIONAL FOOD FOR CARDIOVASCULAR HEALTH

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ABSTRACT

Cardiovascular disease is the most common death in women due to sedentary life style and unhealthy dietary habits. Food choices with high fibre , micronutrients from fruits especially the seasonal fruits of the region will prove beneficial among the population from the burden of lifestyle disorders. Simple lifestyle modifications with physical activity will pave way for better promotion in cardiovascular health of the women and thereby quality of life. The methodology comprised a total of 165 study participants with households and working women. The details regarding baseline data of the study participants, anthropometric, lipid profile, dietary pattern , Lifestyle practices and type of stress were assessed for risk of cardiovascular disease using Health Risk Assessment Index. Education on diet and lifestyle modification were imparted to all high risk women with interactive aids such as chart, power point , pamphlet and demonstration of healthy food choices for healthy heart were used for health education. A total of 17 Women with risk for cardiovascular disease were included for imparting health education. Health profile of the women was assessed using mean nutrient intake from 24 hour food recall for 3 consecutive days; quantitative food frequency method and lipid profile examination at pre and post education in order to ascertain the role of fibre as a functional food. The normal value of various lipid levels were statistically analysed for comparison between the difference among women at pre and post education of all the seventeen women with lipid fractions were decreased although there was not a significant decrease in the statistical analysis with 't' tests. Statistical analysis was used to assess the significant difference between mean nutrient in take of the selected study women with risk for cardiovascular disease.

KEYWORDS: *Cardiovascular Disease, Risk Assessment, Dietary Fibre, Lipid Profile*

INTRODUCTION

Asian Indian population is likely to climb up 90 percent cardiovascular mortality in women by 2015¹. Young adult women should pay special attention for getting a balanced diet to get enough vitamins and minerals for leading the healthy life. Foods with a lot of fats, salt or sugar, that not have much of good stuff like vitamins and fibre. The Institute of Medicine's Food and Nutrition Board (IOM/FNB, 1994) defined functional foods as any food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains."

Eating well and feeling good is about more than just putting "healthy" food into our mouth². The higher intake of fats, oils, poor food choices (high consumption of sugar, salt, saturated fat) and unhealthy lifestyle (physical inactivity) have been identified as major risk factors of cardiovascular disease. The Contribution of phytonutrients, of the food components in the diet reduces cardiovascular disease risk factors. The diets include plant sterols and viscous fibre which are primarily from oats, barley, soy protein, vegetables, fruits and nuts such as almonds³. Hence the present study entitled "role of fibre - a functional food for cardiovascular health is carried out with the objective to assess the role of dietary fiber intake and cardiovascular health among women.

METHODOLOGY

A total of 165 Young Women in the age group of 21 to 40 years from households and at work place from Coimbatore were selected as study participants. Baseline data was elicited from the study participants through purposive sampling among the working and non working women. A designed questionnaire was formulated and used to collect data from study participants. Assessment of health status was done with Health Risk Assessment Index based on the anthropometric measurements, biochemical estimations, dietary pattern and lifestyle practices. The comprehension about dietary pattern of women with specific details on meal pattern, quantity of fats and oil used, fibre intake and consumption of fast foods were collected. Twenty four hour recall method for three consecutive days and food frequency method used for health risk assessment. Health Education with four modules were used to impart education among the selected study participants which are Healthy Food Choices for Heart, Your Heart and Health, Fat Vs Fibre and Heart Healthy recipes.

FINDINGS

The salient findings of the study are discussed in the following headings.

I Anthropometric assessments

Anthropometric assessment Anthropometric measurements namely, Body Mass Index and Waist to Hip Ratio are discussed Table 1 and 2

a. Body Mass Index

TABLE 1
BODY MASS INDEX OF THE YOUNG WOMEN N=165

Risk Category	BMI Range	No.	Percentage
Low Risk	<23.5	51	30.9
Medium Risk	23.5-29.9	98	59.4
High Risk	>30	16	9.7

The present study reported that 59.4 per cent of the women were at medium risk with found to be obese indicating adiposity and higher chance of lifestyle disorders. whereas 9.7 per cent women were at high risk with Body Mass Index more than 25, cautioning the need for more awareness and behavioural modifications among the young women which may prevent diseases.

b. Waist to Hip Ratio

TABLE 2
WAIST TO HIP RATIO AMONG THE YOUNG WOMEN N=165

Risk Category	WHR Range	No.	Percentage
Low Risk	0.8	8	4.8
Medium Risk	0.8-0.9	127	76.9
High Risk	>0.9	30	18.3

Seventy six percent women were at medium risk and the 18.3 per cent had high risk of cardiovascular disease. Women with waist to hip ratio of more than 0.8 and body mass index more than 32 have an increased risk of the cardiovascular diseases¹²

II Dietary assessment

a. Consumption pattern of Fibre rich foods

TABLE 3
CONSUMPTION PATTERN OF FIBRE RICH FOODS N= 165

FOOD GROUPS	Quantity/ serving (Mean value in g)	FREQUENCY OF CONSUMPTION					
		Daily		Weekly		Monthly	
		No.	%	No.	%	No.	%
Cereals and Millets	46	18	11.2	31	19	34	20.5
Pulses	39.8	4	2.5	81	49.1	32	19.6
Green leafy vegetables	40	26	16.2	52	31.5	37	22.3
Roots and Tubers	54.2	0	0	70	42.7	36	21.9
Other vegetables	54	0	0	65	39.4	50	30.2
Fruits	55	0	0	52	31.7	49	29.7
Nuts and Seeds	43.7	10	6.1	48	29.4	39	23.7

* Multiple Responses

Among the consumption pattern of cereals and millets, rice was observed to be consumed daily by all the selected women as rice is the staple food of the South Indians. Among the millets such as samai, varagu and wheat were consumed by 30 percent women once a week. In the case of pulses, 7.2 per cent and 10.9 per cent of women consumed Bengal gram whole and black gram daily. Compared to other pulses 78 per cent women consumed red gram dhal weekly once and quantity per serving was also noticed high.

Consumption pattern of vegetables showed that, 81.2 per cent of women consumed fibre rich green leafy vegetables weekly once but in low quantity. In the case of roots and tubers, 65.4 per cent of the women consumed weekly once and Seventy two percent women used other vegetables like beans, drumstick, bottle gourd and plantain once in a week. Among the group, 6.6 per cent of the women used fruits weekly once in the diet.

III Analysis of the health status of the selected study participants

TABLE 4
MEAN NUTRIENT INTAKE OF SELECTED WOMEN N=165

Nutrient	Recommended Dietary Allowance (A)	Pre education (B)	Excess/ Deficit	't' value	Post education (C)	Excess/ Deficit	't' value
Energy (kcal)	1900	1953	+53	37.49**	1902.3	+02	41.56**
Protein (gm)	55	63	+8	7.90**	70	+15	11.63**
Carbohydrate (gm)	475	532.1	+57	12.63**	539	+64	16.37**
Fat(gm)	20	38	+18	8.65**	22.2	+2	3.52*
Fibre (gm)	30	1.6	-28	76.95**	12.1	-17	63.49**
Vitamin A (mcg)	4,800	3794	-1006	236.20**	3998	-802	285.14**
Iron (mg)	21	18.6	-2.4	4.27**	20	-1	1.46NS
Calcium (mg)	600	576	-24	6.84**	615	+15	8.36**
VitaminC (mg)	40	30.2	-10	7.39**	41.3	+1.3	1.052NS

* Recommended Dietary Allowance, 2010 * - significant at 5% level ** - Significant at 1% level (p<0.01) NS – Not Significant

The mean nutrient intake of the selected women showed that the energy derived from the menu met the Recommended Dietary Allowance with increase in protein and carbohydrates. There was a gradual reduction in fat intake from 38 gram at pre education to 22 gram at post education. This evidently proved the awareness to the women folks in the use of fats and oils for themselves and for family. There was improvement in fibre intake from 1.6 gram to 12.1 gram and still calls for increased awareness and modification in the consumption of fibre through whole grams,

grains, vegetables and fruits. The mean intake for micronutrients such as vitamin, iron, calcium, vitamin C has increased and met the Recommended Dietary Allowances.

IV Health education and Health profile at pre and post education of the study

Participants

b. Mean lipid profile

TABLE 5
MEAN LIPID PROFILE OF THE SELECTED WOMEN N=17

Lipid fractions	Standard values mg/dl	Before mean values	't' value	After mean values	't' value
Total cholesterol	<200	189.9 ± 40.43	0.707NS	179.12 ± 43.84	0.102 NS
High density lipo proteins	60	49.6 ± 6.13	0.699 NS	50.33 ± 8.63	2.33*
Low density lipo proteins	60-130	111.4 ± 40.40	0.854 NS	108.18 ± 40.19	1.504 NS
Very low density lipo proteins	40-50	30.7 ± 11.72	0.983 NS	28.47 ± 12.79	1.88 NS
Triglycerides	<150	151.5 ± 59.42	0.811 NS	146.77 ± 43.66	1.247 NS

National Cholesterol Education Programme- 2012 * - Significant at 55 level NS – Not Significant

The mean value of the lipid profile examination among women showed that the lipid fraction such as Total cholesterol, low density lipoprotein, very low density lipoprotein, triglyceride has decreased although there was not a significant decrease in the statistical analysis with 't' tests. This may be attributed to the reason of the shorter intervention period and this may prove beneficial to the women where behavioral modification in healthy choices and dietary pattern on a long practice and adopting healthier food choices. The lipid fractions respond well to the simple dietary modifications with reduction in fat and increase in fiber.

CONCLUSION

Enlightening women to adopt healthy food choices, fibre rich foods, low fat and daily physical activity will have greater influence on the health of the women. Informed food choices with more fibre, micronutrients from fruits especially the seasonal fruits will certainly benefit the population from the burden of lifestyle disorders. Simple lifestyle modifications with physical activity will pave way for better promotion in health of the women and thereby heart health.

REFERENCES

1. Ghafoorunisa, S and Krishnaswamy, K "Diet and heart disease", National Institute of Nutrition. Hyderabad, 2015, Pp 1-2

2. Mag T and Ghosh A ., “Prevalence of cardiovascular disease risk factors in a rural community in west Bengal, India”, International Journal of medicine and public health, 5(4), 2015,Pp 259-262.
3. Recarti S.J. Stehuwer,R and Unger.T., “Excess cardiovascular risk in Diabetic women : A case for intensive Treatment”, Current Hypertension Reports, 17 (45), 2015, Pp 2-5.



PHYSICAL ACTIVITY PRACTICES AND RELATIONSHIP WITH ENERGY INTAKE AMONG ADOLESCENTS

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ABSTRACT

Adolescents require special attention and nutritional care because of the negative nutritional consequences that may occur as a result of inadequate consumption of healthy foods and physical inactivity. The objective is to assess the BMI, dietary pattern, physical activity practices of Adolescents and to find the relation between the physical activity and energy intake of Adolescents. Fifty adolescents in the age group of 16 and 17 years were selected by purposive sampling based on inclusion and exclusion criteria. The dietary pattern was assessed by 24 hour recall method. A standardized physical activity questionnaire (PAQ-A) including their lifestyle pattern was used. The result indicated that the percentage of underweight is more than obese among adolescents. The prevalence of overweight and obesity of the participants was low among the adolescents. The exercise pattern of adolescence was also assessed and it showed that only 20 adolescents do exercise and rest 30 does not perform any exercise. The energy intake of boys and girls based on their physical practices were found to be statistically significant at $p=0.0008$ and $p=0.0048$ level respectively. The physical activity practice of adolescents was observed to be minimal and this may be due to sedentary lifestyles. This is due to increase in access to technology and devices in most societies around the world.

KEYWORDS: Adolescence, Physical Activity Practice, Dietary Pattern, Exercise

INTRODUCTION

Adolescence is a vulnerable period of life as health-related behaviours that drive the major chronic degenerative diseases start or are reinforced during this time¹. Adolescents' food habits are important determinants of both their present and future health². They require special attention and nutritional care because of the negative nutritional consequences that may occur as a result of inadequate consumption of healthy foods and physical inactivity.

During the past few decades, in developed countries, physical activity levels among both adults and children have declined steadily^{3,4}. Physical inactivity has been identified as the fourth leading risk factor of global mortality⁵. The physical activity profile of adolescents who are generally more likely to have poorer health, require more preventive health interventions than the other populations^{6,7}. Young people of different populations have reported unhealthy dietary habits^{8,9}. Children having sedentary habits, often eat amounts of food that exceed their relatively lower energy requirements, go into a positive energy balance and are at risk of becoming overweight or obese^{10,11}.

RATIONALE OF THE STUDY

Sedentary lifestyles are increasing in most societies around the world, mainly owing to increased access to effort-saving technology and devices. A reduction in outdoor playing and walking due to structural constraints along with increased screen time are the main reasons. On the other hand dietary pattern of adolescents also is undergoing a tremendous change wherein fast foods and processed foods are consumed more. Though the relationship between dietary intake and physical activity has long been established an effort has been taken to understand the association between the consumption pattern and physical activity among the present day adolescents.

OBJECTIVES

- Assess the dietary pattern of adolescents
- Study the physical activity among the Adolescents and
- Find out the relationship between physical activity and dietary pattern of Adolescents.

METHODOLOGY

Fifty adolescents (25 boys and 25 girls) in the age group of 16 and 17 years were selected by purposive sampling based on the following inclusion and exclusion criteria.

Inclusion criteria

- Adolescents belonging to 16 and 17 years age
- Both boys and girls
- Willingness to participate in the study

Exclusion criteria

- Adolescents above the age of 17 years.
- Adolescents below the age of 16 years.
- Differently-able adolescents

Assessment of nutritional status

The nutritional status of the subjects was assessed using their height (cm) and weight (kg) recorded using standard methods. BMI was calculated using Centers for Disease Control and Prevention, National Center for Health Statistics, 2000¹².

Weight Status Category	Percentile Range
Underweight	Less than the 5 th percentile
Normal or Healthy Weight	5 th percentile to less than the 85 th percentile
Overweight	85 th to less than the 95 th percentile
Obese	Equal to or greater than the 95 th percentile

Centers for Disease Control and Prevention, National Center for Health Statistics, 2000

The dietary pattern was assessed by 24 hour recall method. Adolescents were asked about which food they think will increase their strength towards physical activity A standardized physical activity questionnaire (PAQ-A)¹³ including their lifestyle pattern was used. The data collected was statistically analyzed. The statistical analysis was carried out for 10 adolescents each in the exercise and non-exercise category.

RESULTS AND DISCUSSION:**A. Age criteria of selected boys and girls :**

Table 1 denotes that 15 boys and girls are of 16 years and 10 boys and girls are of 17 years.

TABLE 1 AGE CRITERIA OF BOYS AND GIRLS

Age	Boys (n=25)	Girls (n=25)
16 years	15	15
17 years	10	10

B. Foods increasing the physical activity by adolescents:

Figure 1 shows the foods that adolescent think that increase their physical activity. Majority of the adolescent think that milk (33%) helps in improving their level of activity and 6% of adolescents think that fruits increases their activity level. The cereals like rice, wheat etc are chosen by only 14% of adolescents. The adolescents belief has a direct relation of food choices made by them.

■ milk ■ egg ■ nuts ■ green leafy vegetables ■ cereals ■ fish/chicken

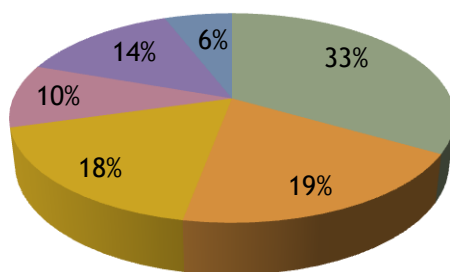


Figure 1

FOODS THAT HELPS IN INCREASING PHYSICAL ACTIVITY

C.BMI OF ADOLESCENTS

TABLE 2
BMI OF ADOLESCENTS

BMI	Boys (n=25)	Girls (n=25)
Underweight	10	12
Normal	13	10
Overweight	1	1
Obese	1	2

It was found that 10 boys and 12 girls were underweight and only one boy and two girls were obese. Indicating that underweight was seen to be present more than obesity among the adolescents.

Physical activity practice of adolescents

TABLE 3
EXERCISE PATTERN OF BOYS AND GIRLS

Characteristics	Category	Boys (25)	Girls (25)
		Number	Number
Exercise	Exercise done	10	10
	Exercise not done	15	15
Frequency of exercise	Daily	2	1
	Weekly thrice	2	1
	Occasionally	6	8
Type of exercise	Running	5	3

	Sports	5	7
Duration of exercise	<30 minutes	6	7
	<45 minutes	4	3
Feeling after day's activity	Tired	4	5
	Active	2	3
	Pain	4	2
Participation in Physical education class	Hardly Ever	13	15
	Sometimes	2	0
	Quite often	2	2
	Always	8	8
Activities engaged-in after lunch	Relaxed and slept	8	10
	Ran and played a little	5	5
	Ran and played hard	4	3
	Sat down	7	5
	Walked around	1	2

The exercise pattern of adolescents showed that only 10 girls and boys each do exercise and the rest 15 in each category did not perform any exercise. The frequency of exercise shows that 6 and 8 boys and girls perform exercise occasionally which indicates that there is minimal physical activity. Majority of adolescents indulge in sports like cricket, football, volley ball and basket ball as there is a physical training class offered by the schools but the duration is minimal and is restricted to less than 30 minutes. 4 boys and 5 girls said that they felt tired after the day's activity.

C. Nutrient intake of boys and adolescents

TABLE 4
NUTRIENT INTAKE OF BOYS

Nutrients	RDA (2010)	Boys Mean±SD	Percentage intake
Energy (kcal)	3020	1063.53±136.07	35.22
Protein (g)	61.5	30.92±9.52	50.28
Fat (g)	50	33.32±9.69	66.64
Carbohydrate * (g)		160.81±38.24	

TABLE 5
NUTRIENT INTAKE OF GIRLS

Nutrients	RDA (2010)	Girls Mean±SD	Percentage intake
Energy (kcal)	2440	1004.68±143.37	41.18
Protein (g)	55.5	29.16±8.16	52.54
Fat (g)	35	33.23±9.61	94.94
Carbohydrate * (g)		149.75±31.59	

*Carbohydrate RDA not available

The mean calorie intake of boys and girls was 1063 and 1004.68 kcals respectively. This shows that there was no major difference in the energy intake but was lower than RDA. It was surprising to note that not even fifty percent of the recommended energy intake was consumed by the adolescents and hence the prevalence of underweight among them. The difference in calorie intake among boys and girls was found to be not statistically significant ($p=0.143$).

Relation between physical activity practice and energy intake among boys

TABLE 6
ENERGY INTAKE OF BOYS

Exercise not done	Exercise done	P value
1150.8	995.2	0.0008
1199.9	910.36	
1194.55	1070.73	
1312.05	1121.30	
1250.3	980.3	
1263.15	1057.8	
1200.45	1132	
1234.4	995.2	
1110.42	980.47	
951.7	1068.8	
1186.77±100.35	1031.22±70.18	P<0.05

From table 6, it's clear that the energy intake among boys who do exercise and do not exercise is statistically significant ($p=0.0008$). The mean energy intake of boys who do exercise 1031.22±70.18 is lesser than the boys who do not exercise 1186.77±100.35. This indicates that there is a difference in energy intake of adolescent boys who do and don't do exercise.

Relation between physical activity practice and energy intake among girls

TABLE 7
ENERGY INTAKE OF GIRLS

Exercise not done	Exercise done	P value
980.47	995.2	0.0048
1250.3	1001.8	
1194.55	1013.85	
1199.9	1005.26	
1200.45	881.5	
1392.05	1068.8	
1121.30	908.14	
993.65	955	
980.3	951.7	
955	870.75	
1126.80±145.72	965±63.61	P<0.05

The energy intake of girls who exercise and do not exercise showed that the findings are statistically significant at $p=0.0048$. The mean calculation of exercise done 965 ± 63.61 is lower than do not exercise 1126.80 ± 145.72 . This signifies that the energy intake is more in adolescents who do not exercise which results in positive energy balance.

CONCLUSION

The prevalence of overweight and obesity of the participants was low among the adolescents. The nutrient intake of adolescents was found out to be lower. The difference in calorie intake among boys and girls was found to be not statistically significant. The physical activity practice of adolescents was observed to be minimal and this may be due to sedentary lifestyles in spite of physical training classes offered in schools. The participant's energy intake and physical activity practice greatly relate to each other. This shows that adolescence should increase their physical activity level as well as their eating habits for a healthy lifestyle.

REFERENCES

1. World Health Organization: WHO calls for stronger focus on adolescent health. <http://www.who.int/mediacentre/news/releases/2014/focusadolescent-health/en/> (2016).
2. Wennberg M, Gustafsson PE, Wennberg P, Hammarström A. Poor breakfast habits in adolescence predict the metabolic syndrome in adulthood. *Public Health Nutr.* 2015;18:122–9
3. J.J. Reilly, D.M. Jackson, C. Montgomery, L.A. Kelly, C. Slater, S. Grant, J.Y. Paton **Total energy expenditure and physical activity in young Scottish children: Mixed longitudinal study** *Lancet*, 363 (2004), pp. 211-212

4. French, S.A., M. Story, and R.W. Jeffery. 2001. Environmental Influences on Eating and Physical Activity. *Annual Review of Public Health* 22:309–35.
5. World Health Organization. (2014). Physical Inactivity: A Global Public Health Problem from Global Strategy on Diet, Physical Activity and Health : http://www.who.int/dietphysicalactivity/factsheet_inactivity/en/ Retrieved June 26, 2014.
6. Lin, J. D., Lin, Y. W., Yen, C. F., Loh, C. H., & Chwo, M. J. (2009). Received, understanding and satisfaction of national health insurance premium subsidy scheme by families of children with disabilities: A census study in Taipei City. *Research in Developmental Disabilities*, 30, 275–283.
7. Yen, C. F., Lin, J. D., Loh, C. H., Shi, L., & Hsu, S. W. (2009). Determinants of prescription drug use by adolescents with intellectual disabilities in Taiwan. *Research in Developmental Disabilities*, 30, 1354–1366.
8. Yang GH, Ma JM, Liu N, Chen AP. Study on diet, physical activities and body mass index in Chinese population in 2002. *Zhonghua Liu Xing Bing Xue Za Zhi* 2005;26:246 51.
9. Omar HA, Rager K. Prevalence of obesity and lack of physical activity among Kentucky adolescents. *Int J Adolesc Med Health* 2005;17:79-82.
10. Goran, M.I. & Treuth, M.S. 2001. Energy expenditure, physical activity, and obesity in children. *Pediatr. Clin. North Am.*, 48: 931–953.
longitudinal study. *Lancet* 2004;363:211-2.
11. Dietz, W.H. & Gortmaker, S.L. 2001. Preventing obesity in children and adolescents. *Annu. Rev. Public Health*, 22: 337–353. energy expenditure and physical activity in young Scottish children: mixed
12. National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion <http://www.cdc.gov/growthcharts> 2000
13. Booth, M. L., Okely, A. D., Chey, T., & Bauman, A. (2002). The reliability and validity of the Adolescent Physical Activity Recall Questionnaire. *Medicine and Science in Sports and Exercise*, 34, 1986-1995.



EFFECT OF SPECIFIC TRAINING ON SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLE AMONG COLLEGE MEN PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of specific training on selected physical and physiological variables among college men players. To achieve the purpose of the study investigator selected 30 men players were randomly selected from Selvam College of physical education namakkal. Their ages ranges from 18 to 24 years. They were divided in to two groups. After analyzing the various factors associated with the presented study. The following physical variables such as speed, agility and explosive power (leg explosive power), physiological variables such as breath holding time and resting heart rate were selected. Speed was tested with 50 meter dash, agility was tested with T- test, explosive power was tested with standing broad jump, breath holding time was tested stop watch and resting heart rate was tested manual. With the experimental group was exposed to specific training a period of six weeks. The collected data were analysed statistically by dependent 't' test used. From the analysis of data it was proved that there are significant improvements in speed, agility, leg explosive power, breath holding time and resting heart rate.

KEYWORDS: *Speed, Agility, Leg Explosive Power, Breath Holding Time and Resting Heart Rate.*

INTRODUCTION

Physical fitness comprises two related concepts: general fitness (a state of health and well-being) and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through exercise, correct nutrition and enough rest. It is an important part of life. In previous years, fitness was commonly defined as the capacity to carry out the day's activities without undue fatigue. However, as automation increased leisure time, changes in lifestyles following the industrial revolution rendered this definition insufficient. These days, physical fitness is considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases, and to meet emergency situations.

Physiology is the study of the functions of the normal human body. Physiology is one of the biomedical science, it deals with the functions of the living organism, its systems, organs, individual cell and cell structures, as well as with the mechanism regulating the functions and interaction of the organism with the external environment. The goal of physiology is to gain in right in to the machinery of the human organism. The roles and interaction of its parts and the resultant output of these interactions, that is, the overall functioning of the organism. **Hardyal singh(1991)**

STATEMENT OF THE PROBLEM

The purpose of this study is to find out the effect of specific training on selected physical and physiological variable among College men players.

Hypothesis

It was hypothesized that there will be a significant improvement due to the effect of specific training on selected physical variable Speed ,Agility, Leg Explosive power among college men players.

It was hypothesized that there will be significant improvement due to the effect of game specific training on selected physiological variables Breath Holding Time, Resting Heart Rate, among college men players.

REVIEW AND RELATED LITERATURE

Binnie MJ, (2013) This study compared the effect of an 8-week pre-season conditioning program conducted on a sand (SAND) or grass (GRASS) surface on 20 m sprint performance. Twelve team sport athletes were required to attend three 1 h training sessions per week, including two surface-specific sessions (SAND, n=6 or GRASS, n=6), and one group session (conducted on grass). Throughout the training period, 20 m sprint times of all athletes were recorded on both sand and grass surfaces at the end of week 1, 4 and 8. Results showed a significant improvement in 20 m sand time in the SAND group only ($p < 0.05$), whereas 20 m grass time improved equally in both training sub-groups ($p < 0.05$). These results suggest that surface-specificity is essential for 20 m speed improvements on sand, and also that there is no detriment to grass speed gains when incorporating sand surfaces into a pre-season program.

Sharma and Tyagi, (2011) investigated the effect of specific training programme on physiological and fitness components of Table tennis players. For the study Table tennis players from Delhi were identified as subjects randomly. To conduct the study in accordance of the methodology the subjects were given a pre test for the physical and physiological parameters. The physiological parameters selected were systolic blood pressure, diastolic blood pressure,

pulse rate, vital capacity, cardio respiratory endurance and breathing holding rate. The physical parameters were speed, flexibility, power, balance and agility. The subjects underwent the programme of the specific training designed for the players. Pre test and post test comparisons were done to find the effect of the specific training on the players. The result reveals that significant difference were obtained on physiological (systolic blood pressure, pulse rate, and breathing holding rate) and fitness (speed and agility) components on the comparisons of means within the components on the comparisons of means within the control group.

METHODOLOGY

The purpose of the study was to find out the effect of specific training on selected physical and physiological variables among college men players. To achieve the purpose of the study investigator selected 30 men players were randomly selected from Selvam college of physical education Namakkal. Their ages ranges from 18 to 24 years. The subjects were divided in to two groups namely Experiment group and Control group. Each group consists of 15 subjects. Experiment group were exposed to circuit training for a period of 6 weeks. Control group was not exposed to circuit training. After analyzing the various factors associated with the presented study. Pre and post test on the selected physical variables such as speed, agility and explosive power (leg explosive power), physiological variables such as breath holding time and resting heart rate were conducted before and after the experimental training. Speed was tested with 50 meter dash, agility was tested with T- test, explosive power was tested with standing broad jump, breath holding time was tested stop watch and resting heart rate was tested manual. The collected data were analysed statistically by dependent 't' test used.

RESULTS AND DISCUSSION

TABLE-1
SHOWING THE MEAN VALUE OF CONTROL AND EXPERIMENTAL MEN
COLLEGE LEVEL PLAYERS ON SPEED AGILITY EXPLOSIVE POWER BREATH
HOLDING TIME AND RESTING HEART RATE

VARIABLES	GROUP	NUMBER OF SUBJECT	MEAN		SD		t
			PRE	POST	PRE	POST	
Speed	Control	15	6.85	6.86	0.14	0.17	0.98
	Experimental	15	6.83	6.42	0.13	0.19	9.02*
Agility	Control	15	7.81	7.80	0.16	0.15	0.42
	Experimental	15	7.78	7.29	0.24	0.31	5.87*
Explosive power	Control	15	2.41	2.51	0.15	0.22	0.73
	Experimental	15	2.38	2.69	0.10	0.17	3.06*
Breath holding Time	Control	15	45.37	45.38	3.05	3.05	0.07
	Experimental	15	45.45	48.12	3.35	2.99	2.49*
Resting heart	Control	15	75.60	75.27	2.87	2.81	0.81

rate	Experimental	15	74.80	72.67	2.46	2.44	2.96*
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*Significant at 0.05 level df 28 is 2.04

The result presented in Table I proved that there was significant improvement in speed as the obtained 't' value of 9.02 was greater than the table 't' value of 2.04.

That there was significant improvement in Agility as the obtained 't' value of 5.86 was greater than the table 't' value of 2.04.

That there was significant improvement in Explosive power as the obtained 't' value of 3.06 was greater than the table 't' value of 2.04.

That there was significant improvement in breath holding time as the obtained 't' value of 2.49 was greater than the table 't' value of 2.04.

That there was significant improvement in Resting heart rate as the obtained 't' value of 2.96 was greater than the table 't' value of 2.04.

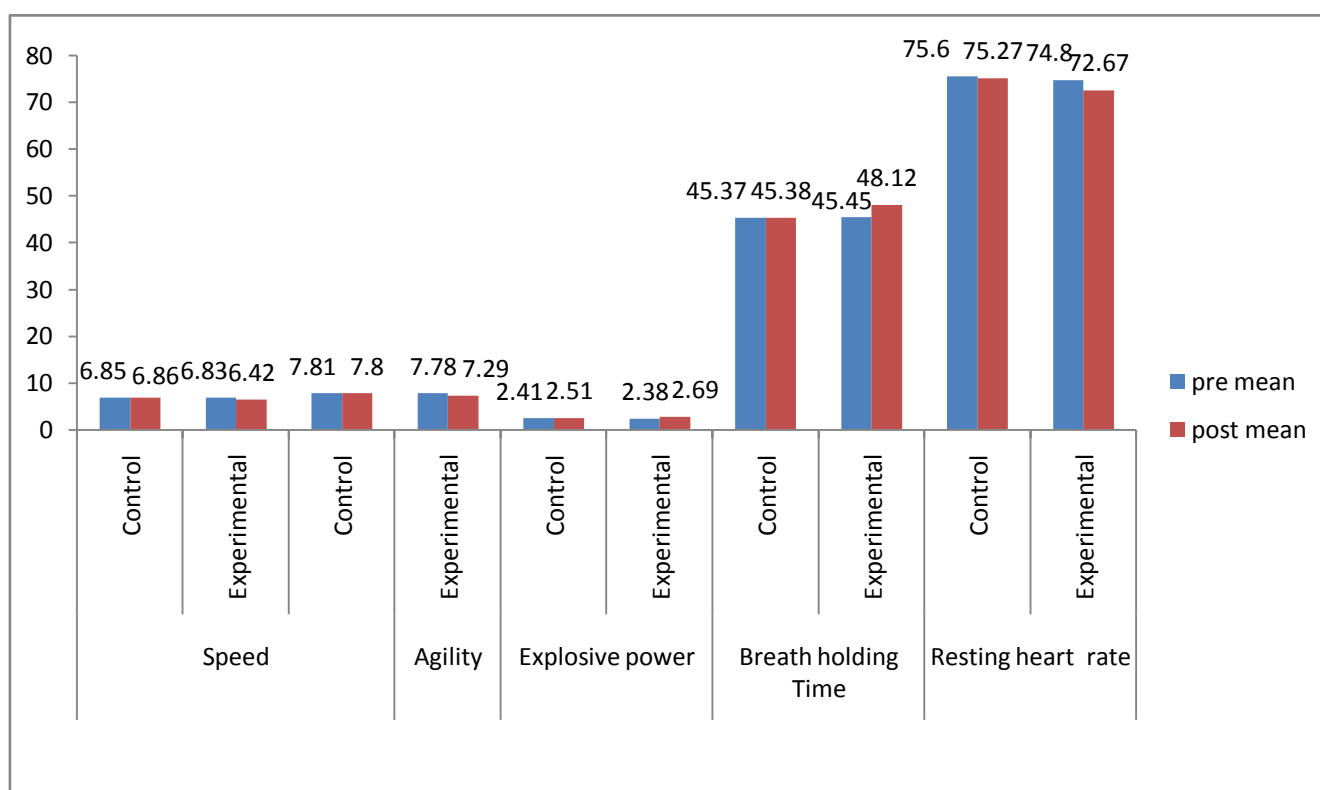


Figure -1

Showing the Mean Value of Control and Experimental Men College Level Players on Speed Agility Explosive Power Breath Holding Time and Resting Heart Rate

CONCLUSION

The results of the study showed that there were significant improvements in physical variables on Speed, Agility, Leg Explosive power after six weeks of specific training among college men players. The results of the study showed that there were significant improvements in

physiological variables such as Breath Holding Time, and Resting Heart Rate after six weeks of specific training among college men players

REFERENCES

1. Binnie MJ, Peeling P, Pinnington H, Landers G, Dawson B. Effect of surface-specific training on 20 m sprint performance on sand and grass surfaces. 2013 Mar 8.
2. **Hardyal singh(1991)** science of sports Training. New Delhi: DVS Publications.
3. **Sharma and Tyagi, (2011)** investigated the effect of specific training programme on physiological and fitness components of Table tennis players.



ASSESSMENT OF MINIMUM MUSCULAR FITNESS ON TRIBAL STUDENTS IN THE NILGIRIS

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ABSTRACT

This study was designed to assess the minimum muscular fitness of tribal students in the Nilgiris. To achieve the purpose of the study 1000 tribal students were selected from the Nilgiris district their age ranged from 14 to 17 year. The minimum muscular fitness was assessed by Kraus Weber Minimum Muscular Fitness Test. Kraus Weber test is a pass or fail test consists of six test items such as abdominal plus (or) hip flexors, abdominal minus (or) abdominals and hip flexors, psoas and lower abdomen (or) abdominals, upper back, lower back and length of back and hamstring muscles (or) flexibility. The data collected from the subjects was statistically analyzed and presented in a form. From the result of the present study, it was speculated that the observed significant difference in minimum muscular fitness of tribal students. From the result of the present study, it was speculated that the observed significant difference in minimum muscular fitness of tribal students. The present study comprises the study of tribal life and their relation to fitness in historical as well as in modern perspective. But now a day tribal people are lose their fitness because of model lifestyle. (Thakur, 1994) The flexibility item not only accounted for the greatest number of these failures, but at every age level caused the girls to appear more "muscularly fit" than the boys. From the result of the present study, it was speculated that the observed significant difference in minimum muscular fitness of tribal students.

KEYWORDS: Minimum Muscular Fitness, Abdominal Plus, Abdominal Minus, Psoas, Upper Back, Lower Back And Length Of Back And Hamstring Muscles, Tribal Students.

INTRODUCTION

The tribal people being the original inhabitants of India constitute a significant part of this vast Nation. They have been dwelling in the forests surrounded by hills for a long period. Their social structure, their culture and their language are quite different from the general people of India. In course of time, in the post- Independence age, a lot immense endeavours of the Government for their socio-economic development. But, in spite of all endeavours, they are still poor as well as illiterate and are far from the mainstream of Indian society. Keeping in view these facts and figures; the researcher has deigned present a study. The present study comprises the study of tribal life and their relation to fitness in historical as well as in modern perspective. But now a day tribal people are lose their fitness because of model lifestyle.(Thakur,1994)

METHODOLOGY

Experimental Approach to the Problem and design

In order to address the hypothesis presented herein, we selected 1000 Tribal students were selected from The Nilgiris. The evaluated minimum muscular fitness was assessed by Kraus Weber test. Kraus Weber test is a pass or fail test consists of six test items such as abdominal plus (or) hip flexors, abdominal minus (or) abdominals and hip flexors, psoas and lower abdomen (or) abdominals, upper back, lower back and length of back and hamstring muscles (or) flexibility.

STATISTICAL ANALYSIS

The data collected from the subjects was statistically analyzed with descriptive statistics was used to calculate percentage of minimum muscular fitness variables.

FINDINGS

For this study, 1000 school boys (age 14-17) were selected at random from the Nilgiris district. All the six Kraus –Weber test items, namely, Abdominal plus, Abdominal minus, Psoas & lower abdomen, Upper back, Lower back and length of the back in hamstring muscle tests were tested on each subject. The results obtained by analysis of data are given in table.

TABLE – 1
PERCENTAGE OF PASS AND FAILURE IN EACH AGE GROUP

S.No	Age Group	Total No. of Students	Pass	fail	% of Pass	% of fail
1	14	360	192	168	53.33	46.66
2	15	280	157	123	56.07	43.92
3	16	206	133	73	64.56	35.43
4	17	154	103	51	66.88	33.11

Table I reveals that the percentage of pass and fail in each age group in minimum muscular fitness test. The results of survey indicated that among the one thousand students, 585 passed and 415 failed, that is, (58.5 percent) and (41.5 percent) respectively. In 14 years age group, 360 students were tested, among them, 53.33% (192) students passed and 46.66% (168) failed. In 15 years age group, 280 students were tested, among them, 56.07% (157) students passed and 43.93% (123) failed. In 16 years age group, 206 students were tested, among them, 64.56% (133) students passed and 35.43% (73) failed. In 17 years age group, 154 students were tested, among them, 66.88% (103) students passed and 33.11% (51) failed.

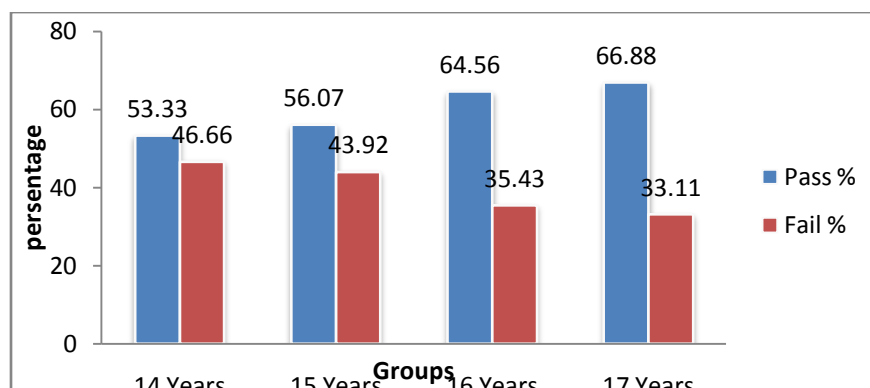


Figure – I

Bar diagram showing the age wise percentage value on pass and fail of tribal students (Scores in numbers)

TABLE 2
PERCENTAGE OF FAILURE IN EACH TEST ITEM IN EACH AGE GROUP

Test	14 years 168		15 years 123		16 years 73		17 years 51	
Pass/fail	Pass %	Fail %	Pass %	Fail %	Pass %	Fail %	Pass %	Fail %
A +	85.71	14.28	91.86	8.13	79.45	20.54	78.43	21.56
A -	42.85	57.14	43.08	56.91	34.24	65.73	33.33	66.66
Psoas	38.09	61.90	47.15	52.84	57.53	42.46	39.21	60.78
UB	65.47	34.52	57.72	42.27	67.12	32.87	74.50	25.49
LB	50	50	56.91	43.08	63.01	36.98	52.94	47.05
BHM	19.04	80.95	27.64	72.35	10.95	89.04	25.49	74.50

Table II indicates the percentage of failure in each test item in each age group

14 years age group

In the 14 years age group, 85.71% (144) of boys passed in first test items and 14.28% (24) of boys failed in first test item, 42.85% (72) of boys passed in second test item and 57.14% (96) of boys failed in second test item, 38.09% (64) of boys passed in third test item and 61.90% (104) of boys failed in third test item, 65.47% (110) of boys passed in fourth test item and 34.52% (58) of boys failed in fourth test item, 50% (50) of boys failed in fifth test item and 50% (84) of boys failed in fifth test item and 19.04% (32) of boys passed in sixth test item 80.95% (136) of boys failed in sixth test item.

15 years age group

In the 15 years age group, 91.86% (133) of boys passed in first test items and 8.03% (10) of boys failed in first test item, 43.08% (53) of boys passed in second test item and 56.91% (70) of boys failed in second test item, 47.15% (58) of boys passed in third test item and 52.84% (65) of boys failed in third test item, 57.72% (71) of boys passed in fourth test item and 42.27% (52) of boys failed in fourth test item, 56.91% (70) of boys failed in fifth test item and 43.08% (53) of boys failed in fifth test item and 27.64% (34) of boys passed in sixth test item 72.35% (89) of boys failed in sixth test item.

16 years age group

In the 16 years age group, 79.45% (58) of boys passed in first test items and 20.54% (15) of boys failed in first test item, 34.24% (25) of boys passed in second test item and 65.73% (48) of boys failed in second test item, 57.53% (42) of boys passed in third test item and 42.46% (31) of boys failed in third test item, 67.12% (49) of boys passed in fourth test item and 32.87% (24) of boys failed in fourth test item, 63.01% (46) of boys failed in fifth test item and 36.98% (27) of boys failed in fifth test item and 10.95% (8) of boys passed in sixth test item 89.04% (65) of boys failed in sixth test item.

17 years age group

In the 17 years age group, 78.43% (40) of boys passed in first test items and 21.56% (11) of boys failed in first test item, 33.33% (17) of boys passed in second test item and 66.66% (34) of boys failed in second test item, 39.21% (20) of boys passed in third test item and 60.78% (31) of boys failed in third test item, 74.50% (38) of boys passed in fourth test item and 25.49% (13) of boys failed in fourth test item, 52.94 (27) of boys failed in fifth test item and 47.05% (24) of boys failed in fifth test item and 25.49% (13) of boys passed in sixth test item 74.05% (38) of boys failed in sixth test item.

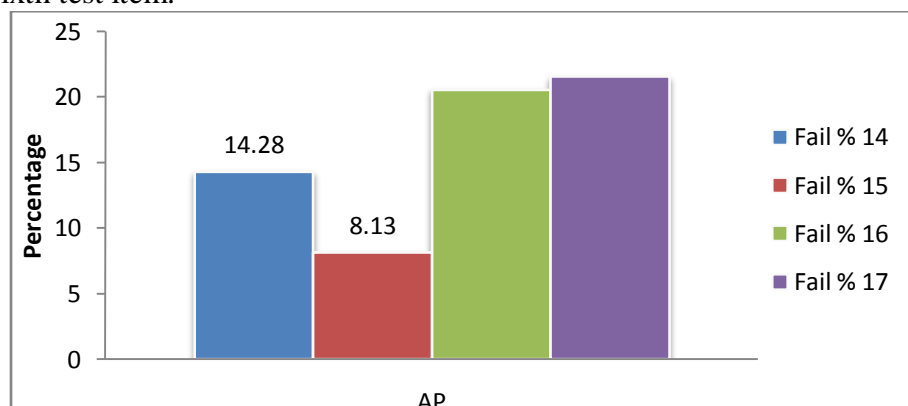


Figure – 2

Bar diagram showing the abdominal pulse fail percentage of tribal students (Scores in numbers)

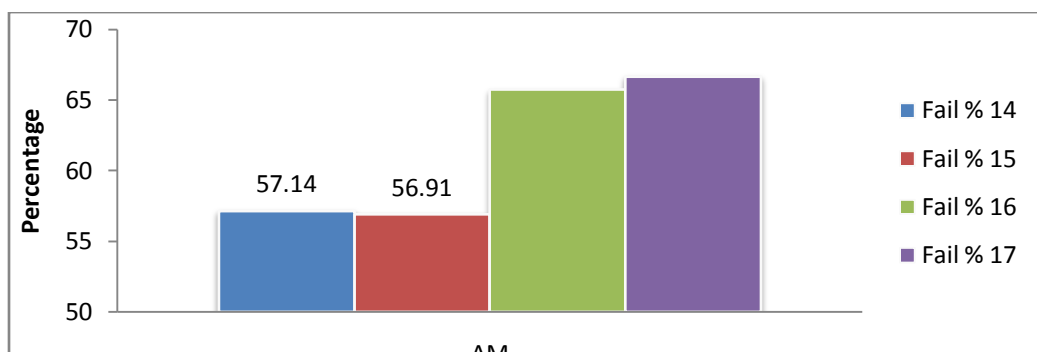


Figure – 3

Bar diagram showing the abdominal minus fail percentage of tribal students (Scores in numbers)

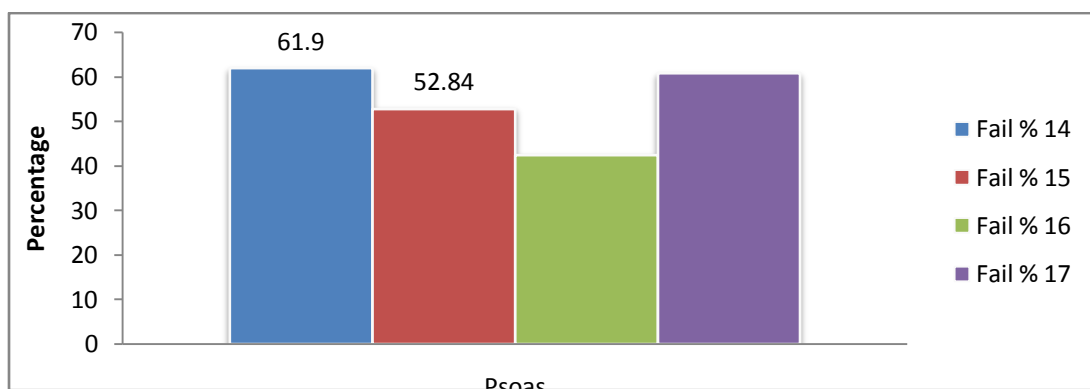


Figure – 4

Bar diagram showing the psoas fail percentage of tribal students (Scores in numbers)

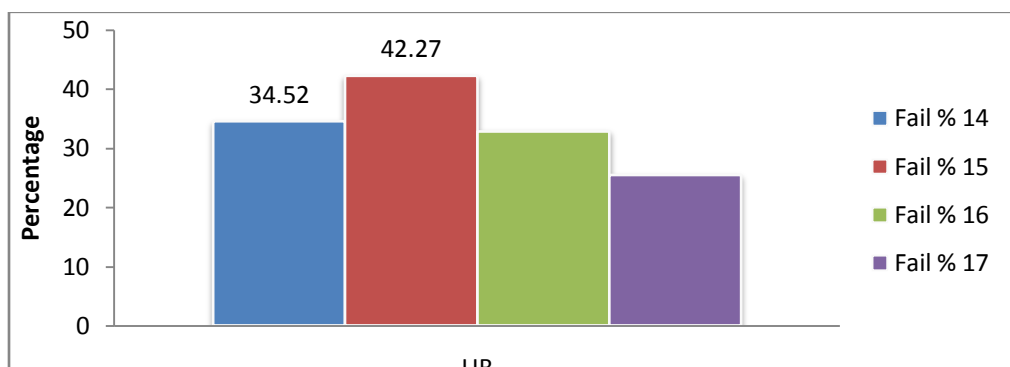


Figure – 5

Bar diagram showing the upper back fail percentage of tribal students (Scores in numbers)

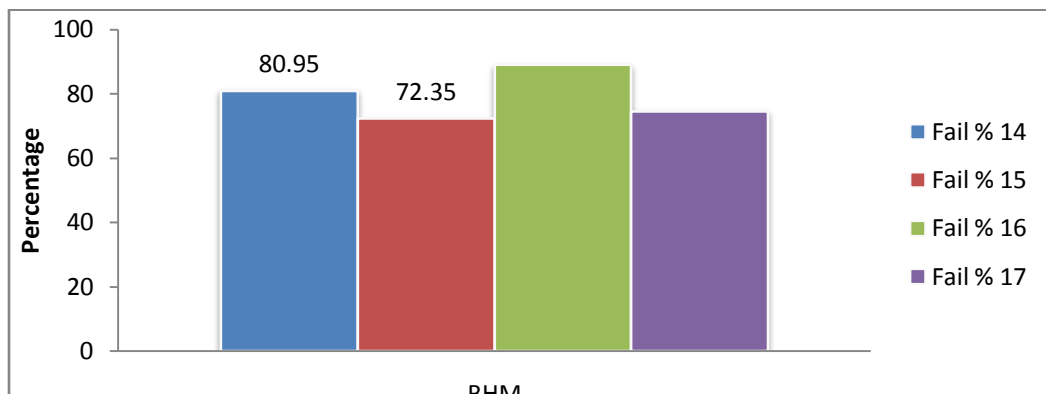


Figure – 6

Bar diagram showing the lower back fail percentage of tribal students (Scores in numbers)

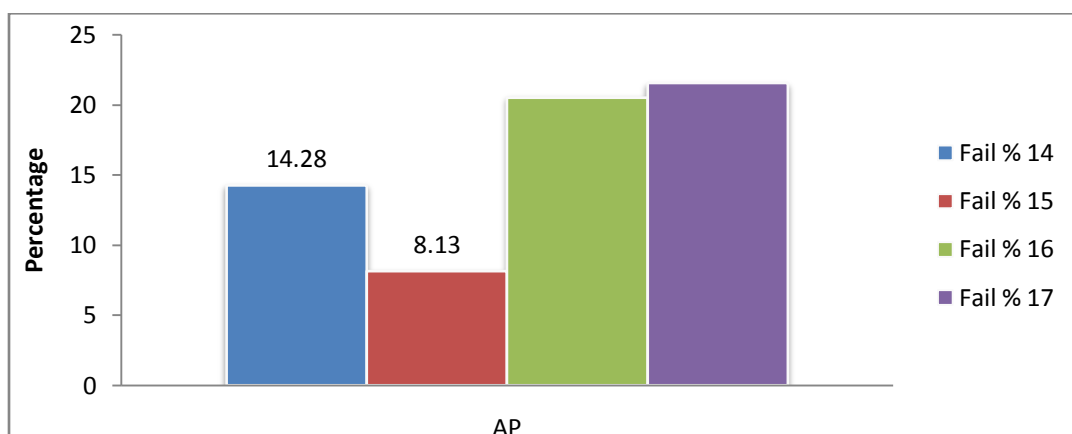


Figure – 5

Bar diagram showing the back hamstring muscle fail percentage of tribal students (Scores in numbers)

DISCUSSION AND FINDINGS

The present study experimented the survey minimum muscular fitness of Tribal boys in the Nilgiris. The finding of the present study had similarity with the findings of the investigators referred in this study **Prasad.**, (2013) these studies conclude that the minimum muscular fitness of the students belonging to private schools was good and they can do their daily task in a useful manner. **Gharote. (2000)** The results revealed that 20.8 per cent boys failed in the tests. Multiple failures were 4.8 percent while flexibility failures alone were 11.6 percent. Boys at the age of 15 years failed more in flexibility test. **Corlett et al., (1985)** evaluated two hundred and eighty-nine urban school children in Botswana was tested for their ability to perform tests of minimum muscular fitness. These results suggest a potential for lower back distress or disability and are perhaps indicative of a general low level of physical fitness in both boys and girls. **Glenn et al., (1957)** studied Of the 455 Eugene children who failed the Test, 78.7 per cent failed only one item. The flexibility item not only accounted for the greatest number of these failures, but at

every age level caused the girls to appear more “muscularly fit” than the boys. From the result of the present study, it was speculated that the observed significant difference in minimum muscular fitness of tribal students.

CONCLUSION

The minimum muscular fitness of tribal students (age 14-17 years) was not similar. Further, it is concluded that the 41.5% of tribal students in the Nilgiris district failed in minimum muscular fitness.

REFERENCE

1. Thakur D.N. Tribal Life and Forests, **Deep and Deep Publications Pvt. Ltd.**, ISBN 978-81-8450-104-9 Vol. 1.
2. Sambhu Prasad., (October, 2013) A Survey of Minimum Muscular Strength on School Children in Pune District **Journal of Multidisciplinary Engineering Science Studies** Vol. 2 no. 2 P-ISSN: 2278-0793 and E-ISSN: 2321-3779.
3. Gharote M.M., Minimum muscular fitness in school children. **Indian Journal Physiology Paramedical**. 2000 Oct; 44(4):479-84.
4. Corlett JT. Minimum muscular fitness of urban Tswana children. **Child Care Health Development**. 1985 Jan-Feb; 11(1):37-43.
5. Glenn Kirchner., Don Glines Comparative Analysis of Eugene, Oregon, Elementary School Children Using the Kraus-Weber Test of minimum muscular fitness American Association for Health, **Physical Education and Recreation** volume 28, 1957. Issue 1.



STUDY ON CARDIOVASCULAR ENDURANCE AGILITY AND STRENGTH AMONG INTER COLLEGIATE KABADDI AND KHO-KHO PLAYERS

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ABSTRACT

The purpose of the present study was to determine the cardio vascular endurance agility and strength among inter collegiate Kabaddi and Kho-kho players. To achieve the purpose of this study 30 kabaddi and 30 Kho-kho intercollegiate players from affiliated colleges of Bharathiar University, were selected as subjects their age ranged from 18 to 25 years. The subjects were divided into two groups namely Group-I Kabaddi players and Group-II Kho-kho players. The following variables are selected namely Cardio vascular endurance, Agility and leg strength were the variables of this study. The data were collected on selected criterion variables and they were statistically analyzed by using 't' ratio. All subjects are participated in 12 min cooper run and walk test was measured by cardiovascular endurance, shuttle run was measured by Agility, 1 Rm leg press was measured by Leg strength. The selected criterion variables was statistically analyzed by using 't' ratio were used to find out the percentage of cardio vascular endurance agility and Leg strength among inter collegiate Kabaddi and Kho-kho players in affiliated colleges of Bharathiar University, Coimbatore. The obtained 't' ratio was 1.67 on cardio vascular endurance, 4.37 on agility, 3.11 on leg strength among inter-collegiate Kabaddi and Kho-kho players. In all the cases 0.05 level of confidence was fixed to test of the significance.

KEYWORDS: Cardio vascular endurance, Agility, Leg strength, Kabaddi players and Kho-kho Players.

INTRODUCTION

Physical fitness involves the performance of the heart lungs and muscles of the body physical fitness is necessary for success in all game and sports. In addition to bringing about better performance in games and sports, also help in prevention of the injuries in the long run. In need to perform well in a game one must be physically fitness and it protects him from injury. Physical fitness is a means to share greater responsibility without undue stress, fatigue and help in the quality of health and well being. Physical education activities and programs are rendering valuable service to the man in improving their health and life style. Sometimes the lack of regular exercise results in chronic fatigue. Regular participation in physical exercise and its activities enhance the level of physical fitness. If an individual wants to lead a healthy and prosperous life he has to be physically fit that is the way of wellness and wellbeing.

According [Howley T, 1943], Physical fitness components and specific training package of technical skills are very important factors for athletes. These components of training package are important are more important to the athletes in the competition periods and for the development of their technical skills.” physical fitness is one’s richest possession and cannot be purchased; it has been earned through a daily routine of physical exercise”.

The aim of physical education should be practically the same as the general education. Physical education is an integral part of education through interest and self directed activity on the part of the pupils. It is only through activity on the part of the pupils. it is only through activity of the learner that education takes place. Physical education needs the accumulation of wholesome experience through large muscle activities that optimum growth development.

METHODOLOGY

The purpose of study was to compare the selected physical and physiological variables among kabaddi and Kho-kho players at intercollegiate level. To achieve the purpose of this study 30 kabaddi and 30 Kho-kho intercollegiate players from affiliated colleges of Bharathiar University were selected as subjects. Their age ranged from 18 to 25 years. Cardiovascular endurance, agility and leg strength were assessed on 30 kabaddi and 30 Kho-kho players at inter collegiate level. Cardiovascular endurance assessed by cooper test, agility was assessed by shuttle run and leg strength was assessed by 1 RM leg press.

TABLE – 1
COMPUTATION OF ‘T’ RATIO OF CARDIOVASCULAR ENDURANCE BETWEEN
KABADDI AND KHO-KHO PLAYERS

	N	Mean	Std. Dev	Std. Error	t-ratio	Table value
Kabaddi	30	2744	290.23	52.98	1.67	2.047
Kho-Kho	30	2865	231.14	42.20		

* Significance at 0.05 level (2, 047)

Table 1 indicate that the mean values of cardiovascular endurance for Kabaddi and Kho-Kho players were 2744 and 2865 respectively. The obtained t-ratio value was 1.67 on cardiovascular

endurance. The required table value is 2.047, it was insignificant at 0.05 level of confidence for the degrees of freedom 2 and 58. The result clearly shows that there was no significant difference between Kabaddi and Kho-Kho players on cardiovascular endurance.

TABLE - 2
COMPUTATION OF T-RATIO OF AGILITY BETWEEN KABADDI
AND KHO-KHO PLAYERS

	N	Mean	Std. Dev	Std. Error	t-ratio	Table value
Kabaddi	30	11.22	.5059	.092	4.37	2.047
Kho-Kho	30	10.78	.2798	.051		

*Significance at 0.05 level (2,047)

Table 2 shows that the mean values of agility for Kabaddi and Kho-Kho players were 11.22 and 10.78 respectively. The obtained t-ratio value was 4.37 on agility. The required table value was 2.047, it was significant at 0.05 level of confidence for the degrees of freedom 2 and 58. The result of the study shows that there was significant difference between Kabaddi and Kho-Kho players on agility.

TABLE - 3
COMPUTATION OF T-RATIO OF LEG STRENGTH BETWEEN KABADDI AND
KHO-KHO PLAYERS

	N	Mean	Std. Dev	Std. Error	t-ratio	Table value
Kabaddi	30	129	27.88	5.09	3.11	2.047
Kho-Kho	30	112	15.92	2.90		

*Significance at 0.05 level.(2,047)

Table 3 show that the mean values of leg strength for Kabaddi and Kho-Kho players were 129 and 112 respectively. The obtained t-ratio value was 3.11 on leg strength. The required table value was 2.047, hence it was significant at 0.05 level of confidence for the degrees of freedom 2 and 58. The result of the study shows that there was significant difference between Kabaddi and Kho-Kho players on leg strength.

RESULTS

Table-I showed that the results of the study there was a No significant difference between group on cardiovascular endurance of Kabaddi and kho-kho players. Further the results of the study showed that there was a significant improvement on Agility and leg strength of Kabaddi players better than the kho-kho players.

CONCLUSION

It was concluded that there was no significant difference in cardiovascular endurance among kabaddi and kho-kho- players. It was also concluded that there was a significant difference in

agility among kabaddi and kho-kho players. Further it was also concluded that there was a significant difference in leg strength among kabaddi and kho-kho players.

REFERENCES

1. Banister, E. W.,.: **Effects of stimulated altitude training on aerobic and anaerobic power.** Europ.J. Appl.Physiol. 38,55,1978.
2. Barrow, Harold M. Raosomany **“A physical approach to measurement in physical education” Philadelphia, lea and Fibiger, 1964**
3. Bowarrd john F.Freederich W., **“Test and measurement in physical education” philadelphia, W.b. sounders company,**
4. Child, J.s., et al: **cardiac Hypertrophy and function in master endurance runners and sprinters. J Appl. Physiol., 47, 176,1984.**
5. Costtill, D.L and Fox, E.L: **Energetics of marathon runningMed.Sci.Sports,1,81,1969.**



EFFECT OF AEROBIC TRAINING ON PHYSICAL FITNESS COMPONENTS AND PHYSIOLOGICAL VARIABLES AMONG PHYSICAL EDUCATION STUDENTS OF ANNAMALAI UNIVERSITY

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ABSTRACT

The purpose of the present study was to investigate the effect of Aerobic training on physical fitness and physiological variables among physical education students of Annamalai University. To achieve the main purpose of the study, 40 male students were selected from Annamalai University which serves as subjects and their age group is between 18 to 25 years. The selected subjects were divided into two groups, experimental group and control group. 20 male students were selected from each group which serves as subjects. The experimental group goes through special Aerobic training practices, for six weeks which was considered adequate to show changes if any. The control group was not given any special training programmer apart from their regular activities. the physical variables which were examined during the study were Strength, Agility, Hemoglobin and cardio –vascular endurance. All the data which was collected during training programmer were examined by analyzing "t" test to find out whether any significance difference is found between the means of pre and post test score of both groups within the period of six weeks of aerobic training programmer. The level of confidence was fixed at 0.05.

KEYWORDS: Aerobic Training, Physical Fitness, Physiological Variables.

INTRODUCTION

The training is a process of preparing an individual for any event or an activity or job. Usually in sports we use the term sports training which denote the sense of preparing sportspersons for the highest level of performance. But now-a-days sports training is not just a term but it is very important subject that affects each and every individual who takes up physical activity or sports either for health and fitness or for competition at different level. Hence sports training is the physical, technical, intellectual, psychological and moral preparation of an athlete or a player by means of physical exercises. According to Harre (1982) sports training is a process of athletic improvement, which is conducted on the basis of scientific principle through which systematic development of mental and physical efficiency, capacity and motivation enables athletes to produce outstanding and record breaking athletic performances. Thus, we can say that sports training is the overall scientific and systematic channel of preparation of sportspersons for the highest level of sports performance. Sports training also consist of all those learning influences and processes that are aimed at enhancing sports performance. In the earliest beginning man was an integral part of nature and even today his behavior reveals strong parallels with that of animals. Theses parallels can be seen in many of his games involving movements for the animal world too, has its dance, its contest and its play, including ceremonial forms of challenge, greetings defense and triumphs. The specific evolution of man and human society however, led him to develop his instinctive games and create new forms of them, one of which grew into modern sports. At the first stage of evolution man improved the movements and features which distinguish him from the around him: upright posture, prehensile hands and potential reasoning power. Movements are the prime basis and supreme dynamics of intra and inter personal living, learning and language.

The training is defined as an organized instruction, a teaching learning process (repetitive practice of skills) aiming at performance enhancement in any field of human activity precisely. Precisely, it is a methodical way of preparing oneself to achieve some pre-determined goals. A soldier trains to fight in war, a teacher trains to communicate things to students, a pilot trains to fly an aero plane, a mechanic trains to repair an automobile and on athlete trains to run marathon or play soccer etc. in each acquisition course, which includes learning, practice and testing procedures enabling the trainees to be qualified and competent to handle the specific jobs successfully. Usually in sports we use term sport training which denote the sense of preparing sports persons for the highest level of performance. But nowadays sports training are not just a term but is very important subject that affects each and every individual who takes up physical activity or sports either for health and fitness or for competition at different level.

AEROBIC TRAINING:

Ever increasing industrialization and more sedentary lifestyles along with many of the customs of our consumer society have brought about an increase in recent decades of so-called, “diseases of civilization” (i.e. diabetes, hypertension, arteriosclerosis, obesity, high cholesterol, etc). in spite of may information programs about the benefits of exercise during midlife, statistics reveal that few people in this age group take part in exercise programs during their leisure time.

The positive effects of regular aerobic exercise on health have been demonstrated in many studies. Nevertheless, the effects of physical activity on the different body systems differ depending on duration intensity, number of sessions, type of exercise, and age. Most of these studies were performed with young subjects and in some cases, a geriatric population, but very

few were performed esthetic studies are carried out with well-controlled groups (with good situation. However, in real life situations, physicians see “normal” midlife people who exercise a few times per week, without professional supervision. It is of interest to know the effects of aerobic exercise are as positive in these cases as in the scientific studies.

Dynamic aerobic exercise is defined as rhythmic contractions of skeletal muscle, with an intensity that would not produced an accumulation of lactate in blood, and could be maintained at least 20 minutes. Aerobic metabolism increases in proportion to the mass of muscle involved and the intensity of exercise. Blood flow is more than tenfold, due to a decreased arterial resistance and opening or dilatation of the capillary beds of working muscle, Cardiac output and heart rate increase three to four times with increasing oxygen uptake, whereas stroke volumes increases only to a minor extent.

DEFINITIONS OF IMPORTANT TERMS:

All the important, technical and relevant terms occurring in this study are defined as under.

1. **Training:** Training is usually defined as a systematic process of respective progressive exercise on work, involving process of learning and acclimatization.
2. **Aerobic Training:** Any exercise which is done in the presence of oxygen is known as Aerobic training.
3. **Physical Fitness:** The ability to carry out daily tasks with vigor and alertness without undue fatigue, with ample energy to enjoy leisure time pursuits, and to meet unforeseen emergencies.
4. **Strength:** It is the ability to exert force against resistance.
5. **Maximum Strength:** The greatest force that is possible to overcome a resistance in a single maximum contraction.
6. **Agility:** The speed with which an individual may change his body positions or fastness in changing directions while moving is known as agility.
7. **Physiology:** Physiology is the science which deals with the study of functions of the human body.
8. **Cardiovascular Endurance:** Cardiovascular endurance is the ability of heart and lungs to take in and to transport adequate amount of oxygen to working muscles for activities to be performed over a long period of time.
9. **Hemoglobin:** A Complex molecule found in red blood cells, which contain iron (Haeme) and protein (Globin) and is capable of combining with oxygen. The largest part of oxygen which transport blood is held in the red cell by the substance is called Hemoglobin.

METHODOLOGY

The purpose of this study was to find out the effect of six week (42 days) Aerobic training on physical fitness components and physiological variables. The data collected qualitatively on four different test of strength, Agility, hemoglobin and cardio-Vascular endurance of control group – A (N=20), and experimental groups (N=20) were analyzed by using the ‘t’ test and post-test means of both groups to find out the significant difference among the selected variables as strength, Agility, hemoglobin, cardio-Vascular endurance of two groups of students of

Annamalai University and the subjects were selected by using Random sampling method from Physical Education and Sports Sciences department. To test the hypothesis the level of significance was set at 0.05 level of confidence which was considered adequate and reliable for the purpose of this study.

ANALYSIS OF THE DATA

Mean difference, Standard deviation and t-test scores were obtained. The same procedure was adopted for test wise statistical analysis.

TABLE - 1
STRENGTH BETWEEN POST TEST OF CONTROL AND
EXPERIMENTAL GROUP

Group	Mean	S.D.	S.E. Comb.	M.D.	D.F.	O.T.	T.T.
Control	35.200	3.381	1.090	.100	38	.092	2.021
Experimental	35.300	3.511					

*Level of Significance = 0.05

Tabulated 't' 0.05 (38) = 2.021

Table-1 reveals that there is no significant difference between means of post test of control and experimental group, because mean of post test of control group is 35.200 is slightly less than mean of post test of experimental group is 35.300, and there mean difference is .100. To check the significant difference between post tests of control and experimental group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between post tests where S.D. (Control group) = 3.646 and S.D. of (experimental group) = 3.511 and their Combine standard error = 1.090. There was no significant difference between post tests of control and experimental group because value of calculated 't' = .092 which is less than tabulated 't' = 2.021 at 0.05 level of confidence, which shows no improvement was found in experimental group after six weeks aerobic training.

Graph 1

Graphical Representation of Mean Difference between Pre and Post Test of Control and Experimental Group for Strength

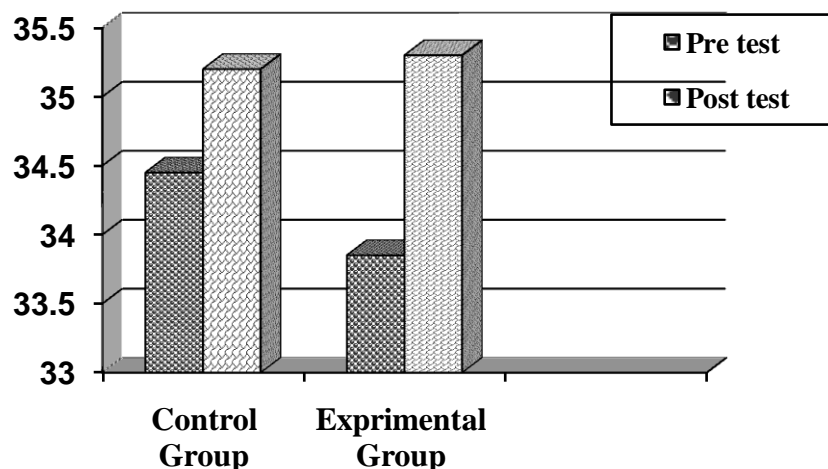


TABLE 2
AGILITY BETWEEN POST TESTS OF CONTROL
AND EXPERIMENTAL GROUP

Group	Mean	S.D.	S.E. Com b.	M.D.	D. F.	O.T.	T.T.
Control	12.412	1.366	.426	1.572	38	3.686	2.021
Experimental	10.840	1.331					

*Level of Significance = 0.05

Tabulated 't' 0.05 (38) = 2.021

Table-2 reveals that there is significant difference between means of post test of control and experimental group, because mean of post test of control group is 12.412 is greater than mean of post test of experimental group is 10.840, and there mean difference is 1.572. To check the significant difference between post tests of control and experimental group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between post tests where S.D. (Control group) = 1.366 and S.D. of (experimental group) = 1.331 and their Combine standard error = .426. There was significant difference between post tests of control and experimental group because value of calculated 't' = 3.686 which is greater than tabulated 't' = 2.021 at 0.05 level of confidence, which shows improvement in agility was found in experimental group due to six weeks and aerobic training and no improvement in agility was found in control group.

Graph 2

Graphical Representation of Mean Difference between Pre and Post Test of Control and Experimental Group for Agility

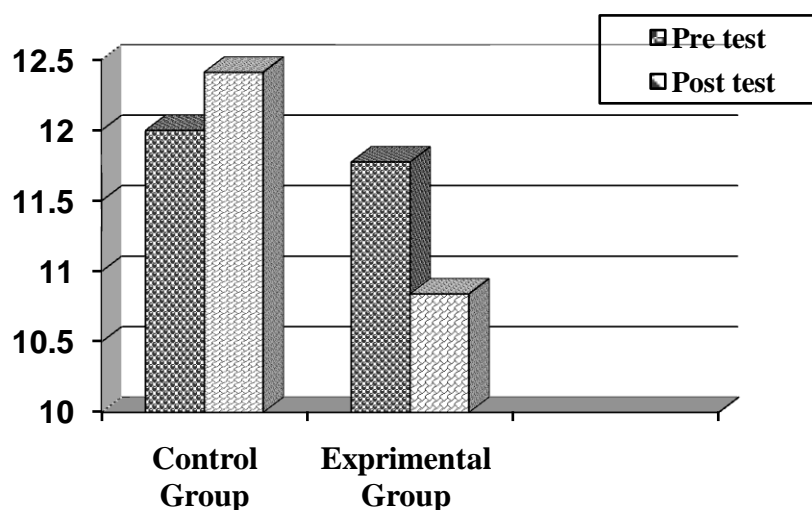


TABLE 3
HEMOGLOBIN BETWEEN POST TESTS OF CONTROL
AND EXPERIMENTAL GROUP

Group	Mean	S.D	S.E. Comb	M.D	D.F	O.T.	T.T.
Control	14.41 0	.66 6	.046	.910	38	4.11 7	2.02 1
Experimental	15.32 0	.68 4					

*Level of Significance = 0.05

Tabulated 't' 0.05 (38) = 2.021

Table-3 reveals that there is least significant difference between means of post test of control and experimental group, because mean of post test of control group is 14.410 is greater than mean of post test of experimental group is 15.320, and there mean difference is .910. To check the significant difference between post tests of control and experimental group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between post tests where S.D. (Control group) = .022 and S.D. of (experimental group) = .023 and their Combine standard error = .046. There was significant difference between post tests of control and experimental group because value of calculated 't' = 4.117 which is greater than tabulated 't' = 2.021 at 0.05 level of confidence, which shows improvement in hemoglobin percentage among experimental group due to six weeks aerobic training and no improvement in Hemoglobin was found in control group.

Graph 3

Graphical Representation of Mean Difference between Pre and Post Test of Control and Experimental Group for Hemoglobin Table 12

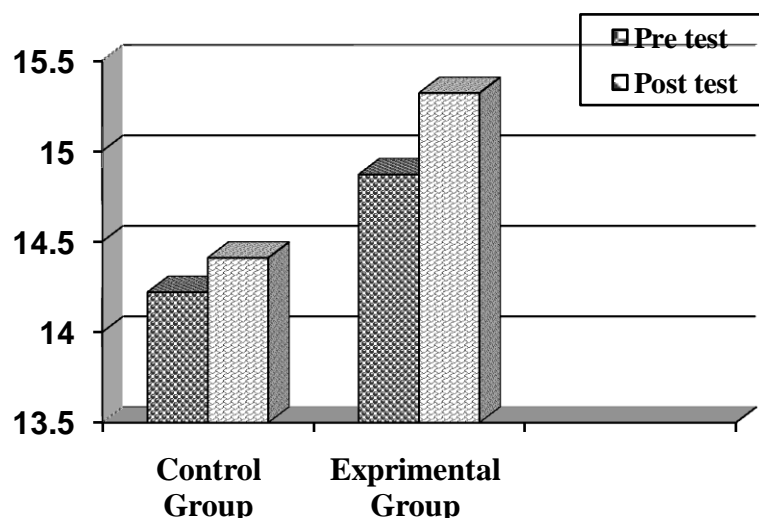


TABLE - 4
CARDIO-VASCULAR ENDURANCE BETWEEN POST TEST
OF CONTROL AND EXPERIMENTAL GROUP

Group	Mean	S.D.	S.E. Co mb.	M.D.	D.F.	O.T.	T.T.
Control	101.099	12.262	2.799	7.011	38	2.279	2.021
Experimental	94.088	6.238					

*Level of Significance = 0.05

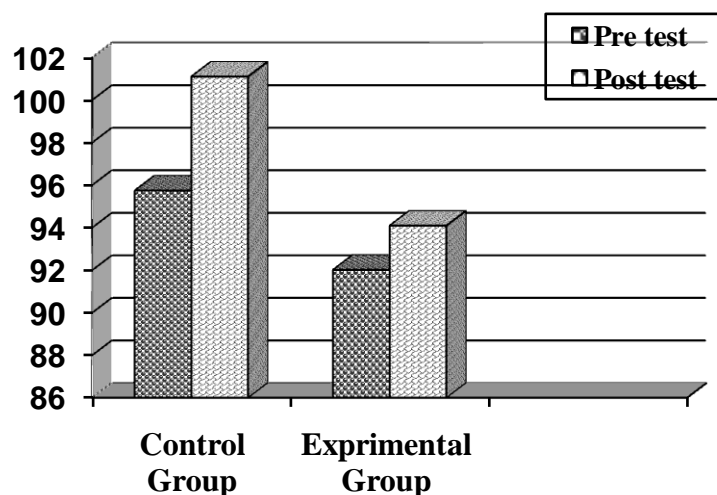
Tabulated 't' 0.05 (38) = 2.021

Table-4 reveals that there is significant difference between means of post test of control and experimental group, because mean of post test of control group is 101.099 is greater than mean of post test of experimental group is 94.088, and there mean difference is 7.011. To check the significant difference between post tests of control and experimental group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between post tests where S.D. (Control group) = 12.262 and S.D. of (experimental group) = 6.238 and their Combine standard error = 2.799. There was significant difference between post tests of control and experimental group because value of calculated 't' = 2.279 which is greater than tabulated 't' = 2.021 at 0.05 level of confidence, which shows improvement in Cardio-Vascular

Endurance among experimental group due to six weeks aerobic training and no improvement in Cardio-Vascular Endurance was found in control group.

Graph 4

Graphical Representation of Mean Difference between Pre and Post Test of Control and Experimental Group for Cardio-Vascular Endurance



DISCUSSION ON FINDINGS:

It has been observed from the analysis of data that there was significant difference between the same variables among the groups after the administration of training programme except strength. And there was no improvement in strength.

For Strength:

The results showed that there was no significant improvement within and among the groups. It has been found that the strength remain similar as before and after training.

For Agility:

The agility showed significant improvement as the planned training program shows the significant effect. Hence aerobic training program of six weeks was adequate for agility.

For Hemoglobin:

The Hemoglobin showed significant improvement as the planned training program shows the significant effect. Hence aerobic training program of six weeks was adequate for Hemoglobin.

For Cardio-Vascular Endurance:

The Cardio-Vascular endurance showed significant improvement as the planned training program shows the significant effect. Hence aerobic training program of six weeks was adequate for Cardio-Vascular endurance.

CONCLUSION

It was concluded that the influence of aerobic training on physical fitness components among physical education students shows tremendous changes. So it is further recommended for further studies among various players and the various field of physical Education.

REFERENCES

1. ADAMS W. C., "RELATIONSHIP AND POSSIBLE CASUAL EFFECT Of Selected Variables To Treadmill Endurance Running Programme", Research Quarterly, Vol.38, No. I, March 1969, pp. 515-526.
2. Auderey Miller, "Effect of Endurance training on the cardiovascular system and body composition of sown syndrome adolescents and young adults". Dissertation abstracts international. Vol. 46, No. 6, December 1985
3. Aurang Amit, "Effect Of Continuous And Alternate Pace Endurance Training On Selected Physical And Physiological Variables Of Long Distance Runners", Unpublished Masters Dissertation, Sant Gadge Baba Amravati University, Amravati. March 2006.
4. Bobo M. ET. al., "The Effects Of Long Term Aerobic Dance On Agility And Flexibility", Journal Of Sports Medicine And Physical Fitness, Vol. 39, No. 3, 1999.
5. Bucher C. A. et.al. Foundation of Physical Education and Sports, New York: Times Mirror Mosby College Publishing, 10th Edition, 1987.



INFLUENCE OF ISOLATED AND COMBINED AEROBICS AND PROGRESSIVE MUSCULAR RELAXATION TRAINING ON SELECTED MOTOR FITNESS AND PSYCHOLOGICAL VARIABLES AMONG COLLEGE WOMEN STUDENTS

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ABSTRACT

The aim of this study was to find out the influence of isolated and combined aerobics and progressive muscular relaxation training on selected motor fitness and psychological variables among college women students. 100 college women students were selected from Thiruthangal Nadar College as subjects. They were assigned into four equal groups, aerobic training, progressive muscular relaxation training, combined aerobics and PMR training and control group. Pre tests on muscular endurance, muscular strength, self-confidence and stress management post tests immediately after 12 weeks training scores on dependent variables were statistically analyzed. The results proved that experimental treatments isolated and combined aerobics and PMR trainings have improved college women students muscular endurance, muscular strength, self-confidence and stress management compared to control group and the differences were significant. The paired mean comparisons done through post hoc analysis proved that isolated aerobic training and combined aerobics and PMR training were significantly better than PMR training on muscular endurance and muscular strength. And as for self-confidence and stress management, combined training and PMR was significantly better than isolated aerobics training. It was concluded that isolated and combined aerobics and PMR trainings were found to be more effective in improving muscular endurance, muscular strength, self-confidence and stress management of women college students.

KEYWORDS: Aerobic Exercises, Progressive Muscular Relaxation Training, Muscular Endurance, Muscular Strength, Self-Confidence And Stress Management.

INTRODUCTION

Vigorous training contributes for the blood circulation quickness, blood and lymph stream through the muscle, supply the cells with oxygen and nutrition removing waste products. The heart activity is accelerated exercise and strengthening its own fibers. Exercise also stimulates growth, and strengthens the bones, muscles, ligaments and tendons (Hardayal Singh, 1984).

Aerobics exercise programmes specifically were first promoted by Dr. Kenneth K. Cooper in 1960s, as a type of training designed to strengthen the heart and lungs. Aerobic exercise includes any type of exercise, typically those performed as moderate levels of intensity for extended period of time that maintains an increased heart rate. In such exercises, oxygen is used to 'burn' fats and glucose in order to produce 'adenosine triphosphate', the basic energy carrier for all cells. Initially during aerobic exercise, 'glycogen' is broken down to produce glucose, but in its absence, 'fat' starts to decompose instead. If one wants to lose fat, the most efficient way to do this (according to some scientists), is by executing prolonged exercises when feeling weak and 'hungry'. Some of these exercises include running, dancing, towing, skating and walking. (Donatella, 2005). Aerobics are more efficient method to decrease the percentage of body fat to attain the other metabolic benefits of fitness. It is also a very good way to develop musculoskeletal fitness while building strength, flexibility, balance and coordination. Aerobic exercise has positive effects on stamina, blood pressure, weight, sleep patterns, energy levels, lipid profiles, and can reduce the risk of cardio vascular diseases, diabetes and certain type of cancer. Regular and purposive aerobic exercise improves the heart's pumping efficiency and reduce the resting heart rate by strengthening the heart muscles. It strengthen the muscles involved in respiration to facilitate the flow of air in and out of the lungs, tone muscles throughout the body which can improve overall circulation and reduce blood pressure and increase the total number of red blood cells in the body, to facilitate transport of oxygen throughout the body, regular vigorous aerobic activity can stimulate bone growth, as well as reducing the risk of osteoporosis for both men and women (Donatella, 2005)

Sports and psychomotor skills are hand in hand in human development. In nature psychomotor is a muscular activity associated with mental process that is, the mind which is control behaviour. Psychomotor is an in born skill which influence on complex activity of human beings in their daily life. Such a psychomotor skill when changed its performance as a result if participation in sports, that changes would be the kinaesthetic sense is it psychomotor skill or changes on development of sense, such as kinaesthetic sense. (Uner Tan, (2007) Edmund Jacobson (1938) created the progressive relaxation method. At the beginning of the 20th century, he conceived a method to relax whose goal was to achieve mental tranquility by progressively eliminating all muscular tensions. It's intended to learn to relax step by step all the different groups of muscles. The relaxation works on the Peripheral Nervous System (PNS) the opposite way from stress, so one can't be anxious and relaxed at the same time. (Craske& Barlow (2006)

RELATED REVIEWS

Sandbakk O, et.al. (2010) investigated the relationship between aerobic characteristics and sprint skiing performance, and the effects of high-intensity endurance training on sprint skiing performance and aerobic characteristics and showed shows a close relationship between aerobic power and sprint performance in cross-country skiing and highlights the positive effects of high-intensity endurance training in level terrain.

Baker JS, et.al. (2010) documented a contemporary explanation of the muscle metabolic response to different exercise intensities and durations, with emphasis given to recent improvements in understanding and research methodology.

Zhu W, et.al. (2010) examined the impact of key correlates in school physical education programs and policies on students' fitness status and cross-grade differences.

Behm DG, et.al. (2009) compared the extent of trunk muscle electromyographic (EMG) activity during running and callisthenic activities and found back-stabilizing muscles can be activated more effectively with running than with a prolonged back extension activity. Running can be considered as an efficient, multifunctional exercise combining cardiovascular and trunk endurance benefits.

Caudill, Weinberg, and Jackson (1983) performed two experiments dealing with the method of "psyching up" prior to a sprint race and found concluded that psych up techniques could improve sprint performance but that further research is necessary to determine which techniques have the most positive effect. Anderson (1997) argued a different point of view on psyching up for distance runners. Anderson suggested two techniques for relaxation, progressive muscle relaxation (PMR) and centering and documented these techniques over time can reduce heart rate and muscle tension in distance races, thereby improving performance. Wood (1986) conducted a research on "Evaluation of Meditation and Relaxation on Physiological Response during the Performance of Fine Motor and Gross motor Tasks" and found no significant difference in the performance of either the fine motor or the gross motor task was noted for persons practicing meditation and persons who were non meditators but were given the opportunity to relax prior to a motor task.

The theoretical findings based on previous researches proved that there was further scope for research to find out the influence of isolated and combined aerobics and progressive muscular relaxation training on selected motor fitness and psychological variables among college women students.

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the influence of isolated and combined aerobics and progressive muscular relaxation training on selected motor fitness and psychological variables among college women students.

HYPOTHESIS

It was hypothesized that there was significant difference improvement on selected motor fitness and psychological variables among college women students due to the aerobic exercises, progressive muscular relaxation training and combined training.

METHODOLOGY

For the purpose of the study 100 college women students from Thiruthangal Nadar Colleges in Chennai city were randomly selected in the age group of 19 to 25 years with standard deviation of ± 2.31 . The selected subjects were assigned into four equal groups, namely, experimental group I, II, III and control group consisting of 25 in each. The groups were considered as experimental group I, which underwent aerobic exercises, experimental group II which underwent progressive muscle relaxation training, experimental group III which underwent combined aerobics and progressive muscular relaxation training. Group IV was considered as

control group which did not underwent any specialized training and they were strictly under control of the investigator. Pre tests were conducted for all the subjects on selected motor fitness variables muscular endurance and muscular strength and Psychological variables self-confidence and stress management. This formed initial scores of the subjects. The experimental groups participated in their respective exercises, namely aerobic exercises, progressive muscular relaxation training and combined aerobic and progressive muscular relaxation training for twelve weeks. Immediately after completion of the experimental period, the post tests were conducted on the above said dependent variables after a period twelve weeks on the subjects, which formed final scores of the subjects. The difference between initial and final scores was considered as the effect of respective treatment. To test statistical significance, ANCOVA was used. In all cases 0.05 level was fixed to test the hypothesis of this study.

RESULTS

The statistical analysis comparing the initial and final means of muscular endurance, muscular strength, self-confidence and stress management due to isolated aerobic training (IA), isolated progressive muscular relaxation training (PMR), combined aerobic and progressive muscular relaxation (CAPR) training and control groups (CG) of college women students is presented in Table I& II.

TABLE I: COMPUTATION OF ANALYSIS OF COVARIANCE DUE TO ISOLATED AND COMBINED AEROBIC TRAINING AND PROGRESSIVE MUSCULAR RELAXATION TRAINING

	Aerobic Training s Group	Progressiv e Muscular Relaxation Group	Combine d Training Group	Contro l Group	SO V	Sum of Square s	D F	Mean Square s	Obtaine d F
Muscular Endurance									
Pre Test Mean	16.80	17.16	16.88	16.80	B	2.19	3	0.73	0.08
StdDev	2.40	3.01	2.68	3.56	W	832.00	96	8.67	
Post Test Mean	19.56	18.84	19.52	16.76	B	129.79	3	43.26	4.82*
StdDev	3.07	2.88	2.68	3.71	W	862.32	96	8.98	
Adjuste d Post Test Mean	19.66	18.60	19.55	16.86	B	125.65	3	41.88	31.63*
					W	125.81	95	1.32	
Muscular Strength									
Pre Test Mean	13.00	12.64	13.28	12.72	B	6.35	3	2.12	1.26
StdDev	1.12	1.52	0.98	1.49	W	161.84	96	1.69	
Post Test	14.72	13.72	15.16	12.80	B	83.56	3	27.85	15.24*

Mean									
StdDev	1.31	1.65	0.98	1.44	W	175.44	96	1.83	
Adjusted Post Test Mean	14.67	13.87	14.96	12.90	B	62.34	3	20.78	
					W	128.71	95	1.35	15.34*

SOV: Source of Variance; B: Between W: Within Required $F_{(0.05), (df 3,95)} = 2.70$

* Significant at 0.05 level of confidence

TABLE II: COMPUTATION OF ANALYSIS OF COVARIANCE DUE TO ISOLATED AND COMBINED AEROBIC TRAINING AND PROGRESSIVE MUSCULAR RELAXATION TRAINING (SCORES IN NUMBERS)

	Aerobic Trainings Group	Progressive Muscular Relaxation Group	Combined Training Group	Control Group	SOV	Sum of Squares	DF	Mean Squares	Obtained F
Self-Confidence									
Pre Test Mean	21.15	20.80	20.90	20.70	B	2.24	3	0.75	0.48
					W	117.75	76	1.55	
Post Test Mean	23.10	24.00	23.45	22.00	B	42.74	3	14.25	7*
					W	154.75	76	2.04	
Adjusted Post Test Mean	22.91	24.06	23.44	22.14	B	40.06	3	13.35	11*
					W	91.06	75	1.21	
Stress Management									
Pre Test Mean	32.35	33.50	32.15	32.55	B	21.44	3	7.15	1.21
					W	449.05	76	5.91	
Post Test Mean	34.65	36.20	34.70	32.75	B	119.85	3	39.95	7.91*
					W	383.70	76	5.05	
Adjusted Post Test Mean	34.86	35.58	35.05	32.81	B	87.84	3	29.28	14.80*
					W	148.34	75	1.98	

SOV: Source of Variance; B: Between W: Within Required $F_{(0.05), (df 3,76)} = 2.74$ Required $F_{(0.05), (df 3,75)} = 2.72$

* Significant at 0.05 level of confidence

The obtained results proved that there was significant differences due to isolated and combined aerobics and PMR training among college women students as the obtained F values on adjusted means of muscular endurance was 31.63, muscular strength was 15.34, self-confidence was 11.00 and stress management was 14.80 which were greater than the required F value of 2.70, 2.74 and 2.72. Since significant results were obtained the results were further subjected to post hoc analysis using Scheffe's confidence interval and the results presented in Table III& IV.

TABLE:III SCHEFFE'S POST HOC ANALYSIS MULTIPLE PAIRED MEANS COMPARISONS AMONG ISOLATED AND COMBINED AEROBIC TRAINING, PROGRESSIVE MUSCULAR RELAXATION TRAINING AND CONTROL GROUPS

Aerobic Training Group	Progressive Muscular Relaxation Training Group	Combined Training Group	Control Group	Mean Diff	C.I
Muscular Endurance					
19.66	18.60			1.06*	0.93
19.66		19.55		0.12	0.93
19.66			16.86	2.80*	0.93
	18.60	19.55		0.94*	0.93
	18.60		16.86	1.74*	0.93
		19.55	16.86	2.68*	0.93
Muscular Strength					
14.67	13.87			0.81	0.94
14.67		14.96		0.29	0.94
14.67			12.90	1.77*	0.94
	13.87	14.96		1.10*	0.94
	13.87		12.90	0.96*	0.94
		14.96	12.90	2.06*	0.94

* Significant at 0.05 level.

TABLE: IV SCHEFFE'S POST HOC ANALYSIS MULTIPLE PAIRED MEANS COMPARISONS AMONG ISOLATED AND COMBINED AEROBIC TRAINING, PROGRESSIVE MUSCULAR RELAXATION TRAINING AND CONTROL GROUPS

Aerobic Training Group	Progressive Muscular Relaxation Training Group	Combined Training Group	Control Group	Mean Diff	C.I
Self Confidence					
-	24.06	23.44	-	0.62	1.00
22.91	24.06	-	-	1.15*	1.00
-	24.06	-	22.14	1.92*	1.00
22.91	-	23.44	-	0.53	1.00
-	-	23.44	22.14	1.30*	1.00
22.91	-	-	22.14	0.77	1.00

Stress Management					
-	35.58	35.05	-	0.53	1.27
34.86	35.58	-	-	0.72	1.27
-	35.58	-	32.81	2.77*	1.27
34.86	-	35.05	-	0.19	1.27
-	-	35.05	32.81	2.24*	1.27
34.86	-	-	32.81	2.05*	1.27

* Significant at 0.05 level.

DISCUSSIONS

The results presented in this study proved that experimental treatments isolated and combined aerobic, PMR trainings have improved college women students muscular endurance, muscular strength, self-confidence and stress management compared to control group and the differences were significant at 0.05 level. The paired mean comparisons done through post hoc analysis proved that isolated aerobic training and combined aerobics and PMR training were significantly better than isolated PMR training on muscular endurance and muscular strength. And as for self-confidence and stress management, PMR training and combined aerobics and PMR training was significantly better than isolated aerobics training.

The research findings of Sandbakk O, et.al. (2010) concluded that the effects of high-intensity endurance training on sprint skiing performance and aerobic characteristics and showed a close relationship between aerobic power and sprint performance in cross-country skiing and highlights the positive effects of high-intensity endurance training in level terrain. The findings of Behm DG, et.al. (2009) proved aerobic activity running can be considered as an efficient, multifunctional exercise combining cardiovascular and trunk endurance benefits. The findings of this study proved that isolated and combined aerobics and PMR training were significantly contributed for muscular endurance, muscular strength, self-confidence and stress management of the college women students and the findings were in agreement with the previous researches cited.

CONCLUSION

Isolated and combined aerobics and PMR trainings were found to be more effective in improving motor fitness variables, muscular endurance and muscular strength and psychological variables self-confidence and stress management of women college students.

REFERENCES

1. Hardayal Singh. (1984), **Sports Training – General Theory and Methods**, Patiala: Netaji Subhas National Institute of Sports, P.48
2. Cooper, Kenneth, **Aerobics** (1969).
3. Donatelle, Rebecca, J. (2005). **Health: The Basis**, Pearson Education, Inc., Francisco.
4. ¹Uner Tan, (2007), “The Psychomotor Theory of Human Mind”, **Intern. J. Neuroscience**, 117:1109–1148.
5. Jacobson, E. (1938). **Progressive relaxation**. Chicago: University of Chicago Press

6. Craske& Barlow (2006), **Worry**, Oxford University Press, p. 53,
7. Sandbakk O, et.al. (2010), "Endurance Training and Sprint Performance in Elite Junior Cross-Country Skiers.", *J Strength Cond Res.* 2010 Oct 21.
8. Caudill, D., Weinberg, R., & Jackson, A. (1983).Psyching Up Track Athletes: A Preliminary Investigation.**Journal of Sport Psychology**, 5, 231-235



ANALYSIS OF SOCIO-ECONOMIC STATUS OF STATE LEVEL REFEREES IN FOOTBALL

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ABSTRACT

The purpose of this study was to determine analysis of socio-economic status in state level referees in Football. The subject of fifty referees in Football were selected from project future India (PFI) referees training camp held at Gandhi Nagar Gujarat, march 2017 and Tamil Nadu Football association organised fitness camp held at Chennai march 2017. The age of the subjects ranged from 18 to 35 years. The subjects were further classified at random into participants. The following variables were selected Age Group, Educational Qualification, Occupation, Family Monthly Income, Income Source, Religion, Marital Status, Level of Achievement, Economic status considered by the individuals by themselves, Income, Types of House, Community, Fitness Training and Problems. The questionnaire prepared by the scholar was used to measure the above variables. The collected data were statistically analysed by using descriptive statistics. The result study show that there were more number of state level referees are in the age category of 23-27, with Under Graduate, in private jobs, with a family monthly income of Rs 20,000 to 30,000, and doing 2 hours of fitness training in a day. The following variables were selected for this study Age Group, Educational Qualification, Occupation, Family Monthly Income, Income Source, Religion, Marital Status, Level of Achievement, Economic status considered by the individuals by themselves, Income, Types of House, Community, Fitness Training and Problems.

KEYWORDS: Socio-Economic Status, Referees

INTRODUCTION

Socio – economic status (SES) is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to other, based on income, education, and occupation. When analyzing a family's, the household income, and earner' education and occupation are examined, as well as combined income, versus with an individual, when their own attributes are assessed.

Socioeconomic status is typically broken into three categories (high SES, middle SES, and low SES) to describe the three areas a family or an individual may fall into. When placing a family or individual into one of these categories, any or all of the three variables (income, education, and occupation) can be assessed. Additionally, low income and education have been shown to be strong predictors of a range of physical and mental health problems, including respiratory viruses, arthritis, coronary disease, and schizophrenia. These problems may be due to environmental conditions in their workplace, or, in the case of mental illnesses, may be the entire cause of that person's social predicament to begin with education in higher socioeconomic families is typically stressed as much more important, both within the household as well as the local community. In poorer areas, where food and safety are priority, education can take a backseat. (Elizabeth Boskey, 2015).

REFEREES

Each match is controlled by a referee who has full authority to enforce the Laws of the Game in connection with the match to which he has been appointed.

The term referee originated in association football. Originally the team captains would consult with each other in order to resolve any dispute on the pitch. Eventually this role was delegated to an umpire. Each team would bring their own partisan umpire allowing the team captains to concentrate on the game. Later, the referee, a third "neutral" official was added, this referee would be "referred to" if the umpires could not resolve a dispute. The referee did not take his place on the pitch until 1891, when the umpires became linesmen (now assistant referees). A referee or simply ref is the person of authority in a variety of sports who is responsible for presiding over the game from a neutral point of view and making on-the-fly decisions that enforce the rules of the sport, including sportsmanship decisions such as ejection. The official tasked with this job may be known, in addition to referee, by a variety of other titles as well (often depending on the sport), including umpire, judge, arbiter, arbitrator, linesman, commissaire, timekeeper, touch judge or Technical Official (by the International Olympic Committee).

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the analysis of socio-economic status of state level referees in football.

REVIEW OF RELATED LITERATURE

Vijay Bahadur Singh Bisht (2016) A study was conducted to analyze and compare attitude towards soccer officiating and socio-economic status of Indian soccer referees. Total 200 Indian male, active and retired, FIFA/National Referees (known elite group) and State Football referees, divided into two groups of 100 referees in one group, were taken as subjects. Socio economic status scale (SESS) developed by Rajbir Singh et al. and Attitude Towards Soccer Officiating

Questionnaire, developed by researcher himself with the help of various experts of the field concerned, were used to ascertain the desired variables of the subjects. Results of the study revealed that there was no significant relationship between socio-economic status and attitude towards soccer officiating of Indian soccer referees. Both variables were found to be mutually independent. Most of the, (95%), elite soccer referees had strong attitude towards soccer officiating whereas majority (77%) of state referees were found to be having neutral attitude towards soccer officiating. Majority (92% of elite referees and 95% of state referees) of the Indian soccer referees belonged to middle socio economic status.

METHODOLOGY

To achieve the purpose of the study fifty referees in football. The subject were selected from project future India (PFI) referees training camp held at Gandhi Nagar Gujarat, march 2017 and Tamil Nadu football association organised fitness camp held at Chennai march 2017. The age of the subjects ranged from 18 to 35 years. The following variables were selected for this study Age Group, Educational Qualification, Occupation, Family Monthly Income, Income Source, Religion, Marital Status, Level of Achievement, Economic status considered by the individuals by themselves, Income, Types of House, Community, Fitness Training and Problems. The questionnaire prepared by the scholar was used to measure the above variables. The collected data were statistically analysed by using descriptive statistics.

RESULT AND DISCUSSION

TABLE I
SHOWING VARIABLES, CATEGORY, NUMBERS AND PERCENTAGE

S.NO	Variables	Category	Number (Total 50)	Percentage
1	Age Group	23-27	24	48%
2	Educational Qualification	Under Graduate	31	62%
3	Occupation	Private	30	60%
4	Family Monthly Income	20,000 to 30,000	17	34%
5	Income Source	Father	23	46%
6	Religion	Hindu	39	78%
7	Marital Status	Unmarried	43	86%
8	Level of Achievement	Category-4- State level	28	56%
9	Types of House	Own	41	82%
10	Community	SC/ST	19	38%
11	Fitness Training in day	2 hours per day	27	54%
12	Problems	Finance Related problems	14	28%

The above table show that there were more number of state level referees in the category of 23-27 years with under graduation in private jobs, with a family monthly income 20,000 to 30,000 with income source father belongs to Hindu, unmarried category, qualified with Category-4 state level, owning house belongs to SC/ST, undergoing fitness training in a day 2 hours and finance related problems.

CONCLUSIONS

Within the limitations of the study the following conclusions were drawn

1. There were more number of state level referees in football in the 23-27 years category followed by 18-22 years, 28-32 years and 33-35 years. The decrease may be due to age related factors.
2. There were more number of state level referees in football in the Under Graduate category followed by post Graduate, diploma and Higher Secondary.
3. There was more number of state level referees in football in the private jobs and very meagre were in government jobs.
4. There were more number state level referees in football in the family monthly income of Rs 20,000 to 30,000 category followed by 10,000 to 20,000, 30,000 to 50,000, 50,000 to 70,000 and 70,000 to 80,000.
5. Family Income of the state level referees in football were not up the great extend and it lies in line with average income group.
6. There were more state level referees in football depends on their father's income followed by brother, mother, sister and of husband and wife.
7. There were more number of state level referees in football in the Hindu religion which is a non-minority religion in India followed by Christian and Muslim both were minority religion in India.
8. Effective measures may be taken to promote state level referees in football among the minority religion in India.
9. There were more number of state level referees in football in the unmarried category followed by married.
10. The state level referees in football are not self sufficient in income and in permanent jobs which are considered important for the marriage in every especially in India.
11. Effective may be taken to improve the income and secured job for the state level referees in football.
12. There were more number of state level referees in football in the own house followed by rented house.
13. There were more number of state level referees in football in the community of SC/ST followed by MBC, OC and BC.
14. There were more number of state level referees in football in the category-4- state level followed by category-2- national level, category-3- state level and category-5- state level achievement.
15. Only 16% were in national level achievement in state level referees in football effective fitness training may be rendered to the state level referees in football to achieve in national level.
16. There were more number of state level referees in football in the Middle income level followed by Lower middle income level, Higher middle income level, Very poor, Rich.

17. There were more number of state level referees in football in the fitness training in a day 2 hours followed by 1 hour, 3 hours and 4 hours in a day.
18. There were more number of state level referees in football in the fitness training in a week of 11 hours to 15 hours followed by 6 hours to 10 hours, 21 hours to 25 hours, 16 hours to 20 hours and 26 hours to 30 hours in a week.
19. There were more number of state level referees in football in the <5,000 to <10,000 category followed by 11,000 to < 15,000, 16,000 to < 20, 000, and 21,000 to < 25,000.
20. That income of the state level referees in football was not up to the great extend and it lies in line with average income group.
21. There were more number of state level referees in football in the Finance Related problems followed by Sports facilities related problems, Physical Injuries Related problems and Players Related problems.

REFERENCES

Jerry Markbreit and Alan Steinberg. (1989). Born to Referee, the publication of pocket Books, ISBN: 0671684655, 9780671684655.

Sutter and Kocher. (2004). "Favoritism of agents- the case of referee' home bias," journal of economic psychology, 25(4), 461-469.

Vijay Bahadur Singh Bisht(2016) Analysis of Attitude towards Soccer Officiating and Socio-Economic Status of Indian Soccer Referees. International Educational E- Journal, vol.5 (3).



RELATIONSHIP OF MUSCLE STRENGTH MUSCLE ENDURANCE AND EXPLOSIVE POWER WITH PLAYING ABILITY OF INTERCOLLEGIATE VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the relationship of muscle strength muscle endurance and explosive power with playing ability of intercollegiate volleyball players. To achieve the purpose of the study investigator selected 60 intercollegiate volleyball men players. Their ages ranges from 18 to 25 years. The following variables such as muscular strength, muscular endurance and explosive power with playing ability were selected for this study. Muscular strength was tested 1-RM test, muscular endurance was tested with push up test, explosive power was tested with vertical jump and playing ability assessed by judges ratings. The collected data were analysed statistically by Pearson product moment correlation. From the analysis of data it was proved that there is significant relationship between muscular strength, muscular endurance and explosive power with playing ability among intercollegiate volleyball players. Many kinds of throws to score a goal are possible. The Volleyball player is inspired to use his hands as a means of carrying out his ideas. The game is, of course, also faster than other ball-games.

KEYWORDS: *Muscular Strength, Muscular Endurance, Explosive Power and Playing Ability.*

INTRODUCTION

Muscular Strength

The ability of the muscle to exert maximum force. The maximal one effort force that can be exerted a resistance. (**Barry L.Jhonson and jack.K 1998**).

Muscular Endurance Muscular endurance is the ability to overcome high resistance or to act against high resistance under condition fatigue combat sports (**Barry L.Johnson and Jack.K 1998**).

Explosive Power

It is the capability of the individual to relax maximum force in the shortlist period of time. The explosive power is the ability to relax maximum muscular force in the shot test as in executing a standing jump (**Donald 2010**).

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the relationship of Muscular Strength Muscular Endurance and Explosive Power with Playing Ability among intercollegiate volleyball men players.

HYPOTHESIS

It was hypothesized that there would be a significant relationship between the Volleyball playing ability and selected variables such as muscular strength, muscular endurance and explosive power.

REVIEW AND RELATED LITERATURE

Sunita Devi (2017) conducted a research on volleyball is an ideal synthesis of the three fundamental athletic disciplines of running, jumping and throwing. Therefore it is not only a purely competitive sport but also a fine sport to be taken up with advantage by many for purposes of training and health. The player must be able to start quickly, he must be a persevering runner, he must be able to skilfully deceive his opponent, he must be able to swiftly pick up the ball or catch it in the air, he must pass the ball with precision to his team-mates and he must be able to execute all sorts of throws; in short, his body, his arms and his legs will have to be harmoniously trained. As the name of the game suggests, hands play the most important role; hands being naturally the deftest members of the body, the growing popularity of Volleyball is easily explained. Many kinds of throws to score a goal are possible. The Volleyball player is inspired to use his hands as a means of carrying out his ideas. The game is, of course, also faster than other ball-games.

Utku Alemdaroglu (2012) conducted research on the relationship between isokinetic knee strength, anaerobic performance, sprinting ability, agility and vertical jump performance in first division basketball players. To achieve the purpose of the study 12 male 1st division basketball players were selected as subjects. The selected age ranges the mean age was 25.1 ± 1.7 yrs; mean body height 194.8 ± 5.7 cm; mean body 92.3 ± 9.8 kg; mean PBF 10.1 ± 5.1 ; and mean Vo2max 50.55 ± 6.7 ml/kg/min. The selected variables were tested Quadriceps and hamstrings were measured at 60 degree and 180 degrees, anaerobic performance was evaluated using he Wingate anaerobic power test, sprint ability was determined by single sprint performance(10-30m), jump performance was evaluated by countermovement (CMJ) and squat (SJ) tests and agility

performance was measured using the T drill agility test. To collected the data analysis correlation. The Result of the study shows that quadriceps strength was significantly correlated with peak power at all contraction velocities. However, for mean power, significant correlation was only found between the 60 degree left and 180 degree right knee quadriceps measurements. No measure of strength was significantly related to the measurements from results of field test. Moreover, strong relations were found between the performances of athletes in different field test ($p < 0.05$). The use of correlation analysis is the limitation of this study.

METHODOLOGY

The purpose of the study was to find out the relationship of muscle strength muscle endurance and explosive power with playing ability of intercollegiate volleyball players. To achieve the purpose of the study investigator selected 60 intercollegiate volleyball men players. Their ages ranges from 18 to 25 years. The following variables such as muscular strength, muscular endurance and explosive power with playing ability were selected for this study. Muscular strength was tested 1-RM test, muscular endurance was tested with push up test, explosive power was tested with vertical jump and playing ability assessed by judges ratings. The collected data were analysed statistically by Pearson product moment correlation.

RESULTS AND DISCUSSION

TABLE – I
PEARSON PRODUCT MOMENT CORRELATIONS BETWEEN THE MUSCULAR STRENGTH, MUSCULAR ENDURANCE AND EXPLOSIVE POWER WITH PLAYING ABILITY AMONG INTER COLLEGIATE MEN VOLLEYBALL PLAYERS

Variables	Mean	Standard Deviation	r value
Playing Ability Vs	6.05	1.13	—
Muscular strength	39.13	3.09	0.30*
Muscular endurance	36.23	4.33	0.26*
Explosive power	37.57	3.00	0.38*

*Significant at 0.05 level with df 58 is 0.25

The result presented in Table I proved that there was significant relationship between the playing ability and muscular strength as the obtained 'r' value of 0.30 was greater than the table 'r' value of 0.25.

That there was significant relationship between playing ability and muscular Endurance as the obtained 'r' value of 0.26 was greater than the table 'r' value of 0.25.

That there was significant relationship between playing ability and explosive power as the obtained 'r' value of 0.38 was greater than the table 'r' value of 0.25.

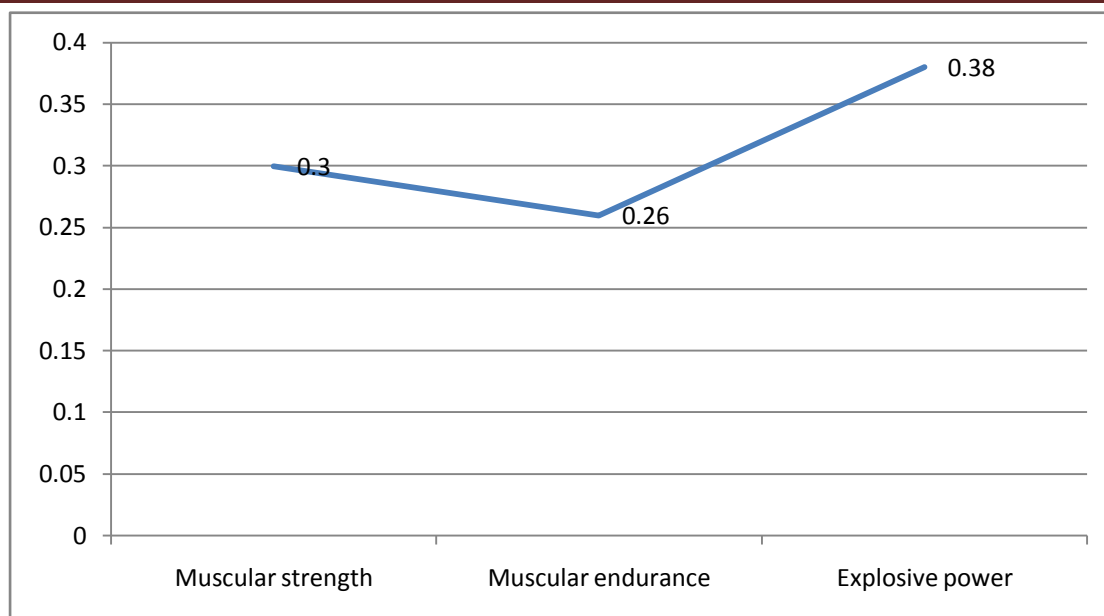


Figure -1

Pearson Product Moment Correlation Values between Muscular Strength, Muscular Endurance and Explosive Power with Volleyball Playing Ability

CONCLUSION

1. There was a significant relationship between muscular strength with volleyball playing ability.
2. There was a significant relationship between muscular endurance with volleyball playing ability.
3. There was a significant relationship between explosive power with volleyball playing ability.

REFERENCE

Barry L. Jhonson and Jack k. Nelson. "Practical Measurement for Evaluation in Physical Education" Delhi (surjeet publication).

Shamsoddini a hollisa (2013), Handbook of Volleyball, Si Chuan Dictionary press.

Sunita Devi (2017) A Study on the Volleyball Playing Ability among College Level Players. Airo International Research Journal. Volume II.

Utku Alemdaroglu (2012) The relationship between muscle strength, Anaerobic performance, Agility, Sprint Ability and Vertical Jump performance in Professional Basketball Players. Journal of Human Kinetics.



BASIC PHYSIOLOGICAL CONCEPTS IN HEALTH EDUCATION AND SPORTS

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ABSTRACT

There are numerous Physiological terms being used in the field of Physical Education and Sports. For the trainers, coaches and Physical Education teachers, the clarity of these terms is utmost important to make the students and players understand fully, so that better teaching and training may be facilitated. This paper will review the general Physiological concepts that already used in the field of Sports and Physical Education. Now a day's oxygen debt is more commonly referred to the term Excess post exercise Oxygen Consumption (EPOC). The EPOC or oxygen debt is in addition to the oxygen normally consumed at rest. Based on the above physiological concepts and terms and their meaning, it can be concluded that it is very important to any one related to Sports, Physical Activity and Physical Education as a Coach, Trainer or Teacher to be aware about all the physiological concepts in Sports and Physical Education. It is the identification of physiological mechanisms underlying physical activity, the comprehensive delivery of treatment services concerned with the analysis, improvement, and maintenance of health and fitness, rehabilitation of heart disease and other chronic diseases and/or disabilities, sports training and human adaptability to acute and chronic exercise. At the early portion of workout the athlete feels himself in an feels sense of freedom as the distress or feeling of uncomfortable is gone. He/ She has experienced second wind. The feeling of second wind is related to more comfortable pattern of breathing.

KEYWORDS: *Physiological concepts, exercise physiology, sports, physical education.*

INTRODUCTION

Physical exercise is any bodily activity that improves and maintains physical fitness and overall health wellness. Regular exercise makes the heart stronger and the lungs fitter, enabling the cardiovascular system to deliver more oxygen to the body with every heartbeat and the pulmonary system to increase the maximum amount of oxygen that lungs can take in. A sports physiologist examines the acute responses and chronic adaptations to athletic performance in various environments. Exercise Physiology is the study of how exercise changes the function and structure of the body. Exercise Physiology is what happens to the body as it exercises a single time, how these changes are brought about, and finally, what can be done to improve the body's response to exercise and its adaptation to training. It is the identification of physiological mechanisms underlying physical activity, the comprehensive delivery of treatment services concerned with the analysis, improvement, and maintenance of health and fitness, rehabilitation of heart disease and other chronic diseases and/or disabilities, sports training and human adaptability to acute and chronic exercise.

General Physiological Concepts

The below terms and concepts are very essential to all the sports, Trainers coaches and Physical education teachers. In order to improve the way of teaching, coaching and training.

Vital Capacity (VC)

The various lung volume measures reflect one's ability to increase the depth of breathing. Many terms are described briefly to understand the term vital capacity. The total volume of air that can be voluntarily moved in one breath, from full inspiration to maximum expiration, or vice versa, is termed as the vital capacity (VC). This consists of the tidal volume plus the inspiratory and expiratory reserve volumes. $VC=TV+IRV=ERV$. Average volume of vital capacity is about 4-5 liters in healthy young man. The values of 7.6 and 9.1 liters have been reported for a professional footballer or an Olympic gold medallist.

Tidal Volume (TV)

It is the volume of air moved during either inspiratory or expiratory phase of each breath. Average tidal volume of normal individual at resting condition is about 500 ml of air per breath.

Inspiratory Reserve Volume (IRV)

The amount of air inspired as deeply as possible in one breath is called inspiratory reserve volume (IRV). This additional volume is about 2.5 to 3.5 liters above the inspired tidal air represents one's reserve ability for inhalation (taking air in).

Expiratory Reserve Volume (ERV)

It is the maximum amount of air expired in one breath. It is ranged between 1.0 to 1.5 liters for an average sized man.

Function Residual Volume (FRV)

It includes the known expiratory reserve volume (ERV) and the unknown residual volume.

Residual Lung Volume (RLV)

When one exhales as deeply as possible, there is still a volume of air that remains in the lungs. This volume which cannot be exhaled is the residual lung volume. It averages between 1.0 and 1.2 litres.

Total Lung Volume (TLV)

The residual lung volume plus vital capacity constitute the total lung volume (TLV). $RV+VC=TLV$.

Minute Ventilation (MV)

Amount of air, which we can inspire or expire in one minute, is called minute ventilation. $MV=TV+BF = 500ml \times 12= 6L/min$ at rest. TV=Tidal Volume; BF =breathing frequency which is about 12 breath per minute.

Second Wind

In the field of sports particularly in running a race the term second wind is commonly used by coaches or trainers and also experienced by athletes. But this state of feeling is unexplained by athletes because of poor understanding. A second wind is a sensation characterized by a sudden change of condition or state from an unknown feeling of distress or fatigue during the early part of prolonged exercise as compared to less stressful feeling later in the exercise. At the early portion of workout the athlete feels himself in an feels sense of freedom as the distress or feeling of uncomfortable is gone. He/ She has experienced second wind. The feeling of second wind is related to more comfortable pattern of breathing.

Causes of Second Wind

The possible causes of second wind may be:

1. Relief from breathlessness caused by slow ventilator adjustment early in exercise.
2. Oxidation or removal of lactic acid accumulated early in the exercise as a result of delayed blood flow changes in the working muscles.
3. Inadequate warming up.
4. Because of local muscle fatigue, particularly of the diaphragm.
5. Due to psychological factors.

Oxygen Debt

We know that after exercise our body does not immediately return to resting level. In lighter exercise recovery is fast. But if the exercise is heavy or stressful such as swimming 200 meters or running 800 meters as fast as possible, comparatively the body needs more time to return to rest. The amount of oxygen consumed during the recovery period following exercise that is in excess of the volume, which is normally consumed while at rest, is called oxygen debt. Oxygen debt is the amount of oxygen consumed during recovery from exercise above that ordinarily consumed at rest in the same time period. Now a day's oxygen debt is more commonly referred to the term Excess post exercise Oxygen Consumption (EPOC). The EPOC or oxygen debt is in addition to the oxygen normally consumed at rest.

Fatigue

We usually use the term fatigue when we feel tired at the end of doing work or hard physical activity. Term fatigue describes general feeling of tiredness and decrease in muscular performance. In fact fatigue is experienced by everyone. It is a temporary in ability of muscular system to perform efficiently. It results in a decrease in the ability to do work and a feeling of uneasiness.

Types of Fatigue

1- Physical Fatigue

2- Mental Fatigue

Physical Fatigue is the one that a person experiences after a hard work, or after tiring muscular work, like playing tennis match or after cross-country running.

Mental Fatigue is the one that a person experiences after cramming long hours for an examination. Mental

Fatigue is also caused from having nothing to do or boredom. It may be the result of a trying emotional experience such as attending the funeral of a close friend, getting angry with someone or worrying about financial problems.

Muscular Contractions

Muscular contractions can mainly be categorized into four types of contractions such as **Isotonic Contraction, Isometric Contraction, Eccentric Contraction and Isokinetic Contraction**. All of these contractions are used during various sports training programs, although the degree of use may vary from activity to activity. These contractions are key factors in sports training and sports performance.

Blood Pressure

Blood pressure is the pressure that blood exerts against the Walls of the arteries. The amount of pressure depends upon the strength and rate of the heart's contraction, the volume of blood in the circulatory system, and the elasticity of the arteries. Blood pressure is measured with an instrument called a sphygmomanometer.

Blood pressure consists of one is systolic pressure which represents the blood pressure when the heart is contracting.

The other one is diastolic pressure which represents the blood pressure while the heart is relaxing. Blood pressures usually rises with age because of the decreased elasticity in the arteries and slow down the flow of blood. High blood pressure may cause heart failure, a stroke or kidney failure.

Pulse Pressure

Pulse pressure is the difference between the systolic and diastolic pressure readings. It is measured in millimeters of mercury (mmHg). It represents the force that the heart generates each time it contracts. If resting blood pressure is (systolic-diastolic) 120-80 millimeters of mercury (mmHg), pulse pressure is 40.

Heart rate

It is the speed of the heartbeat measured by the number of contractions of the heart per minute (bpm). The heart rate may be too fast (tachycardia) or too slow (bradycardia). The pulse is a bulge of an artery from waves of blood that course through the blood vessels each time the heart beats. The pulse is often taken at the wrist to estimate the heart rate.

CONCLUSION

Based on the above physiological concepts and terms and their meaning, it can be concluded that it is very important to any one related to Sports, Physical Activity and Physical Education as a Coach, Trainer or Teacher to be aware about all the physiological concepts in Sports and Physical Education.

REFERENCES

1. Dick Frank W. Sports Training Principles, London: Lepus Books, 1980.
2. Fox, Edward L. Sports Physiology, Halt: CBS College Publishing, 1984.
3. Singh Hardy. Science of Sports Training, New Delhi: DVS Publication, 1991.
4. <http://www.medicinenet.com/script/main/art.asp?articlekey=3674>- Reviewed on 15/07/2016.
5. Shaver Larry G. Essential of Exercise Physiology, Delhi: Surjeet Publications, 1982.
6. <https://en.wikipedia.org/wiki/> Reviewed on 12/06/2016.
7. Nieman David C. The Exercise Health Connection, Champaign IL: Human Kinetics, 1998.
8. <http://www.businessdictionary.com/definition/change.html> - Reviewed on 22/07/2016.
9. Singh, et al. Essentials of physical education: Kalyani publishers New Delhi, Reviewed 2016.



IMPACT OF PHYSICAL ACTIVITY AND NUTRITION EDUCATION AMONG OVERWEIGHT ADULT GIRLS

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ABSTRACT

The emerging problem of overweight and obesity in young adulthood especially in women is an epidemic international problem. High fats and more calories combined with decreased in physical activity have created overweight and obesity problem among adolescents around the world. The healthy habits, including healthy eating and physical activity can lower risk of becoming obese and developing related diseases. To know the impact of physical activity and nutrition education on weight loss among overweight adult girls. A prospective experimental study was done among 200 young adult overweight girls (20-25years) who are randomly selected and categorised into experimental group (n=100) and control group(n=100). The experimental group was provided one hour physical activity sessions on aerobics, yoga (Padmasana, Halasana, Matsysana), Shuttle under supervision of Physical Education Department for five days a week along with nutritional counselling with Modified diet chart and whereas for the control group was provided nutritional education only for two months. Anthropometric measurements (Height, Weight, BMI, Waist & Hip Ratio, Body composition for percent of Body fat by Bio Electrical Impedance analysis and Lipid Profile Examination were assessed at pre and post intervention. Average weigh, body fat percent and body measurements had reduced to the Mean and SD among experimental groups after intervention was (65.39 ± 7.510) compared to control group (62.64 ± 5.538) . In the experimental group the waist to hip ratio after intervention of Mean & SD values lowered from (0.9205 ± 12.92) to (0.8811 ± 0.0349) and reduction in the total cholesterol, Body fat, VLDL (26.46 ± 3.51) , LDL and triglycerides (132.33 ± 12.92) have been observed and also HDL (38.13 ± 6.95) Cholesterol levels have improved in the experimental group where as no changes was found in the control group. The effective weight management programme which includes modification of diet and life style with physically activity is essential to ideal weight and also to maintain normal lipid profile.

KEYWORDS: Emerging, Especially, Genetic, Socio-Demographic, Behavioural

INTRODUCTION

Overweight and obesity is a worldwide escalating problem caused by a complex interaction of Genetic, socio-demographic, behavioural and environmental factors. Obesity also causes disabilities, pain and suffering and negatively effects mobility and other quality of life measures. The Women with an elevated waist to hip ratio or a large waist circumference, the two markers of abdominal fat distribution, are reported to have a higher risk of several Cancer (Amina et al 2014). Obesity may lead to poly cystic ovary disease and it may cause for thyroidisam because of hormonal imbalance and infertility in adult girls. High fats and more calories combined with decreased in physical activity have created overweight and obesity problem among adolescents around the world. The increase in popularity of television viewing and video games, public and private transportation and urbanization of cities account for adolescents adopt more sedentary life style (Particia 2013).Diet and physical activity is most important thing to maintain weight. It can help in the prevention and control risk behaviours such as smoking, alcohol consumption and abuse of psychoactive substances and impacts on diet, prevents violence, partially in children and young people who promote psychological well being and reduce stress, anxiety, depression and loneliness.(Singh et al 2012).Because of proven positive effects on health, the World Health Organization provides support to member countries in strengthening policies which promote physical activity global strategy on diet. World Health Organization (2004) adopted physical activity and diet with the fundamental aim to improve health through proper nutrition and physical activity. The healthy habits, including healthy eating and physical activity can lower risk of becoming obese and developing related diseases.

SIGNIFICANCE OF THE STUDY

The developing countries are undergoing nutrition transition due to increased economic development and market globalization leading to rapid changes in the life style and dietary habits. Obesity increases burden on global health services cannot be ignored. So keeping this point in view the present study is carried out to study the impact of physical activity and nutrition on health among adult overweight girls with the following objectives

OBJECTIVE

- To know the impact of physical activity and nutrition education on weight loss and lipid profile among overweight adult girls.

METHODOLOGY

The area selected for the conduct of the study was Tirupati. A total of 200 overweight girls in the age group of 20-25years were selected from Sri Padmavathi Mahila Viswavidyalayam and Sri Venkateswara University, Tirupati. Among the total no 200 of sample, 100 subjects were selected randomly as experimental group where as remaining 100 subjects were selected for control group. The 100 subjects in the experimental group was provided one hour physical activity sessions on aerobics, yoga (Padmasana, Halasana, Matsysana),Shuttle all together planned on time table(2 days- Aerobics,2-days-yoga,1-day-Shuttle) under supervision of Physical Education Department of SPMVV for five days a week along with nutritional counselling(2times/week) with Do and Don'ts Pamphlets, Modified diet chart and whereas for control was provided nutritional education(2times/week) only for 2 months. A designed questionnaire was used to collect the information on the Demographic, anthropometric measurements, clinical and Bio chemical estimations, dietary patterns and life style practices,

knowledge related to obesity from all control and experimental groups. The comprehensive of diet pattern of adult girls with specific details on processed & junk foods, eating habits, likes and dislikes of foods, frequency of eating out, twenty four hour dietary recall for three consecutive days and food frequency questionnaire were collected for nutritional assessment. The impact of the physical activity and nutritional education among the overweight girls was assessed by using anthropometric measurements (Height, Weight, BMI, Waist & Hip Ratio, Body composition for percent of Body fat by Bio Electrical Impedance analysis and Lipid Profile Examination, at pre and post intervention.

RESULTS AND DISCUSSION

The results of the study is updated in the below

TABLE 1
PERCENT DISTRIBUTION OF SAMPLE ACCORDING TO FREQUENCY OF HAVING OUTSIDE JUNK FOOD

Group	Frequency of having outside junk food			
	Monthly once(%)	Weekly Once(%)	Weekly twice(%)	Daily(%)
Control	1(1.0)	5(5.0)	10(10.0)	84(84.0)
Experimental	0(0.0)	3(3.0)	7(7.0)	90(90.0)
Total	1(0.0)	8(8.0)	17(17.0)	184(184.0)

TABLE 2
DISTRIBUTION OF THE SAMPLE WITH THE RESPECT TO EATING MISCELLANEOUS PROCESSED FOOD CONSUMPTION

Food Products	Frequency consumption	Experimental Group (n=100)	Control Group (n=100)
Bakery products	Daily	60(60)	46(46)
	Weekly once	9(9)	11(11)
	Twice / Thrice in a week	31(31)	39(39)
	Monthly	0(0)	0(0)
	Occasionally	0(0)	0(0)
Fried / oil foods	Daily	65(65)	64(64)
	Weekly once	10(10)	9(9)
	Twice / thrice in a week	23(23)	26(26)
	Monthly	2(2)	1(1)
	Occasionally	0(0)	0(0)
Sweets	Daily	32(32)	29(29)
	Weekly once	14(14)	16(16)
	Twice / Thrice in a week	49(49)	53(53)

	Monthly	2(2)	4(4)
	Occasionally	3(3)	5(5)

The data showed that most of the subjects would like to eat more junk foods and outside processed foods daily in the both groups. These foods generally contains a high amount of calories and very tasty also especially children and adolescents are more prone to eat this type of foods which might be the reason to leading to obesity in both groups. Eating fast foods for meals or snacks is popular among both the groups. Majority of the subjects (64-65%) on both groups are consuming fried foods like Gobi Manchuria, Samosa, Bajji, Pakoda and Potato chips etc.. and the bakery products, sweets and chocolates in increased quantities are more. As per the results we state that through media commercial advertisements and peer influence develop positive behaviours, such as willing to try new foods and become a contributing factor to excessive weight gain in adolescents and young adulthood.

TABLE 3
THE CHANGES IN ANTHROPOMETRIC MEASUREMENTS AND BIOCHEMICAL
PARAMETERS BEFORE AND AFTER INTERVENTION

S.No.	Parameter	Group		Mean	S.D.
1.	Weight	Control	Before	63.13	5.531
			After	62.64	5.538
		Experimental	Before	65.39	7.510
			After	60.63	7.232
2.	B.M.I.	Control	Before	26.720	1.844
			After	26.511	1.821
		Experimental	Before	27.44	2.388
			After	25.85	2.328
3.	Waist to Hip ratio	Control	Before	0.9273	0.0549
			After	0.9154	0.0557
		Experimental	Before	0.9205	0.054
			After	0.8811	0.0349
4.	Total cholesterol	Control	Before	168.86	17.78
			After	168.39	17.77
		Experimental	Before	176.20	22.81
			After	150.20	22.62
5.	triglycerides	Control	Before	140.20	14.35
			After	140.20	14.35
		Experimental	Before	149.86	17.08
			After	132.33	12.92
6.	HDL	Control	Before	32.33	7.11
			After	32.66	7.11
		Experimental	Before	38.13	6.95
			After	40.66	6.48
7.	LDL	Control	Before	113.93	13.28
			After	110.20	11.05
		Experimental	Before	96.53	18.60

8.	VLDL	Control	After	83.13	14.84
			Before	29.46	3.28
			After	28.33	3.24
		Experimental	Before	28.93	4.21
			After	26.46	3.51
9.	BODY FAT	Control	Before	36.681	5.95
			After	36.611	5.90
		Experimental	Before	42.573	7.21
			After	34.929	5.54

The above data showed that average weight and body fat percent, body measurements had reduced to the Mean and SD among control and experimental groups after intervention was (65.39 ± 7.510) compared to control group (62.64 ± 5.538). The average weight loss among experimental group was 4.03kg compared to control group which was 0.644kg only.

In the experimental group the waist to hip ratio after intervention of Mean & SD values lowered from (0.9205 ± 12.92) to (0.8811 ± 0.0349) and reduction in the total cholesterol, Body fat, VLDL (26.46 ± 3.51), LDL and triglycerides (132.33 ± 12.92) have been observed and also HDL (38.13 ± 6.95) Cholesterol levels have improved in the experimental group where as no changes was found in the control group. After the experiment results indicated healthy signs for physical activity along with the diet modification able to shed significant weight loss compared to control group. The results reveal from the data that dietary factors and physical activity patterns are considered to be the major modifiable factors is overweight prevention. Low physical activity levels have been shown to be associated with greater weight gain and including physical activity and dietary management through calorie minimization by avoiding outside junk foods and inclusion of more fruits and vegetables and following the healthy eating habits in the diet help to lose weight in order to maintain ideal weight, body fat with normal lipid profile levels and the reduction in the waist to hip ratio.

CONCLUSION

Obesity and overweight is one of the major epidemic problems which is affecting the larger population of all age groups. Hence the effective weight management programme which includes modification of diet and life style with physically active is essential to weight and also to maintain normal lipid profile. Fundamental to treatment of overweight and obesity is inclusion of physical activity and life style modification, reduction in the number of calories consumed along with emphasis on consumption of raw fruits and vegetables, protein, fibre and should be sufficient in nutrients and vitamins, decreasing intake of processed foods, sugars, salts, fats, oils and nutritionally dense foods should be minimised.

REFERENCES

1. Amina Amadou, Pierre Hainaut, Issabelle Romieu (2013). Role Of Obesity In The Risk Of Breast Cancer: Journal Of Oncology, Vol 2013(2013), 19-27
2. Patricia Moraes Ferreira (2013). 'Diet, Nutrition And Prevention Of Excess Weight Gain And Obesity'. Public Health Nutrition, Vol. 7(2a). 123-146
3. Singh Abhinav, Bharathi Purohit (2011) Physical Activity, Sedentary Life Style And Obesity Among Indian Dental Professionals. Journal of Physical And Health 2012. 563-5



SURVEY STUDY ON POST SEASONAL COMMON SPORTS INJURIES AMONG SCHOOL LEVEL MALE VOLLEYBALL PLAYERS IN KERALA

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ABSTRACT

The term sports injuries means the kinds of injury that most commonly occur during sports or exercise. Some sports injuries results from accidents; others are due to poor training practices, improper equipment, lack of conditioning or insufficient warm and stretching. Although virtually any part of your body can be injured during sports or exercise, the term is usually reserved for injuries that involved the musculoskeletal system, which include the muscle, bones and associated tissues like cartilage. Volleyball has one of the highest participation rates worldwide, including both indoor and outdoor. This paper attempts to determine the post seasonal common sports injuries among school level male volleyball players in kerala. Every day, thousands of people in the world were participating sports and other games activities. Game and sports can also results in injuries some minor, some major and still others resulting in lifelong medical problems. The information sought through the questionnaire and the interview schedules were classified with respect to frequencies and other descriptive measures. The percentage analysis was employed to describe the relative incidence of injuries. Failing to warm up increases the risk of sports injuries. Bruises, strains, sprains, tears, and broken bones can result from sports injuries. Soft tissues like muscles, ligaments, tendons and fascia may be affected. Traumatic brain and spinal cord injuries, are relatively rare during sports or exercise. The explosive, bounding nature of volleyball puts extraordinary amounts of strain on the lower extremity, putting the ligaments and muscles at risk. Conversely, the upper extremity, primarily the shoulder region, is at risk of overuse injuries because of the amount of overhead motion required in the sport.

KEYWORDS: Post Seasonal, Sports Injuries, Volleyball, Extremities

INTRODUCTION

Sports injuries are injuries that occur to athletes participating in sporting event. These types of injuries are due to overuse of the part of the body and participating in certain types of sports. Other types of injuries can be caused by hard contact with something. This can often possess a broken bone or torn ligament or tendon. Every day, thousands of people in the world were participating sports and other games activities. Game and sports can also results in injuries some minor, some major and still others resulting in lifelong medical problems. Young athletes taking part in sports activities are in majority and they are not merely small adults. The sports injury, in the broadest sense refers to the kinds of injuries that most commonly occur during sports or exercise. Sports injuries occur in various reasons, due to poor training practices, improper equipment, lack of conditioning, or insufficient warming up and stretching etc.. Any part of body can injured during sports or exercise, the term is usually reserved for injuries that involve the musculoskeletal system, which includes the muscle, bones, and associated tissues like cartilage. Sports injuries can occur due to overtraining, lack of conditioning, and improper form or technique. Failing to warm up increases the risk of sports injuries. Bruises, strains, sprains, tears, and broken bones can result from sports injuries. Soft tissues like muscles, ligaments, tendons and fascia may be affected. Traumatic brain and spinal cord injuries, are relatively rare during sports or exercise.

Regular participation in sport and exercise can sometimes have a detrimental effect on health in the form of injury. The effects that such injuries have on an individual's health can be relatively minor, with only a short period of rest needed, or more profound resulting in athletes having to retire from their careers.

Volleyball involves repetitive overhead motions, such as spiking and blocking, players are prone to overuse injuries of the shoulder. In addition, volleyball players are particularly susceptible to figure injuries. Ligament sprains and muscle strains are the most common types of injury in volleyball players. The explosive, bounding nature of volleyball puts extraordinary amounts of strain on the lower extremity, putting the ligaments and muscles at risk. Conversely, the upper extremity, primarily the shoulder region, is at risk of overuse injuries because of the amount of overhead motion required in the sport.

METHODOLOGY

The study was designed to find out the most common injuries among school level male volleyball players in kerala.

Sample

The study was conducted on seventy male volleyball players. All the subjects were participated in inter schools, national level and state level competitions. The subjects belonged to different parts of kerala and their age ranged 13 to 18 years.

Procedure

A standardized questionnaire taken from sports injury survey journals of university of Delaware and the questionnaire were given to the players. The information sought through the questionnaire and the interview schedules were classified with respect to frequencies and other descriptive measures. The percentage analysis was employed to describe the relative incidence of injuries.

RESULTS AND DISCUSSIONS

TABLE 1
PERCENTAGE INDICATION OF INJURIES TO DIFFERENT PARTS OF LOWER
EXTREMITY

Different part in upper extremity	Injuries	
	Frequency	Percentage
Right shoulder	23	32.9
Left shoulder	11	15.7
Right upper arm	5	7.1
Left upper arm	1	1.4
Right elbow	8	11.4
Left elbow	5	7.1
Right forearm	5	7.1
Left Forearm	5	7.1
Right wrist	13	18.6
Left wrist	17	24.3
Right hand fingers	35	50.5
Left hand fingers	18	25.7

Table 1 of percentage indication of injuries to the different parts of upper extremity indicates that greater percentage of occurrence of injuries was to right hand fingers (50%) and right shoulder(32.9%). 25.7% of players had occurred to left hand injuries , 24,3% of players had occurrence to left wrist injuries, 18.6% of players had occurrence to right wrist injuries, 15.7% of the players had occurrence to left shoulder injuries, 11.4% of players had occurrence to right elbow injuries, 7.1% of players had occurrence to right upper arm, left elbow, right forearm and left forearm injuries. .4% of players had occurrence to left upper arm injuries.

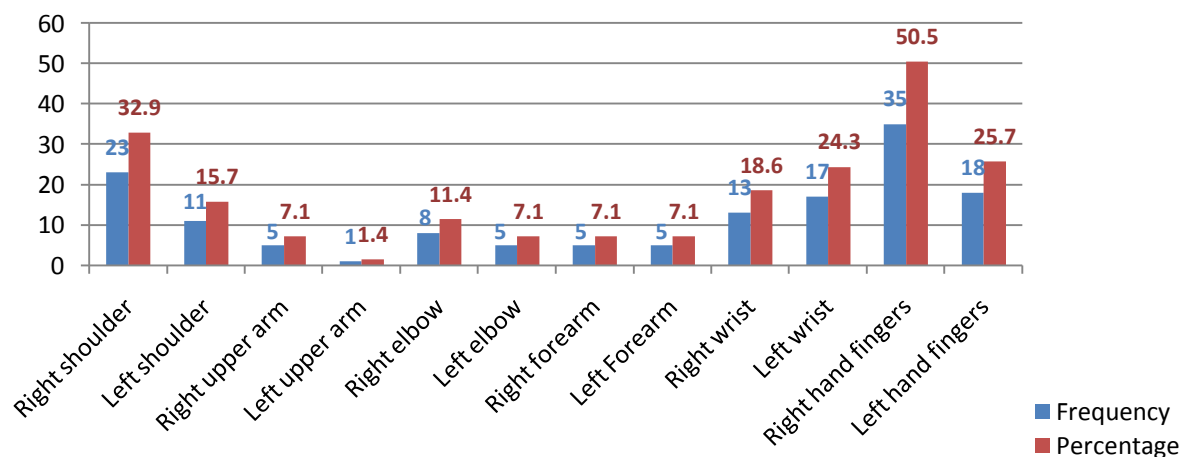
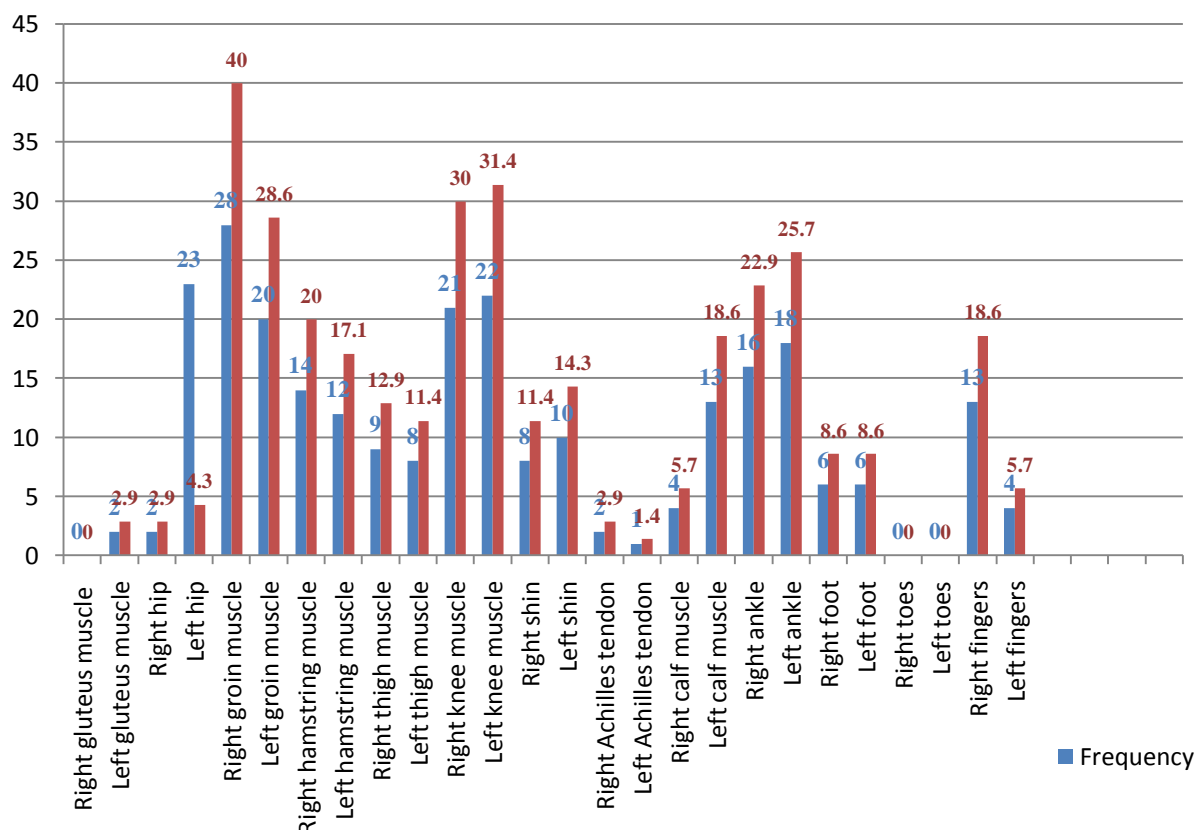


TABLE 2
PERCENTAGE INDICATION OF INJURIES TO DIFFERENT PARTS OF UPPER
EXTREMITY

Different part in upper extremity	Injuries	
	Frequency	Percentage
Right gluteus muscle	0	0
Left gluteus muscle	2	2.9
Right hip	2	2.9
Left hip	23	4.3
Right groin muscle	28	40.0
Left groin muscle	20	28.6
Right hamstring muscle	14	20.0
Left hamstring muscle	12	17.1
Right thigh muscle	9	12.9
Left thigh muscle	8	11.4
Right knee muscle	21	30
Left knee muscle	22	31.4
Right shin	8	11.4
Left shin	10	14.3
Right Achilles tendon	2	2.9
Left Achilles tendon	1	1.4
Right calf muscle	4	5.7
Left calf muscle	13	18.6
Right ankle	16	22.9
Left ankle	18	25.7
Right foot	6	8.6
Left foot	6	8.6
Right toes	0	0
Left toes	0	0
Right fingers	13	18.6
Left fingers	4	5.7

Table 2 of percentage indication of injuries to the different parts of the lower extremity indicates that greater percentage of occurrence of injuries was to right groin(40%), left knee(31.4%), right knee (30.0%) and left groin(28.6%). 25.7% of players had occurrence to left ankle injuries,

22.9% of players had occurrence to right angle injuries, 20% of players had occurrence to right hamstring injuries, 18/6% of players had occurrence to left calf and right figure injuries. 7.1% players had occurrence to left hamstring injuries, 14.3% of players had occurrence to left shin injuries, 12.9% of players had occurrence to right thigh injuries, 11% of players had occurrence to left thigh and right shin injuries, 8.6% of players had occurrence to right and left foot injuries, 5.7% of players had occurrence to left figure and right calf injuries, 4.3% of players had occurrence to left hip injuries, 2.9% of players had occurrence to left gluteus muscle, right hip and right achilles tendon injuries, 1.4% of players had occurrence to left Achilles tendon.



CONCLUSION AND RECOMMENDATIONS

On the basis of finding and within the limitations of the study the researcher has concluded that when compared to upper extremity, lower extremity injuries are more common in school level volleyball players and the most common injuries in school level volleyball players are low back injuries, finger injuries and groin injuries. It is recommended to conduct the same study for school level female volleyball players.

REFERENCES

- Briner, W.W., & Kacmar, L. (1997), Common injuries in volleyball. *Sports Medicine*, 24(1), 65-71.
- Reeser, J.C., E.A., Pourucznik, C.A., Berg, R., Colliver, E.B., & Willick, S.E. (2010), Risk factors for volleyball-related shoulder pain and dysfunction. *Pm&r*, 2(1), 27-36

Reeser, J.C., Verhagen, E.A.L.M., Briner, W.W., Askeland, T.I., & Bahr, R. (2006), Strategies for the prevention of volleyball related injuries. *British Journal of Sports Medicine*, 40(7), 594-600

Solgard, L., Nielsen, A.B., Moller-Madsen, B., Jacobson, B.W., Yde, J., & Jensen J (1995), Volleyball injuries presenting in casualty: a prospective study. *British Journal of Sports Medicine*, 29(3), 200-204

Verhagen, E.A.L.M., Vanderbeek, A.J., Bouter, L.M., Bahr, R.M., & Van Mechelen, W. (2004), A one season prospective cohort study of volleyball injuries. *British Journal of Sports Medicine*, 38(4), 477-481.



INFRASTRUCTURAL FACILITIES IN SCHOOLS AND COLLEGES – SCOPE AND CHALLENGES - COMPARATIVE STUDY BETWEEN INDIA AND PROGRESSIVE COUNTRIES

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ABSTRACT

Sports is a physically exhausting and mentally taxing activity and above all provides that adrenaline rush and excitement that everyone longs for. In today's world it is safe to say that sport is one of the most sought after careers. The sports industry has burgeoned in recent years. Thus, a systematic approach is required to manage the booming business. The management activities in the sports industry is a highly daunting task and is not everyone's cup of tea. This paper throws light on the theory that infrastructure of sports facilities plays an important role in the performance of the athletes. There is a stark contrast in infrastructural competency between India and other countries, India bearing the dearth of sports infrastructure in schools and colleges. This comparative study reveals the drawbacks in the Indian sports scenario. The research and study methods involve aggregating information from a large number of sports students and professionals, analyzing their experiences and drawing conclusions from them. The challenges of providing world class sports facilities in institutions so to speak are many. The paper aims to highlight these issues and provides solutions to overcome the same. It is critical to ensure that the best facilities are provided to students at grassroots level which furthermore assist them in their progress towards sport oriented careers. Sports enthusiasts envision the prospect of India heading the leader board in sports and strive to change it from vision to reality.

KEYWORDS: *Infrastructure, Systematic, Grassroots, Professionals,*

INTRODUCTION

Over the years, the sports scenario around the globe has considerably changed and is still on the rise. The sports industry attracts a prodigious number of people. The percentage of Indian success stories on the world stage is very low when compared to the vast population. Even Jamaica whose population and size is much smaller than India wins more medals. Many reasons are put forth for this non-performance. One belief is that foreigners are naturally stronger and more skilled however; lately this has been proved to be false as India begins to shine in badminton and tennis on the world circuit. The general public fails to acknowledge the problems that athletes face in their careers. This difference in skill is contingent on various factors. India is lacking in infrastructure, sporting culture and an awareness of sports altogether.

METHODOLOGY

Indian Sports Scene

The methods involved in collecting information include talking to students in India and abroad, recording the opinion of workers in the sports industry and also includes an auto-ethnographic approach. A group of students studying in schools and colleges in India and abroad were approached. The group comprised of students studying in government schools, reputed schools and colleges all over India. Further research revealed that while some private schools and colleges provided admirable facilities, others lacked the same. Statistics show that 31% of secondary schools do not even have a playground.

The American International School in Chennai has world class facilities. I can support this statement as I have personally played in the school. This obvious difference between private schools and government funded schools highlight that good infrastructure is not uniformly accessible by everyone.

Most colleges provide the basic sports facilities but they are of questionable quality. There are institutions like the Sports Authority of India, YMCA and Sports development Authority which highlight sports. However, the general public is hardly aware of their presence. Furthermore, students who show interest in sports aren't given any incentive to continue. The government is obligated to provide good sports infrastructure at the grassroots level. The government has implemented various reforms to provide scholarships and financial assistance however; they never reach the persons they are intended for because of political mismanagement.

Progressive Countries Sports Scene

Youngsters who migrate to US, China, Canada, Australia, Europe, etc in pursuit of higher studies notice the blatant differences in the sport culture and infrastructure. In US, every middle school has a track and open spaces where people can play any game. Most high schools have at the minimum, a big field that hosts football, soccer field hockey, and baseball; at the most, there are separate fields for each of those sports, plus indoor training and practice facilities. Multiple basketball courts in one location are a common sight. In China, children are groomed right from the beginning to enter the world of sports. The students' motor skills, reflexes and reactions are analyzed and a conclusion is drawn as to what sport their bodies are best suited for. The students then rigorously train their mind and body to excel in the chosen field. Australia is considered to be the ultimate destination for sports. The sporting culture there is inculcated right from the very beginning. The government provides different primary and secondary school grants for the

development of good infrastructure. Majority of sporting facilities are operated and maintained by local government and schools.

Benefits of Good Sports Infrastructure

1. Motivate and inspire children to take up sports at a young age.
2. Expose students to the professional world of sports,
3. Edify parents and students about various sporting careers.
4. Give students an opportunity to showcase their talent.
5. Give way to the organization of tournaments and competitions at a professional standard.
6. Enhance sports activities which further enhance the students' academic performance.
7. More sports activities are organized which in turn help children build character, become physically strong, learn discipline, team work and leadership at adolescence.

Analysis

This difference in approach to sports plays a major role in the country's performance in the professional arena. The low performance demotivates the budding sports persons and also makes parents have reservations about allowing their children to look at sport as a career option. Parents pressurize the students into academics as they fear that sports will not provide stability. Also cricket for instance is given much more importance than other sports in our nation. Even then youngsters rely on clubs and outside facilities for training as schools do not provide the required equipment.

On a more personal note, as a basketball player, I have played indifferent conditions. In my early days, I was not exposed to the right facilities. Basketball originated as an indoor sport. Nevertheless in India, the sport is mostly played on outdoor concrete or mud courts. Moving to a different school worked to my advantage as I had access to better infrastructure that helped me hone my skills.

After much deliberation, it can be concluded that infrastructural facilities in India are impeding growth in sports.

REASONS FOR LACK IN INFRASTRUCTURE

• Financial Problems

The primary reason behind inadequate infrastructure is the lack of funds. Schools and colleges do not wish to or are not able to spend money for sports equipment and facilities. Government aided schools don't receive enough funds whereas private schools concentrate more on academics. Few schools which allow sports participation eventually snuff it out as the students reach a higher grade.

• Lack of government support

The government has implemented many reforms for the welfare of sports education and infrastructure. However, execution of these reforms is very poor. This is a main reason for the sorry state of sports infrastructure in our country. Furthermore, the government has schemes in which they provide scholarships or cash prizes to sports players at various school and college levels. But, the money reaches the intended person too late or hardly reaches at all.

An additional problem is political interference. Most of the government sports authorities are headed by politically powerful persons. This results in mismanagement.

- **Lack of awareness**

Are institutions aware of the opportunities that sports provide? Are they aware of the benefits, challenges and the career prospects in the field? This absence of knowledge leads to treating sports inferior to academics. Sport is excluded from the school curriculum and no initiative is taken to inculcate the interest in students.

- **Corruption**

Many government bodies are influenced by politics which consequently affect the decisions taken. Deserving athletes miss out on the chance to showcase their skill as a result of this.

- **Lack of incentive**

Heads of educational institutions and parents alike refrain from promoting the idea of sports. With no source of motivation and inspiration, children invariably lean away from the world of sports.

SOLUTIONS

All the above mentioned problems are considered and the solutions for the same are discussed.

- Educational institutions must allot more funds for sports infrastructure.
- Private organisations must be provided incentive to invest in sports.
- Government should provide equipment at subsidized rates.
- Every school must mandatorily include sports and physical education in their curriculum.
- Parents should be sensitized to the importance and merits of sporting careers.
- Professional athletes of all sports must be lionized. This will motivate and inspire the youth to follow the same path.
- More number of school and university level tournaments must be conducted in order to attract active participation from students. Increase in participation will require good infrastructural facilities.
- Political interference must be eradicated.

CONCLUSION

This paper compares the sports infrastructural facilities between educational institutions in India and other countries. After much research it was found that India falls far behind. The current sports scenario in India although developing, doesn't seem to have any promising improvements in the near future. Our weaknesses are well known yet; little is being done to correct them. The proposed solutions are the rudimentary steps to building a well-developed sports scenario. The paper also aims to disseminate this information to create and propagate public awareness. Through appropriate actions and reforms, we envision the success of India in global sports.

REFERENCES

- http://www.business-standard.com/article/government-press-release/sports-infrastructure-at-schools-117020900913_1.html
- <http://www.sportingnews.com/other-sports/news/how-the-us-became-a-sporting-culture/1vgv4kxl2459w1l6dvrbbhev2er>
- Sporting schools-Funding.
- sportskeeda.com.
- My Ind Makers.



THE ROLE OF YOGA IN STRESS MANGEMENT

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ABSTRACT

In an age of a highly dynamic and competitive world, man is exposed to all kinds of stressors that can affect him in all realms of life. Hans Selye first introduced the term stress into life science. The term stress is derived from the Latin word Stringere, which means "to be drawn tight." Stress is a complex, dynamic process of interaction between a person and his or her life. Stress can affect one's health, work performance, social life, and the relationship with family members. The stress response is a complex emotion that produces physiological changes to prepare us for fight-or-flight, to defend ourselves from the threat or flee from it. Eminent behavioral scientist Stephen Robbins defines stress as that which arises from an opportunity, demand, constraint, threat, or challenge, when the outcomes of the event are important and uncertain. Keeley and Harcourt in their study, "Occupational Stress: A Study of the New Zealand and Reserve Bank," revealed that stress is caused by heavy work demands in the job itself, which the unskilled employee with little control over how the work is done, cannot adapt to or modify. Kulkarni, in an article "Burnout" published in Indian Journal of Occupational and Environmental Medicine, has said that the rapid change of the modern working life is associated with increasing demands of learning new skills, the need to adapt to new types of work, pressure of higher productivity and quality of work, time pressure, and hectic jobs. These factors are increasing stress among the workforce.

KEYWORDS: Numerous studies have shown yoga to be effective in the management of stress, and yoga is increasingly accepted in the Western world. Patients of all ages, as well as doctors themselves, can manage stress through the practice of yoga.

INTRODUCTION

Impact of Stress

One of the studies quoted that stress-related disorders evolve gradually through four recognizable stages. First, psychological changes such as anxiety, irritability, and insomnia arise, due to over-stimulation of the sympathetic nervous system. In the second stage symptoms such as high blood pressure, elevated heart rate, and increased intestinal motility surface. In the third stage, a more profound physical or biochemical imbalance sets in, while in the final fourth stage, irreversible symptoms that often require surgical or long-term management appear. Increased sympathetic activation and the release of stress hormones, including adrenaline, lead to increases in heart rate, blood pressure, breathing, body temperature, and muscle tension. In contrast, the relaxation response has been proposed as an antidote to stress; relaxation decreases heart rate, breathing, body temperature, and muscle tension.

Similar to stress in the workplace, college students are also often impacted by stress. Academic stress can result from many different imperative stressors, such as final grades, term papers, examinations, and excessive homework. Stress has exhibited a negative correlation with cognitive performance, thus negatively impacting academic performance.

Yoga

Rapidly emerging in the Western world as a discipline for integrating the mind and body into union and harmony, when adopted as a way of life, yoga improves physical, mental, intellectual, and spiritual health. Yoga offers an effective method of managing and reducing stress, anxiety, and depression, and numerous studies demonstrate the efficacy of yoga on mood-related disorders. Currently, treatment for anxiety and depression involves mostly psychological and pharmacological interventions; however, mind-body interventions are becoming increasingly popular as a means to reduce stress. Yoga, a form of mind-body exercise, has become an increasingly widespread therapy used to maintain wellness, and alleviate a range of health problems and ailments.

Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. Yoga is often depicted metaphorically as a tree and comprises eight aspects, or limbs: yama (universal ethics), niyama (individual ethics), asana (physical postures), pranayama (breath control), pratyahara (control of the senses), dharana (concentration), dyana (meditation), and samadhi (bliss). Yoga has also found its special existence in Japan by its peculiarities like asana and pranayama.

Effect of Yoga in Stress

A growing body of research evidence supports the belief that certain yoga techniques may improve physical and mental health through down-regulation of the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system (SNS). The HPA axis and SNS are triggered as a response to a physical or psychological demand (stressor), leading to a cascade of physiologic, behavioral, and psychological effects, primarily as a result of the release of cortisol and catecholamines (epinephrine and norepinephrine). This response leads to the mobilization of energy needed to combat the stressor through the classic fight-or-flight response. Over time, the constant state of hypervigilance resulting from repeated firing of the HPA axis and SNS can lead to dysregulation of the system, and ultimately diseases such as obesity, diabetes, autoimmune disorders, depression, substance abuse, and cardiovascular disease. Studies also show that yoga

decreases levels of salivary cortisol, blood glucose, as well as plasma renin levels, and 24-hour urine norepinephrine and epinephrine levels.

Yoga significantly decreases heart rate and systolic and diastolic blood pressure. Studies suggest that yoga reverses the negative impact of stress on the immune system by increasing levels of immunoglobulin A as well as natural killer cells. Yoga has been found to decrease markers of inflammation such as high sensitivity C-reactive protein as well as inflammatory cytokines such as interleukin-6 and lymphocyte-1B. These studies suggest that yoga has an immediate quieting effect on the SNS-HPA axis response to stress. Yoga has been shown to have immediate psychological effects: decreasing anxiety and increasing feelings of emotional, social, and spiritual well-being. Several literature reviews have been conducted that examined the impact of yoga on specific health conditions, including cardiovascular disease, metabolic syndrome, diabetes, cancer, and anxiety.

Effect of Yoga on Positive Health

A systematic review of the effects of yoga on children, contributing to the large body of research evidence attesting to the positive health benefits of yoga. Many of the studies compared yoga to other treatment modalities, most commonly to exercise, meditation, and traditional medicine. However, little has been written about what distinguishes yoga from other treatments. Yoga has recently been found to have beneficial effects on blood glucose levels in individuals with diabetes and other chronic health conditions. Yoga has been shown to be effective in relieving symptoms of mental illness including depression, anxiety, obsessive-compulsive disorder, and schizophrenia. Overall, the studies comparing yoga and exercise seem to indicate that, in both healthy and diseased populations, yoga may be as effective as, or better than exercise at improving a variety of health-related outcome measures, including HRV, blood glucose, blood lipids, salivary cortisol, and oxidative stress. Furthermore, yoga appears to improve subjective measures of fatigue, pain, and sleep in healthy and ill populations.

Yoga-based program that has been widely studied in the use of stress reduction is the mindfulness-based stress reduction program (MBSR), which is taught, studied, and popularized by Jon Kabat-Zinn and the Center for Mindfulness in Medicine, Healthcare and Society at the University of Massachusetts Medical School. The mindfulness-based stress reduction program includes guided instruction in mindfulness meditation practices, yoga and gentle stretching, inquiry exercises to enhance awareness, individual instruction, group dialogue, and home assignments.

The effects of mindfulness-based stress reduction (MBSR) on health-related quality of life and physical and psychological symptomatology in a heterogeneous patient population. Patients participated in an 8-week MBSR program and were required to practice 20 minutes of meditation daily. Pre- and post-intervention data were collected, and after a one-year follow-up, revealed maintenance of initial improvements on several outcome parameters. The author concluded that a group mindfulness meditation training program can enhance functional status and well-being, and reduce physical symptoms and psychological distress in a heterogeneous patient population, and that the intervention may have long-term beneficial effects.

Effect of Yoga in Occupational Health

In a study of Rudra Bhandari et al, the yogic intervention was comprised of selected yogic postures, breathing mechanics (pranayama), gestures, psychic locks, concentrations, and

meditations that were given for one month among 50 corporate personnel (25 male and 25 female) from the Indian Telephone Industry, Raebrali, India. The result showed significant effects of yogic intervention to manage distress and enhance work performance ($p < 0.01$) and favored the efficacy of corporate yoga to boost health, harmony, morale, work motivation, commitment, performance, and productivity at individual and organizational levels.

Biochemical Markers of Stress

Advanced research has also been carried out on yoga, wherein the cortisol levels were assessed in multiple independent trials. However, the results were inconsistent, with the majority of the studies showing no effect of yoga practice on cortisol concentrations. Conversely, Vadiraja and colleagues reported significant decreases in 6.a.m and pooled diurnal salivary cortisol concentrations in 42 breast cancer patients after a 6-week yoga intervention compared to 33 breast cancer patients in the control group. Similarly West et al reported a significant decrease in salivary cortisol in 18 undergraduate students after a semester-long Hatha yoga course. Decreased serum cortisol concentrations were also found in 8 yoga instructors after 1 hour of yoga practice as compared to before practice.

CONCLUSION

Yoga is said to be a complete science, as it fulfills the WHO's definition of health by addressing the individual at all physical, psychological, and social levels. Stress affects individuals of all age groups, and people of all sectors and occupations, including doctors. Though many modalities of treatments are available for reducing stress, people are trying to find an alternative to be relieved from stress without medications. Yogic science, having persisted for 5000 years and known to be spiritual for many years, is now being proven through scientific studies to have significant benefits on health.

Yogic science includes yogasanas (postures), pranayama (breathing practices), dhyana (meditation), and relaxation techniques which benefit human beings at every level. Through research studies, yoga has proven effective in many physical and psychological ailments. Apart from the management of diseased condition, it also has been proven to improve the positive health and quality of life of the healthy. Most importantly, yoga is also a strong practice for the prevention against painful ailments.

Being doctors, we think that we are healthy, though affected by enormous stress, and we tend to neglect due to our busy schedule. This is occupational stress that does not spare even doctors. As doctors are already aware of the prolonged stress and its physical and mental effects, it is very important that one knows how to manage stress and protect their positive health. In this regard, even doctors can start practicing yoga that has been scientifically proven to reduce stress and improve positive health, and thereby can also advise patients to overcome their problems.

REFERENCES

1. Caroline Smith, Heather Hancock, Jane Blake-Mortimer, Kerena Eckert. A Randomised comparative trial of yoga and relaxation to reduce stress and anxiety. *Complementary Therapies in Medicine*. 2007;15,77-83. <http://kaitlynroland.files.wordpress.com/2011/04/a-randomised-comparative-trial-of-yoga-and-relaxation-to-reduce-stress-and-anxiety-smith.pdf>
2. Reibel, D. K., J. M. Greeson, G. C. Brainard, and S. Rosenzweig. Mindfulness-based stress reduction and health-related quality of life in a heterogeneous patient population. *General*

- Hospital Psychiatry*, Jul-Aug 2001, 23(4), pp 183-192. PMID: 11543844 <http://www.ncbi.nlm.nih.gov/pubmed/11543844>.
3. Keeley, K and Harcourt, M., (2001), Occupational Stress: A Study of the New Zealand and Reserve Bank, Research and Practice in Human Resource Management, 9(2), pp 109-118. <http://rphrm.curtin.edu.au/2001/issue2/bank.html>
 4. Amy Wheeler, PhD, and Linda Wilkin, PhD..A Study of the Impact of Yoga Âsana on Perceived Stress, Heart Rate, and Breathing Rate. *International Journal Of Yoga Therapy*.2007. No. 17:57-63.
 5. Amber W.Li, PharmD and Carroll-Ann W.Golsmith, DSc. The Effects of Yoga on Anxiety and Stress. *Alternative Medicine Review*. 2011. Volume 17, Number 1, 21-35. <http://www.ncbi.nlm.nih.gov/pubmed/22502620>



POSITION-WISE ANALYSIS ON SELECTED PSYCHOLOGICAL VARIABLES AMONG INTER COLLEGIATE VOLLEYBALL PLAYERS

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ABSTRACT

*To study the impacts of gender on selected psychological variables of the Inter-collegiate volleyball players. **Tool:** In measuring the select variables, the tools used in the present study are as follows. Athletic Coping Skills Inventory-28(ACSI-28) was used as psychological to measure the select psychological variables. **Sample:** Initially the volleyball players pertain to teams qualified for pre-quarter in the inter-collegiate volleyball tournaments were selected from Coimbatore District as subjects totally 598. Subjects selected for this study were from both male (N=312) and female (N=286) Age ranged from 18- 25. **Finding:** It was found that gender has significant impact on most of the psychological aspects among the volleyball players Hence, when the player meet stressful situations and less in coping skills, the most disturbed area in the individual psychological aspects. The fluctuation in psychological regulation can be prevented by developing cognitive skills and strategies to manage anxiety, stress, negative thoughts and emotions. Researches into sports psychology and performances suggest that the best performers tend to have: higher levels of self-confidence, more task-oriented focus, and control over their anxiety levels, more determination and commitment (Woodman, Lew, 2003). Volleyball has a great need for volitional qualities, with equal technical and tactical mastery the team whose players show the greatest desire for victory will win (Dewaram, W.I. 1982).*

KEYWORDS: Psychological, Tournaments, Manage Anxiety, Stress,

INTRODUCTION

Now day volleyball has turned to be a professional sport and player's expectancies towards pay-off. Thus the intrinsic and extrinsic pressures place the players in the stressful situations that too would be so common in the high level tournament. Player with good physical skills may not ensure the same in the psychological aspects. Hence, when the player meet stressful situations and less in coping skills, the most disturbed area in the individual psychological aspects. The fluctuation in psychological regulation can be prevented by developing cognitive skills and strategies to manage anxiety, stress, negative thoughts and emotions.

Statement of the Problem

Physical and anthropometric factors are serving as a base to excel in the game of volleyball. When the player reaches the higher level and performing in high level competition, in addition to physical and anthropometric factors, the factors underlie the psychomotor and psychological would determine the efficacy of a player in execution of skills specifically in competition. In the game of volleyball, anthropometric factors namely height, weight and other body segments both in length, width and circumference help the player to perform were and conserve the energy in terms of movements of body parts. Likewise, the strength of psychological aspects helps the player to accommodate the stressful situations positively and manage without any mental fatigue.

Hypotesis of the Study

- Gender may have significant influence on selected psychological variables such as athletic coping skills of coping with adversity, coach ability, concentration, confidence and achievement motivation, Goal setting and mental preparation, peaking under pressure, and Freedom from worry (psychological).
- There may be significant mean difference among the players of varied positional play namely attacker, middle blocker, setter and libero on selected psychological variables.
- The interaction between gender positional play on selected psychological variables may be significant.

TABLE 1
DESCRIPTIVE STATISTICS ON COPING WITH ADVERSITY

Position	Gender	Mean	Standard Deviation
Attacker	Male	7.13	2.13
	Female	7.54	2.26
Middle Blocker	Male	7.34	2.45
	Female	7.48	2.39
Libero	Male	7.01	2.57
	Female	7.76	2.57
Setter	Male	7.18	2.56
	Female	7.18	2.60

Table 1 shows the descriptive statistics on Coping with Adversity of male and female volleyball players belong to different positional play. This mean and standard deviation of male players positional play based are: 7.13 ± 2.13 (Attacker), 7.34 ± 2.45 (Center blocker), 7.01 ± 2.57 (Libero), and 7.18 ± 2.56 (Setter). Besides, in the female section, the mean and standard

deviation on Coping with Adversity are: 7.54 ± 2.26 (Attacker), 7.48 ± 2.39 (Center blocker), 7.76 ± 2.57 (Libero) and 7.18 ± 2.60 (Setter).

TABLE 2
SHOWS TWO WAY ANALYSIS OF VARIANCE ON COPING WITH ADVERSITY

Source variance	Sum of square	df	Mean	F ratio
Positional play	0.59	3.00	0.20	0.03
Gender	22.54	1.00	22.54	3.92
Positional play x Gender	5.24	3.00	1.75	0.30
Error	3119.96	543.00	5.75	

Table 2 reveals that the observed F- ratio on Coping with Adversity is 0.03 for positional play, 3.92 for gender and 0.30 for interaction between positional play and gender. The observed 'F'-ratio for positional play, gender and interaction between positional play and gender one tested 0.05 level of significance of observed 'F' ratio, it was found that the obtained 'F' ratio for gender only found to be statistically significant at 0.05 level where as this 'F' ratio for positional play and interaction between positional play and gender were formed to be not statistically significant. Since it failed to reach the significant level of 2.62.

TABLE 3
SHOWS DESCRIPTIVE STATISTICS ON COACH ABILITY

Position	Gender	Mean	Standard Deviation
Attacker	Male	6.85	2.45
	Female	6.59	1.82
Middle Blocker	Male	7.26	2.23
	Female	6.78	1.84
Libero	Male	7.67	2.10
	Female	6.27	1.77
Setter	Male	7.16	2.22
	Female	7.81	6.72

Table 3 shows the descriptive statistics on Coach Ability of male and female volleyball players belong to different positional play. This mean and standard deviation of male players positional play based are: 6.85 ± 2.45 (Attacker), 7.26 ± 2.23 (Center blocker), 7.67 ± 2.10 (Libero), and 7.16 ± 2.22 (Setter). Besides, in the female section, the mean and standard deviation on Coach Ability are: 6.59 ± 1.82 (Attackers), 6.78 ± 1.84 (Center blocker), 6.27 ± 1.77 (Libero) and 7.81 ± 6.72 (Setter).

TABLE 4
SHOWS TWO WAY ANALYSIS OF VARIANCE ON COACH ABILITY

Source variance	Sum of square	df	Mean	Fratio	Sig
Positional play	41.06	3.00	13.69	1.63	0.18
Gender	17.53	1.00	17.53	2.09	0.15
Positional play xGender	54.72	3.00	18.24	2.17	0.09

Error	4560.48	543.00	8.40		
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Table 4 reveals that the observed F- ratio on Coach Ability is 1.63 for positional play, 2.09 for gender and 2.17 for interaction between positional play and gender. The observed 'F'- ratio for positional play, gender and interaction between positional play and gender one tested 0.05 level of significance of observed 'F' ratio, it was found that the obtained 'F' ratio for gender only found to be statistically significant at 0.05 level where as this 'F' ratio for positional play and interaction between positional play and gender were found to be not statistically significant. Since it failed to reaches the required table value of 2.62.

TABLE 5
SHOWS DESCRIPTIVE STATISTICS ON CONCENTRATION

Position	Gender	Mean	Standard Deviation
Attacker	Male	7.00	2.59
	Female	7.32	2.58
Middle Blocker	Male	7.54	2.73
	Female	7.42	2.57
Libero	Male	7.33	2.78
	Female	6.98	2.86
Setter	Male	7.42	2.38
	Female	7.52	2.42

Table 5 shows the descriptive statistics on Concentration of male and female volleyball players belong to different positional play. This mean and standard deviation of male players positional play based are: 7.00 ± 2.59 (Attacker), 7.54 ± 2.73 (Center blocker), 7.33 ± 2.78 (Libero), and 7.42 ± 2.38 (Setters). Besides, in the female section, the mean and standard deviation on Concentration are: 7.32 ± 2.58 (Attacker), 7.42 ± 2.57 (Center blocker), 6.98 ± 2.86 (Libero) and 7.52 ± 2.42 (Setter).

TABLE 6
SHOWS TWO WAY ANALYSIS OF VARIANCE ON CONCENTRATION

Source variance	Sum of square	df	Mean	Fratio
Positional play	13.31	3.00	4.44	0.65
Gender	0.04	1.00	0.04	0.01
Positional play x Gender	8.90	3.00	2.97	0.43
Error	3714.49	543.00	6.84	

Table 6 reveals that the observed F- ratio on Concentration is 0.65 for positional play, 0.01 for gender and 0.43 for interaction between positional play and gender. The observed 'F'- ratio for positional play, gender and interaction between positional play and gender one tested 0.05 level of significance of observed 'F' ratio, it was found that the obtained 'F' ratio for gender only found to be statistically significant at 0.05 level where as this 'F' ratio for positional play and interaction between positional play and gender were found to be not statistically significant. Since it failed to reaches the required table value of 2.62.

TABLE 7
SHOWS DESCRIPTIVE STATISTICS ONCONFIDENCE AND ACHIEVEMENT
MOTIVATION

Position	Gender	Mean	Standard deviation
Attacker	Male	8.75	3.16
	Female	9.52	2.74
Middle Blocker	Male	8.78	2.86
	Female	9.98	2.31
Libero	Male	9.33	2.92
	Female	9.08	2.41
Setter	Male	8.82	2.69
	Female	10.09	1.84

Table 7 shows the descriptive statistics on Confidence and Achievement Motivation of male and female volleyball players belong to different positional play. This mean and standard deviation of male players positional play based are: 8.75 ± 3.16 (Attacker), 8.78 ± 2.86 (Center blocker), 9.33 ± 2.92 (Libero), and 8.82 ± 2.69 (Setter). Besides, in the female section, the mean and standard deviation on Confidence and Achievement Motivation: 9.52 ± 2.74 (Attacker), 9.98 ± 2.31 (Center Blocker), 9.08 ± 2.41 (Libero) and 10.09 ± 1.84 (Setter).

TABLE 8
SHOWS TWO WAY ANALYSIS OF VARIANCE ONCONFIDENCE
AND ACHIEVEMENT MOTIVATION

Source variance	Sum of square	df	Mean	Fratio	Sig
Positional play	9.81	3.00	3.27	0.44	0.72
Gender	70.71	1.00	70.71	9.62	0.00
Positional play x Gender	39.07	3.00	13.02	1.77	0.15
Error	3992.00	543.00	7.35		

Table 8 reveals that the observed F- ratio on Confidence and Achievement Motivation is 0.44 for positional play, 9.62 for gender and 1.77 for interaction between positional play and gender. The observed 'F'- ratio for positional play, gender and interaction between Positional Play and gender one tested 0.05 level of significance of observed 'F' ratio, it was found that the obtained 'F' ratio for gender only found to be statistically significant at 0.05 level where as this 'F' ratio for positional play and interaction between positional play and gender were found to be not statistically significant. Since it failed to reaches the required table value of 2.62.

TABLE 9
SHOWS DESCRIPTIVE STATISTICS ON GOAL SETTING

Position	Gender	Mean	Standard Deviation
Attacker	Male	7.89	3.03
	Female	7.88	2.74
Middle Blocker	Male	8.04	2.87
	Female	8.35	2.29
Libero	Male	8.43	2.38

	Female	8.43	2.26
Setter	Male	8.08	2.73
	Female	8.03	2.58

Table 9 shows the descriptive statistics on Goal Setting of male and female volleyball players belong to different positional play. This mean and standard deviation of male players positional play based are: 7.89 ± 3.03 (Attacker), 8.04 ± 2.87 (Center Blocker), 8.43 ± 2.38 (Libero), and 8.08 ± 2.73 (Setters). Besides, in the female section, the mean and standard deviation on Goal Setting are: 7.88 ± 2.74 (Attacker), 8.35 ± 2.29 (Center Blocker), 8.43 ± 2.26 (Libero) and 8.03 ± 2.58 (Setters). Further the mean values of male and female volleyball players a Goal Setting.

TABLE 10
SHOWS TWO WAY ANALYSIS OF VARIANCE ON GOAL SETTING

Source variance	Sum of square	df	Mean	Fratio	Sig
Positional play	22.00	3.00	7.33	1.02	0.39
Gender	0.51	1.00	0.51	0.07	0.79
Positional play x Gender	2.84	3.00	0.95	0.13	0.94
Error	3919.09	543.00	7.22		

Table 10 reveals that the observed F- ratio on Goal Setting is 1.02 for positional play, 0.07 for gender and 0.13 for interaction between positional play and gender. The observed 'F'- ratio for positional play, gender and interaction between positional play and gender one tested 0.05 level of significance of observed 'F' ratio, it was found that the obtained 'F' ratio for gender only found to be statistically significant at 0.05 level where as this 'F' ratio for positional play and interaction between positional play and gender were found to be not statistically significant. Since it failed to reaches the required table value of 2.62.

TABLE 11
SHOWS DESCRIPTIVE STATISTICS ON PEAKING UNDER PRESSURE

Position	Gender	Mean	Standard Deviation
Attacker	Male	7.29	2.57
	Female	6.92	2.48
Middle Blocker	Male	7.36	2.51
	Female	7.26	2.76
Libero	Male	7.65	2.35
	Female	7.24	2.39
Setter	Male	7.22	2.33
	Female	7.24	2.58

Table 11 shows the descriptive statistics on Peaking under Pressure of male and female volleyball players belong to different positional play. This mean and standard deviation of male players positional play based are: 7.29 ± 2.57 (Attacker), 7.36 ± 2.51 (Center blocker), 7.65 ± 2.35 (Libero), and 7.22 ± 2.33 (Setter). Besides, in the female section, the mean and standard deviation on Peaking under Pressure: 6.92 ± 2.48 (Attacker), 7.26 ± 2.76 (Center blocker), 7.24 ± 2.39 (Libero) and 7.24 ± 2.58 (Setter).

TABLE 12
SHOWS TWO WAY ANALYSIS OF VARIANCE ON PEAKING UNDER PRESSURE

Source variance	Sum of square	df	Mean	Fratio	Sig
Positional play	8.70	3.00	2.90	0.46	0.71
Gender	5.67	1.00	5.67	0.90	0.34
Positional play x Gender	4.05	3.00	1.35	0.21	0.89
Error	3426.50	543.00	6.31		

Table 12 reveals that the observed F- ratio on peaking under Pressure 0.46 for positional plays, 0.98 for gender and 0.21 for interaction between positional play and gender. The observed 'F'-ratio for positional play, gender and interaction between positional play and gender one tested 0.05 level of significance of observed 'F' ratio, it was found that the obtained 'F' ratio for gender only found to be statistically significant at 0.05 level where as this 'F' ratio for positional play and interaction between positional play and gender were formed to be not statistically significant. Since it failed to reaches the required table value of 2.62.

TABLE 13
SHOWS DESCRIPTIVE STATISTICS ON FREEDOM FORM WORRY

Position	Gender	Mean	Standard Deviation
Attacker	Male	6.77	2.70
	Female	5.51	2.61
Middle Blocker	Male	7.11	2.62
	Female	5.83	3.15
Libero	Male	7.29	2.63
	Female	5.29	2.49
Setter	Male	7.56	2.31
	Female	5.59	2.69

Table 13 shows the descriptive statistics on Freedom form worry of male and female volleyball players belong to different positional play. This mean and standard deviation of male players positional play based are: 6.77 ± 2.70 (attacker), 7.11 ± 2.62 (Center blocker), 7.29 ± 2.63 (Libero), and 7.56 ± 2.31 (Setters). Besides, in the female section, the mean and standard deviation on Freedom form worry are: 5.51 ± 2.61 (Attackers), 5.83 ± 3.15 (Center blocker), 5.29 ± 2.49 (Libero) and 5.59 ± 2.69 (Setters). Further the mean values of male and female volleyball players a Freedom form worry.

TABLE 14
SHOWS TWO WAY ANALYSIS OF VARIANCE ON FREEDOM FORM WORRY

Source variance	Sum of square	df	Mean	Fratio	Sig
Positional play	16.77	3.00	5.59	0.78	0.50
Gender	335.47	1.00	335.47	46.99	0.00
Positional play x Gender	16.43	3.00	5.48	0.77	0.51
Error	3876.27	543.00	7.14		

Table 14 reveals that the observed F- ratio on Freedom from worry is 0.78 for positional play, 46.99 for gender and 0.77 for interaction between positional play and gender. The observed 'F'-ratio for positional play, gender and interaction between positional play and gender one tested 0.05 level of significance of observed 'F' ratio, it was found that the obtained 'F' ratio for gender only found to be statistically significant at 0.05 level where as this 'F' ratio for positional play and interaction between positional play and gender were found to be not statistically significant. Since it failed to reach the required table value of 2.62.

FINDINGS OF THE STUDY

- Gender has significant impact on coping with advisory, confidence, achievement and motivation and freedom from worry (Psychological) thus, the formulated hypothesis related to this is accepted.
- Gender has no significant impact on coach ability concentration, goal setting and mental preparation and peaking under pressure (Psychological). Thus, the formulated hypothesis related to this is rejected.

CONCLUSION

Researches into sports psychology and performances suggest that the best performers tend to have: higher levels of self-confidence, more task-oriented focus, and control over their anxiety levels, more determination and commitment (**Woodman, Lew, 2003**). Volleyball has a great need for volitional qualities, with equal technical and tactical mastery the team whose players show the greatest desire for victory will win (**Dewaram, W.I. 1982**). From this study the impact of gender on selected psychological variables, it was observed that male and female volleyball players differed significantly in the select variables namely coping with adversary, confidence and achievement motivation and freedom from worry (psychological). In testing the significant of mean difference on psychological variables of the players of varied positional play, it was observed that the mean difference exist among the players of positional play namely attackers, middle blocker, setter and libero was statistically not significant at 0.05 level.

REFERENCES

- Dhananjay Singh and Shrikrishna Patel (2014)**. Comparative study of maximum oxygen consumption of different game players. International Journal of Physical Education, Sports and Health 2014; 1(2): 17-19.
- Goldstein E.B. (2014)**. Sensation and perception (9th ed.). Pacific Grove CA: Wadsworth.
- Archana Singh and Vidya Sagar Singh (2013)**. Comparison of Physiological and Anthropometrical Variables of University Volleyball Players. Paripex - Indian Journal of Research Volume : 2 | Issue : 2.
- Boris Milavic Zoran Grgantov, and Lence Aleksovska-Velickovska (2013)**. Age and positional differences in psychological Coping skills of young female volleyball players PESH 2(2013) 1:9-16. UDC:796.325.012.2:572.087.1 (Original scientific paper).
- Boris Milavic, Zoran Grgantov and Mirjana Milic (2013)**. Relations between Coping Skills and Situational Efficacy in Young Female Volleyball Players FACTA UNIVERSITATIS Series: Physical Education and Sport Vol. 11, No 2, 2013.
- Howard and Ian (2012)** Perceiving in Depth. New York: Oxford University Press. ISBN 978-0-199-76414-3.

Kamalakkannan S. and V. Mahadevan(2012). Analysis Of Selected Physical, Physiological And Skill Performance Variable Related To Playing Ability Among The Handball Players. IJAIR ISSN: 2278-7844.

Anshel M. H.and Si.G.(2008). Coping styles following acute stress in sport among elite Chinese athletes: A test of trait and transactional coping theories. -Journal of Sport Behavior, 31, 3-21. Retrieved December 11, 2008, from General OneFile database.

Schmidt, R.A. and Wrisberg, C.A. (2004). Motor learning and performance. 3rd edition. Champaign, IL: Human Kinetics.

Dewaram, W.I. (1982). Article in the Japan Vs India Volleyball Test Match Souvenir (Madras: Madras Arts Printers, 1982), pp. 21-23.



IMPACT OF TRADITIONAL FOODS AND GAMES ON INCLUSIVE GROWTH OF CHILDREN WITH SPECIAL NEEDS

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ABSTRACT

Video and junk foods have become addictive to so many children. Children find themselves amidst a complex society that is undergoing breathtaking changes. This study was designed to evaluate the impact of traditional foods and games on inclusive growth of children with special needs. Purposive sampling technique was used to select thirty children from inclusive schools. Out of thirty ten children were affected by some kind of physical disability. Samples were belonging to the age group of 6-10 years. Quasi experimental study was conducted with pre and post single group design. The result showed that the traditional foods and games improved their skill of social interaction, active participation, habit of sharing, self confidence and respect others feeling. Hence it was proved that the traditional foods and games have impact on inclusive growth of children with special needs. Establishing traditional foods and games in childhood contributes to good health throughout life. The values, habits and behaviours developed during this period often influence behaviour in adulthood. Further it is more important in the dietary plan of the special children with autism, low vision, and developmental delay. The functional properties of foods are further enhanced by processing techniques such as sprouting, malting, and fermentation. Some of the values that we gain are environment friendly and an important thing is, it is suitable for all ages so they increase the interaction between the generations. It is important for inclusion of special children to spend some time for traditional games with family and friends. Thus traditional foods and games enhance the skills of children not only physically but also mentally.

KEYWORDS: *Inclusion, Tradition, Food, Games, Special Needs Children*

INTRODUCTION

*“Odi vilaiyadu paapa
Nee ointhurukkal ahathu paapa
Koodi vilaiyadu paapa
Oru kuzhanthaiyai vaiyathe paapa”*

- Mahakavi Bharathiyar

According to Tamil poetry “**paapa paatu**” (poetry for the children) by the great Poet Mahakavi Bharathiyar, playing enhances the physical and mental health feeling of equal rights, love for all living beings, social skills and inclusion of all children. Inclusive growth is providing equality of opportunity, empowering the children physically, mentally, educationally and economically. Establishing good nutrition and physical activity patterns in childhood contributes to good health throughout life. Recent years have seen there is a revolution from a traditional living to a modern living. The social media has changed different aspects of human life styles and habits. It is to be likely that these societal changes in inclusive education also should bring inclusion in games by introducing traditional games and foods .UNESCO highlights inclusion equality and physical literacy as central tenants of quality physical education. quality traditional food and games, plays as not only the entry point for physical activity and healthy life but also for improving health awareness, enhancing civil engagement and contributing to social and inclusive growth of special needs children. Establishing traditional foods and games in childhood contributes to good health throughout life. The values, habits and behaviours developed during this period often influence behaviour in adulthood.

OBJECTIVES

- (i) To study the impact of traditional foods and games in the areas of skill of social interaction, active participation, habit of sharing, self confidence and respect others feeling.
- (ii) To study the inclusive growth among the special needs children

NEED FOR THE STUDY

We have gone far from the old traditional ways of connecting to people. A sedentary lifestyle discourages exercise and encourages obesity. A fixation on gadgets reduces participation in playing and social interaction. Social Isolation is on the increase, children are spending more time playing video games, learning how to use new modern technologies, using social networks and they forgot to play with their peers and siblings.

Nutritious food and healthy play habits in the childhood enhances academic performance and cognitive function in all children particularly it is given more importance in the case of special needs children. However for the children with special needs its valuable for so many reasons from providing an opportunity to build collaborative and social skills to teaching individuals how to focus on specific goals and overcome obstacles. Indian traditional foods are also recognized as functional foods because of the presence of functional components such as body-healing chemicals, antioxidants, dietary fibres, and probiotics. These functional molecules help in weight management and blood sugar level balance and support immunity of the body. Further it is more important in the dietary plan of the special children with autism, low vision, and developmental

delay. The functional properties of foods are further enhanced by processing techniques such as sprouting, malting, and fermentation.

Hence it is the need of the hour, to introduce traditional foods and games for the inclusive growth of special needs children.

REVIEW OF LITERATURE

Liberman (2003) emphasize the importance of variation of unique games and the care that does not change completely the integrity of the activity. It is also important that activity is motivating, because when children are included in an activity in which they experience little or no success can result in frustration and lack of motivation for future involvement.

Description of Intervention

Five traditional games like kannamoochi, kollattam, oru kudam thanni oothi, thaayam, and poo parika varukirom were selected with simple modifications. the traditional foods like thinai maavu, kambarkattu, sathu urundai raagi kool and ellu urundai were given after the games hour. The intervention was given for a period of 30 days for one hour.

Traditional Games

The traditional games have a rich culture and heritage value and wee tools of passing on some ancestral knowledge or the other. They also sharpen the observational and math skill unlike the hit and run games. They were designed in such a way that one can develop lot of skills like logical thinking, building strategy, grouping, oneness, concentration, basic mathematics, aiming and lot more. They act as learning aids , children can learn to win and lose, develop sensory skills, counting, add, improve motor skills, identify colour, improve eye hand coordination and finally to have fun .

The values that we achieve by playing the traditional games are more when compared to the games that we play nowadays. Some of the values that we gain are environment friendly and an important thing is, it is suitable for all ages so they increase the interaction between the generations.

Traditional Foods

Traditional foods can serve as a template or model for slightly different, but always nutritionally sound. Poor nutrition and malnutrition usually results from not getting enough to eat and is the most common causes of health problems. With its signs of weakness, leads to developmental delay, low vision etc. But traditional foods have the advantages of fewer calories, less saturated fat, more iron, zinc, Vitamin A, calcium and strengthened cultural capacity and well-being.

METHODOLOGY

Purposive sampling technique was used to select the samples from inclusive schools. 30 children were selected from two inclusive schools of which twenty children were normal and ten children with some physical disabilities belonging to the age group of 7-10 years. Quasi experimental design was conducted with pre and post single group design. The intervention was given in the area of five types of traditional games with mild adaptations along with five types of traditional foods. Traditional foods were given to the children after their physical education classes. The study was conducted for a period of 30 days for one hour per day. Percentage analysis was done to study the impact of traditional foods and games on inclusive growth of children with special

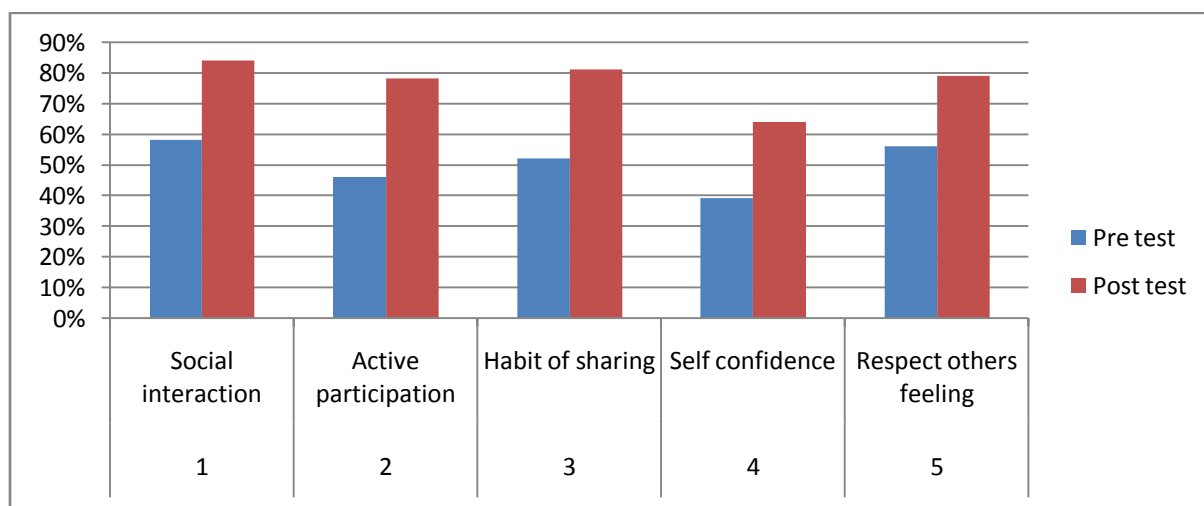
needs. Five components such as social interaction, active participation, habit of sharing, self confidence and respect other's feeling were recorded through observation.

IMPACT OF TRADITIONAL FOODS AND GAMES ON INCLUSIVE GROWTH OF SPECIAL CHILDREN

S.no	Areas	Pre test	Post test
1.	Social interaction	58%	84%
2.	Active participation	46%	78%
3.	Habit of sharing	52%	81%
4.	Self confidence	39%	64%
5.	Respect others feeling	56%	79%

RESULTS AND DISCUSSION

The above table portrays that the level of social interaction and habit of sharing was improved as 84% and 81% which is high when compared to other skills. The level of self confidence was low when compared to other skills active participation and respect of others feeling were improved to nearly 78% and 79% which shows an efficient growth. The above values shows that there was a significant improvement in interaction of special children with normal children during the sharing of traditional foods and while playing the games.



CONCLUSION

Scientific research has demonstrated repeatedly that physical education can enhance academic performance and cognitive function. However for children with special needs it is valuable for so many reasons for providing an opportunity to build collaborative and social skills to teaching individuals how to focus on specific goals and overcome obstacles.

There is no better time than now to build a supportive environment for nurturing our children and endowing them with a legacy of good health. A lack of physical activity is harmful to physical and mental well being and may also exclude a child from critical social development. It is important for inclusion of special children to spend some time for traditional games with family

and friends. Thus traditional foods and games enhance the skills of children not only physically but also mentally.

REFERENCE

1. Gallahue, D.L:Ozmun, J.C.Understanding Motor Development of Infants, Children, Adolescents, Adults, plenum press New York, NY USA, 1997: pp.195-210(Google scholar).
2. UNESCO chair at it Tralee.(2015) A blue print for action. Tralee; UNESCO chair
<http://unesco.ittralee.com/wp-content/uploads/2015/03/A-Blueprint-for-Action.pdf>
3. April Tripp: Terry L.izzo,LindaWebber;(2007); Solutions for including individuals with Disabilities Inclusion in Physical Education changing Culture
.https://files.eric.ed.gov/fulltext/EJ794529.pdf
4. Raissa Forte Pcies Cunha Paulo Cesar Pires dos Santos (2016); Inclusion in Physical Education:Changing to include. International Journal of Humanities and Social Science intervention. ISSN:2319-7722 ISSN(print):2319-7714
5. http://www3.lei.wur.nl/WECRGeneral/FoodSecurePublications/30_briones.pdf
6. <https://spakpe.org/blog/the-benefits-of-physical-education-for-children-with-special-needs/>



EFFECTS OF ASSISTED AND RESISTED SPRINT TRAINING ON RESTING PULSE RATE OF MALE SOCCER PLAYERS

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ABSTRACT

Modern Soccer is very fast by its nature. The Resting pulse rate was select as dependent variable. All the subjects of three groups were tested the selected dependent variable at prior and immediately after the program of eight weeks (weekly five days). Resisted sprint training (RST) training has least influence on Resting pulse rate on the sample population than the control group. There was no development on control group. Playing Soccer is a form of intermittent exercise consisting of repeated short bouts it high intensity exercise interspersed with periods of running at different speeds, walking and standing still, almost each player only performs high-intensity exercise for a relatively small percentage of the total game time. The data was collect for all the groups on Resting pulse rate by using the pupil double stethoscope, the units of the measurements were in second. The data were collected from the three groups before and after the training program. The control group was not exposing to any specific Training. However, they were participating in their regular Physical activities. The experimental groups I, and II were subjected to eight week of assisted and resisted training respectively.

KEYWORDS: *Competition, Intermittent, High-Intensity*

INTRODUCTION

Soccer has become a very popular game in the world. Almost all the nations play the game for the enjoyment and competition. Modern Soccer is very fast by its nature. Playing Soccer is a form of intermittent exercise consisting of repeated short bouts of high intensity exercise interspersed with periods of running at different speeds, walking and standing still, almost each player only performs high-intensity exercise for a relatively small percentage of the total game time.

Sprint Training

The aim of sprinting at full speed is to maintain, for long as possible, this speed. Speed can be developed only by sprints of three to five seconds in duration. This means covering 20 to 40 meters as the ATP reserves do not last any longer in maximum effort.

Objectives of the Study

Evaluate the individual effect of two types of sprint training of soccer players.

To assess, the collective effects of two types of sprint training of soccer players.

Study the greater effects of two types of sprint training of soccer players.

Statement of the Problem

The goal of the study was to find out the “Effects of assisted and resisted sprint training on Resting pulse rate of male soccer players.”

Significance of the Study

The study would help to formulate the design of assisted and resisted sprint training on soccer players.

This research may help the sports scientists to suggest ways and means to improving better standard in sports through this specific type of sprint training.

Hypothesis

It was hypothesized that the assisted and resisted sprint training may not produce significant improvement on Resting pulse rate of male soccer players.

It was hypothesized that the assisted sprint training may produce may not produce significant improvement on Resting pulse rate of male soccer players.

It was hypothesized that the resisted sprint training may produce may not produce significant improvement on Resting pulse rate of male soccer players.

Delimitations

To achieve this purpose of the study, forty-five male soccer players from district sports council, tiruppur, Tamilnadu, were selected as subjects at random.

The age of the subjects ranged from 18 to 25 years.

The selected subjects have divided into two experimental groups and a control group. Group -1 underwent assisted sprint training (AST) Group – 2 underwent resisted sprint training (RST),

Group –3 served as control that did not participate in any special training programme apart from their regular activity.

The Resting pulse rate was selected as dependent variable.

All the subjects of three groups were tested the selected dependent variable at prior and immediately after the program of eight weeks.

LIMITATIONS

- The influence of certain factors like life style, daily routine work, diet and other factors on the results of the study were not taken into consideration.
- No attempt has been made to control the factors like air resistance, intensity of light atmosphere and temperature during training and testing period.
- The difference in economic and educational background of the school students was not taken into consideration.
- The knowledge of the subjects in exercise science and their previous experience in doing physical activities were not taken into consideration.
- Since the subjects were motivated verbally during testing and training period, no attempt was put to differentiate their level of motivation.
- The psychological stress and other factors, which affect the metabolic function, were not taken into consideration.
- The heredity of the subjects and its influence on the selected criterion variables were not taken into consideration.

METHODOLOGY

Selection of subjects

Forty-five male soccer players from district sports council, tiruppur, Tamilnadu, were selected at random. The age of the subjects ranged from 18 to 25 years.

Experimental Design

The selected subjects were divided into two experimental groups and a control group. Group -1 underwent assisted sprint training (AST) Group – 2 underwent resisted sprint training (RST), Group –3 served as control that did not participate in any special training program apart from their regular activity. The Resting pulse rate was selected as dependent variable. All the subjects of three groups were tested the selected dependent variable at prior and immediately after the program of eight weeks (weekly five days). The data was collected for all the groups on Resting pulse rate by using the pupil double stethoscope, the units of the measurements were in second. The data were collected from the three groups before and after the training program.

Training Programme

The control group was not exposed to any specific Training. However, they were participating in their regular Physical activities. The experimental groups I, and II were subjected to eight week of assisted and resisted training respectively. Then training was given for five days per week. Every training session lasted for 60 to 90 minutes. The training program was scheduled for the morning between 6.30 am and 8.00 am.

Criterion Measures

Resting Pulse Rate

To measure the rate of heart beats per minute while the subjects were at rest used the pupil double stethoscope. For accuracy –shake, in the study, the resting heart rate was measured in the subjects hostel rooms as soon as they woke up from their sleep in the morning.

Statistical Analysis

Ancova was use to find out significant adjusted posttest mean difference of three groups with respect to speed.

Scheffe's post hoc test was use to find out pair-wise comparisons between groups with respect speed.

RESULTS AND DISCUSSION

TABLE 1
ANALYSIS OF COVARIANCE OF PRE-TEST POST TEST AND ADJUSTED POST
TEST ON RESTING PULSE RATE OF EXPERIMENTAL GROUP I EXPERIMENTAL
GROUP 2 AND CONTROL GROUP
(SCORES IN NUMBERS)

Test	Exp. Group I	Exp. Group II	Control Group	Source of Variance	Sum of Squares	D F	Mean Squares	F ratio
Pretest								
Mean	67.53	68.27	68.27	Between	10.72	3	3.57	0.10
S.D.	1.68	1.22	1.36	Within	126.13	56	2.25	
Post test								
Mean	65.53	66.27	68.33	Between	110.27	3	36.76	16.69*
S.D.	1.55	1.22	1.23	Within	123.33	56	2.20	
Adjusted Post test								
Mean	65.92	65.97	67.85	Between	59.30	3	19.77	84.00*
				Within	12.94	55	0.24	

* Significant at .05 level of confidence.

RESULTS OF SPEED

Pre - Test: The AM \pm SD pretest Resting pulse rate scores of G1, G2, and G3 were 67.53 ± 1.68 , 68.27 ± 1.22 , and 68.27 ± 1.36 respectively. The obtained pre test F value of 1.59 was lesser than the required table F value of 2.76. Hence the pre test means value of assisted sprint, resisted sprint and control group on Resting pulse rate before start of the respective treatments were found to be insignificant at 0.05 level of confidence for the degrees of freedom 3 and 56. Thus this analysis confirms that the random assignment of subjects into three groups were successful.

Post - Test: The AM \pm SD post- test Resting pulse rate scores of G1, G2, and G3 are 65.53 ± 1.55 , 66.27 ± 1.22 , and 68.33 ± 1.23 respectively. The obtained post test F value of 16.69 was greater than the required table F value of 2.76. Hence, the post- test means value of resting pulse rate show significant at 0.05 level of confidence for the degrees of freedom 3 and 56. Thus, the results obtained proved that, the interventions namely assisted sprint, resisted sprint and control group on resting pulse rate produced significantly different improvements among the three groups.

Adjusted Post - Test: The AM \pm SD post - test Resting pulse rate scores of G1, G2 and G3 are 65.92, 65.97, and 67.85, respectively. The obtained adjusted post - test F value of 84.00 was greater than the required Table F value of 2.76. Hence the post - test means value of Resting pulse rate show significant at 0.05 level of confidence for the degrees of freedom 3 and 55. Since the observed F value on adjusted post test mean among the groups such as assisted sprint, resisted sprint on Resting pulse rate produced significantly different improvements among the three groups.

Hence the null hypothesis was rejected for this variable. In order to find out which intervention programme used in the present study was the source for the significance of adjusted means was tested by Scheffe's post hoc test. The results of the same are presented in the table- I (a)

TABLE - I (A)
SCHEFFE'S POST HOC TEST MEAN DIFFERENCES ON RESTING PULSE RATE
AMONG THREE GROUPS
(SCORES IN NUMBERS)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
65.92	65.97	-	0.05	0.63
65.92	-	-	0.87*	0.63
65.92	-	67.85	1.93*	0.63
-	65.97	-	0.91*	0.63
-	-	67.85	1.88*	0.63
-	65.97	67.85	2.79*	0.63

* Significant at .05 level of confidence.

From Table V (a) shows, the significant difference of paired adjusted post test means of assisted sprint, resisted sprint and Control group on Resting pulse rate. The obtained mean differences between assisted sprint group and resisted sprint groups were 0.05. No differences were found on these comparisons, because of the confidential values 0.63 was greater than the mean differences. Remaining all group comparisons was greater than the confidential interval value on Resting pulse rate

FINDINGS

There was a significant difference among the two different sprint trainings and control group on Resting pulse rate. Significant improvement noticed on Resting pulse rate, due to two-sprint training program among male soccer players.

DISCUSSION NO HYPOTHESES

The first hypothesis stated that the Assisted Sprint Training (AST) may produce significant improvement on of male soccer players.

The results of the study show significant improvement on resting pulse rate due to assisted and resisted sprint training. Hence, the first null hypotheses rejected.

The second hypotheses stated that the assisted sprint training might not produce significant improvement on Resting pulse rate of male soccer players.

The results of the study show significant improvement on resting pulse rate due to assisted sprint training. Hence, the second null hypotheses rejected.

The third hypotheses stated that the resisted sprint training might not produce significant improvement on Resting pulse rate of male soccer players.

The results of the study show significant improvement on resting pulse rate due to resisted sprint training. Hence, the third null hypotheses rejected.

CONCLUSION

The two experimental training groups namely, assisted sprint training (AST) and Resisted sprint training (RST) significantly improved the Resting pulse rate of the sample population.

Assisted sprint training (AST) has greater influence on Resting pulse rate, on the sample population than the other groups.

Resisted sprint training (RST) training has least influence on Resting pulse rate on the sample population than the control group. There was no development on control group.



GROOMING SKILLS OF A VISUALLY IMPAIRED CHILD

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ABSTRACT

“Grooming is a very important aspect of social life for everyone”. As a sighted infant, may face problem in maintaining hair, face, nail before training. In the case of visually impaired child, face more problems because of their absence of sight. Even though visually impaired students, to know how to take care of their appearance can only help to boost their self-confidence. There are experiences and concepts casually and incidentally learned by sighted students that must be systematically and sequentially taught to the visually impaired student. The grooming for visually impaired students is not the same as for sighted students. Indeed, it is much larger and more complex. Thus activities of daily living include all those activities which people do every day. Training a visually impaired person in these activities would enable him to become self-reliant, independent and more confident in his routine activities. Although these activities are not an end in itself, these certainly are a very essential means toward complete, meaningful and comprehensive rehabilitation. By recognising the needs and requirements of the blind child particularly at pre-primary level, makes the teacher or the care taker to make a correct plan for the child. This study makes the child to learn the appropriate skills like Combing and care of hair, dressing and understanding, shaving, using facial cream and food wear identification.

KEYWORDS: *Visually Impaired, Daily Living Activities, Grooming, Self Care Activities*

INTRODUCTION

Activities of Daily Living (ADL) comprise everything entailed in human life and relationships. These are the basic activities necessary during an ordinary day. There are hundreds of activities which a person performs from the moment he wakes up in the morning till he goes to sleep at night. Sighted persons normally learn to perform these activities by themselves by observing other persons. A large part of daily living activities are learnt by observation and imitation. As visual discrimination is involved in these activities, a visually impaired person cannot learn the same on his own. Through his other senses, he may get an idea of what is going on but he cannot learn the exact procedure.

NEED THE STUDY

Grooming refers to the things that people do to keep themselves clean and make their face, hair, and skin looks nice. Combing and care of hair, dressing and understanding, shaving, using facial cream, skincare, applying cosmetics, hygiene, using hair oil, etc., For the visually impaired children grooming makes them to live a confident life. Appropriate training will be needed for them to good grooming sense.

It has been observed that loss of confidence associated with the loss of vision retards the daily living skills of such a person. At the same time, lack of opportunity and environment are also the major causes of restricted performance of such activities. It is important for person with blindness to master as many of these daily living skills as he can, so that they need not depend on others. If they cannot do these activities he must wait until someone else can help them. This is an inconvenience not only to others but also to person with blindness themselves.

For the visually impaired children grooming makes them to live a confident life. Appropriate training will be needed for them to good grooming sense. Studying the daily living difficulties encountered by the visually impaired children may help the parents to train their child.

OBJECTIVES

To teach basic grooming skills like maintenance of face, hair and nail.

- To conduct pre and post-tests to find out the efficacy of the development of grooming skills
- To teach the skill of self-care activities by using different techniques and aids
- To promote fine motor skills (manipulative, grasp motor).

To promote cognitive skills through visual memory, imagination, concentration.

REVIEW OF LITERATURE

Ittyerah (2000) studied the role of experience with motor tasks in explaining a difference between children with visual impairment and sighted children has been advanced. She found that sighted blindfolded children ages 6 to 15 were faster on some tasks measuring manual dexterity than children who were blind. Although not explicitly studied and proposed that experience with similar tasks during play or daily living activities may have led to faster performance by the sighted blindfolded children.

Brambring (2001) conducted a study on motor activity in children who were blind or partially sighted ages 4 to 7. The results showed that children who were blind exhibited 63% of leg and 83% of arm activity compared to sighted peers. Partially sighted children exhibited 77% of leg

and 90% of arm activity compared to sighted peers. In addition, children who were blind exhibited significantly less arm and leg activity than their partially sighted peers. It was suggested that limited opportunities for motor activities may be an explanation for delays in fine and gross motor skills.

Lieberman (2005) suggested that children with VI should participate in movement activities with changing conditions as well as activities that are more constant in order to experience performing different kinds of motor skills. One study showed that children with VI like to participate in movement activities with changing conditions, such as baseball, football, and basketball but how this affected motor skill performance was not examined.

Lemmink (2007) examined the loco motor and object control skills of 20 children with mild visual impairment and severe visual impairment and the association with the degree of visual impairment. No significant differences were found in this moderate methodological quality study between children with mild visual impairment and severe visual impairment. In this study, the test was slightly adapted in order to enable the children with visual impairment to perform the test.

Houwen and Hartman (2008) examined the performance of 48 children with Visual Impairment ages 7 to 10 on manual dexterity, ball skills and balance. There were no significant differences in this high methodological quality study between children with Mild Visual Impairment and Severe Visual Impairment except for bimanual coordination in 7- to 8-year-olds and eye-hand coordination in both the 7 to 8-year-olds and 9- to 10-year-olds, favouring the children with Mild Visual Impairment. Slight adaptations in materials and procedures were used.

METHODOLOGY

This study adopted case study method. The study employed that case study of the one single visually impaired child, pre and post-test comparison of grooming skill. From the Early Intervention Centre, Avinashilingam Educational Institutions, one visually impaired child is taken as a sample for the study. The sample taken by the investigator is 3 year old visually impaired children with additional disability as autism. She have the ability to identify few material required for grooming like comb, soap etc, but she is dependent in all her activities of daily living skills particularly grooming.

Check list tools used to analyse the data. This method of data collection is quite popular. It has been adopted by the private individuals, research workers, private and public organisation. For this study the investigator adopted the check list as a tool to collect the data. In this tool the components mentioned for doing the grooming skill like combing, nail cutting and face wash.

The response recorded by the way of marking tick on the rating presented at the end of the components as present and absent. While getting the response from the child, observation plays a main role. Observations are critical in this studying the cases. The procedure of observations and the behaviours to be observed must be carefully planned.

Experimental method is used for this study. This method is capable of deciding the 'case – effect' relationship between independent and dependent variables. In experimental design the researcher has adopted the quasi- experimental design. In this design the pre, post-test were conducted. The pre-test was conducted before the training. After the intervention or training the post test was conducted.

While importing the skills to the child number of adaptive teaching method are used.

- Readiness skills like discrimination, coordination, adapting to the situation, exploration are taught to the child.
- Sensory training like identifying the smell of the soap, difference between water and oil, identifying the extra nail has been taught.
- Real objects are used to explore the materials like comb, shop, tap, water, wash basin, nail cutter, etc.
- Tactual aids are used to discriminate things.
- Demonstrations are used to train the skill like nail cutting, face washing, combing, etc.
- Task analysis method is preferred to do step by step training.
- Positive reinforcements, giving directions, prompting are used to encourage the child to do the activities independently.

ANALYSIS AND INTERPRETATION

The investigator assessed the grooming skill of the child, mainly consists of three components,

- Combing
- Nail cutting
- Face wash

These analysis and interpretation of data is given below.

Comparison of skill development in pre test

TABLE 1
COMPARISON OF SKILL DEVELOPMENT IN PRE TEST

Skills	Scores	Pre test
Combing	2/7	28%
Nail cutting	1/5	20%
Face washing	3/11	27%

The table 1 shows that that comparison of each skill development in pre-test. The skills are obtained in pre test of combing, nail cutting, face washing, these skills poses 28%, 20%, 27% respectively. It shows the skills development during pre-test. It shows that the mild development of all the components in grooming skill.

Comparison of skill development in post test

TABLE 2
COMPARISON OF SKILL DEVELOPMENT IN POST TEST

Skills	Scores	Pre test
Combing	5/7	71%
Nail cutting	3/5	68%
Face washing	8/11	70%

The table 2 shows that that comparison of each skill development in pre-test. The skills are combing, nail cutting, face washing, these skills poses 71%, 60%, 73% respectively. This shows

that the skill development during post-test. It shows the major development in the areas of grooming components.

Pre and post-test report of child:

The pre and post-test responses of the child who exposed to training is presented in table1

TABLE 3
PRE AND POST-TEST REPORT OF CHILD

Skills	Score	Pre test	Score	Post test
Combing	2/7	28%	5/7	71%
Nail cutting	1/5	20%	3/5	60%
Face washing	2/11	27%	8/11	73%
Mean		25%		68%

In the above table is outlined by converting the present and absent response of the child into 0, 1 respectively. It interprets percentage of pre and post-test. The mean score of pre and post-test were compared. The mean of pre-test is 43 % and post-test is 68%. Therefore it shows that after teaching the skills to the child, the goals are attained and it is very effective.

The study reveals that training is helpful for the visually impaired. Training the grooming skill is effective for the children at 3-6 years, to make them independent in fore coming years. This study helps to learn the skills at very early stage of life, because the learning in very easy in childhood stage. This study found that the through real objects, demonstration and tactual aids is very effective. The difficulties encountered by the children were naturally seen. In planning the teaching program by the investigator is difficult but effective plan made changes in the development of the child. Teaching abstract concepts like combing, cutting nails without injury, opening the tap correctly were made as abstract to the child and as well as to the trainer to teach.

CONCLUSION

Among the special children majority falls on visually impaired. But they receive least attention in the society and in the school environment also. So far few aids and appliances have not reached them. Still the blind children do not know where they are. In schools and classes, they do not know what method to be followed easily in learning. By conducting this study to high lights the difficulties encountered by the blind children in learning skills especially grooming. For all this, the teachers who handle the blind children should be oriented properly. The children must be given proper aids and appliances. It is a good experience to know the difficulties and problem of visually impaired children. This study also helps us to draw the solution for the problem and impact of the solution also.

REFERENCES

- G .Lokanathareddy, 2000, education of children with special needs, discovery publishing house new delehi-110002.
- C.R Kothari, 1985, research methodology, methods and techniques, new age international publishers, New Delhi.
- National Federation of the Blind (NFB), 1800 Johnson Street, Baltimore, Maryland 21230.



EFFECT OF VISUAL AIDS IN NUTRITION EDUCATION

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ABSTRACT

This study was aimed to find out the effect of visual aids in nutrition education. A simple random sample of 120 girls students was selected in High school .Data was analysed by t-test. Findings showed that there is significant difference between the pre and post-test scores with regard to macronutrients, vitamins and minerals. Results also revealed that there is a relationship between pre and post-test performance of the students as they have gained much knowledge on macronutrients, vitamins and minerals. Thus, nutrition education through visual aids has an influence on the knowledge gain of the selected students regarding minerals. This nutrition education should form a integral part of the science curriculum .It can also be integrated with the organization of the school lunch program (PANDE,2004).Adolescence I s an appropriate age group to receive nutrition education. To prevent the above said scenario, nutrition education was disseminated through visual aids upon the target group of adolescent girls and was tested for their knowledge gain on vitamins.For better nutritional status inculcation of good nutritional habits at an early stage is very essential. The adolescent girls be helped to improve their nutritional status through nutrition education. Thus, nutrition education through visual aids has an influence on the knowledge gain of the selected students regarding minerals.

KEYWORDS: *Macronutrients, Nutrition, Influence, Social Leaders,*

INTRODUCTION

Food habits are complex in nature and multiple conditioning factors in their development. Young children do not choose what they eat, but their parents decide and prepare their food for them. During infancy and early childhood the family is a key environment for children to learn and develop food preferences and eating habits. As they grow and start school, teachers, peers and other people at school, together with the media and social leaders, become more important. Progressively children become more independent and start making their own food choices. The peer group is very important for adolescents and has a major influence in developing both food habits and lifestyles.

Community trials suggest that nutrition education is an accessible effective tool in health promotion programs with a focus on the development of healthy eating practices (ARANCETA, 2001).

NEED FOR NUTRITION EDUCATION

According to Devadas (1992), nutrition education is the process by which beliefs, attitudes, environmental influences and understanding about food are converted into practices which are nutritionally sound and consistent with individual's need, purchasing power, available food sources and socio cultural background.

In India about one fourth of population is unable to obtain their daily nutritional requirements and twenty five percent suffer from malnutrition or inadequate nutrition. (ELIZABETH et al, 2003).

Adequate nutrition, a fundamental cornerstone of any individual's health, is especially critical for women because inadequate nutrition affects not only women's own health but also the health of their children. One of the ways of combating the problem of malnutrition is through nutrition education of children, their families and the community (ROY, 2003).

At present, the nutrition education given in schools is in the form of isolated bits of information so it is necessary to formulate a systematic syllabus which should emphasize the use of locally available and nutritious foods. This nutrition education should form an integral part of the science curriculum. It can also be integrated with the organization of the school lunch program (PANDE, 2004). Adolescence is an appropriate age group to receive nutrition education.

Visual Aids to Instruction

The selection and use of appropriate sequences of interlinked audio, visual or instructional media learning experiences reinforce and strengthen one another in furthering the progress of the learner. The human eye could differentiate very minute differences in colour and shade. It is quite natural that the knowledge gained through the sense of sight is more vivid, accurate and permanent. More than 80 percent of our knowledge is gained through our eyes. (Singh, 2005)

OBJECTIVES OF THE STUDY

1. To Develop a tool and assess the nutritional knowledge of the adolescents girls through pre-test.
2. To disseminate nutrition education using visual aids to instruction

3. To conduct a post test to find out the efficacy of the instruction given.
4. To find out the differences between the pre and post-test with regard to minerals and vitamins.

HYPOTHESIS

1. There is no significant difference between the pre and post-test scores with regard to macronutrients.
2. There is no significant difference between the pre and post-test scores with regard to vitamins.
3. There is no significant difference between the pre and post-test scores with regard to minerals.

TOOL CONSTRUCTION

A Questionnaire consisting of 50 questions was prepared by the investigator to gather information regarding the nutritional knowledge of the adolescent girls personal information, macro nutrients, micro nutrients, general nutritional habits. The sample of the present study consisted of 120 adolescents girls in high school.

PRE-TEST

A Questionnaire was given to each of the student selected in order to find out their nutritional awareness/ knowledge.

POST-TEST

After implementing the package among adolescent girls, the same questionnaire was given to the same students to analyse the extent to which the nutritional knowledge was gained by the students, using scoring method.

RESULTS AND DISCUSSION

Knowledge Gained by the Selected Students on Macronutrients

TABLE-1

S.No	Macronutrients	Mean	Mean difference	Standard Deviation	t-value
1.	Pre-test score	4.28		1.60	10.87*
2.	Post-test score	7.43		0.64	
3.	Pre-test score		3.15	1.83	

*Significant at 0.01 level.

Table 1 depicts the knowledge gained by the selected students on macronutrients.

Information was gathered on importance of carbohydrate, protein, fat, fiber and water in our daily diet and disseminated through visual aids and the post-test was given. The pre-test score of the adolescent girls was 4.28 and was increased to 7.43 in the post-test. The difference in scores was significant at one percent level when statistically analyzed. The pre and post –test scores portray that the nutrition education on the aspect of macronutrients was well learnt by the students.

Knowledge Gained by the Selected Adolescent Girls on Vitamins**TABLE-2**

S.No	Vitamins	Mean	Mean difference	Standard Deviation	t-value
1.	Pre-test score	11.36		2.73	8.54*
2.	Post-test score	16.08		1.48	
3.	Pre-test score		4.72	3.45	

*Significant at 0.01 level.

There is a great need to impart nutrition education on vitamins. Table 2 shows the knowledge gained by the selected girls regarding vitamins.

Buyckx(2002) conducted a study on “Interaction between micronutrient malnutrition and infectious disease”. These interactions can confound efforts to control various diseases. For example vitamin A deficiency interacts with measles synergistically and increases the severity of measles and leads to vitamin A deficiency, blindness and death.

To prevent the above said scenario, nutrition education was disseminated through visual aids upon the target group of adolescent girls and was tested for their knowledge gain on vitamins. The mean value of the post-test score was 16.08 which was higher than the pre-test score 11.36. It infers that there is a significant difference between pre and post-test performance of the students as they have gained much knowledge on fat soluble and water soluble vitamins

Knowledge Gained on Minerals by the Selected Students**TABLE-3**

S.No	Minerals	Mean	Mean difference	Standard Deviation	t-value
1.	Pre-test score	6.00		1.75	16.19*
2.	Post-test score	11.68		1.85	
3.	Pre-test score		5.68	2.18	

*Significant at 0.01 level.

Table-3 shows the mean scores gained by the selected students on knowledge regarding minerals. The mean value of the post-test score 11.68 is higher than that of pre-test score is 6.00. Hence it is clear from the table that there is a significant difference between pre and post –test performance on macro minerals which include calcium, chlorine, magnesium, phosphorus, sodium and sulfur and the micro minerals. Thus, nutrition education through visual aids has an influence on the knowledge gain of the selected students regarding minerals.

CONCLUSION

The present study informs us the need for nutrition education. For better nutritional status inculcation of good nutritional habits at an early stage is very essential. The adolescent girls be helped to improve their nutritional status through nutrition education. The parents need to be sensitized towards the use of micronutrients, vitamins and minerals.

REFERENCES

- Ashok Pande(2004)''Text Book of Food and Nutrition'' (Minerals, fat, protein) , Akansha Publishing House ,New Delhi P.34.
- Rameshwarsharma P.R (1996),Proceedings of the Nutrition Society of India,Hydrabad,P.40.
- Roy.P.K(2003) ,Family Diversity in India Gyan Publishing House ,New Delhi ,P. 72.



EFFECTIVENESS OF TEACHING CHEMICAL EQUATION FOR HIGHER SECONDARY STUDENTS THROUGH CAI

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ABSTRACT

Chemistry is a difficult subject to teach and to learn at both secondary and tertiary levels. Major learning difficulties are due to the particular views of chemistry phenomena that in many ways contradict intuitive and everyday views of the learners. As a result, major misunderstandings occur when students try to comprehend chemical explanations within the framework of their pre-instructional conceptions. Students find difficulty in remembering molecular formulae, writing equations, completing the equations, balancing the equations etc. Thinking all the above in mind, we can say that there is a necessity to improve the attachment of the students in learning chemical equation. There is a need to analyse the problems of Higher Secondary School level students in learning chemical equation. This paper describes research findings on students difficulties in learning chemical equation and on attempts to guide students to overcome the difficulty. Teaching methods such as lecture, memorization, text book reading etc do not encourage student's activities such as discussion, manipulating objects, experimentation, and creative thinking which are necessary for real science learning. In order to reduce the difficulty of learning chemical equation, a Computer Assisted Instruction remedial package on "Chemical Equation" was prepared and experimental sessions were carried out for 4 weeks. Post test was conducted using a pattern similar to that of pretest in all aspects to the selected students. New strategies should be used to give remedy to the specific problem. These teaching strategies and techniques appear to hold great educational potential, especially for the students who have difficulty in learning.

KEYWORDS: *Chemical equation, Multimedia*

INTRODUCTION

Chemistry students frequently report difficulties which many students experience in developing an understanding of chemical processes. Students appear to struggle to construct the forms of mental model and conceptual representations needed to understand and comprehend the actions of the unobservable entities such as atoms and molecules involved in chemical equations.

In order to improve performance in chemistry the onus lies on the part of the teacher to use instructional strategies that will enhance performance. Most chemistry teachers believe that scientific investigation must be done in the laboratory, even when the laboratories are not readily available; science teachers employ traditional method and do not facilitate real learning of science subjects (chemistry inclusive). Teaching methods such as lecture, memorization, text book reading etc do not encourage student's activities such as discussion, manipulating objects, experimentation, and creative thinking which are necessary for real science learning. Nevertheless most chemistry lessons are still taught with this conventional method. Teaching methods such as inquiry, project, demonstration, problem solving, field trips, cooperative or group learning, excursion remedial, laboratory and guided discussion and the use of audiovisual materials have been recommended for the teaching of science in school (Adedoyin, 2000; Ajewole, 2001). Experiential or "hand on" learning is fast replacing or supplementing the traditional chalk talks" methods of teaching Experiential learning increases retention, motivates students to learn and encourage group cooperation. In a study conducted by Ikiroma&Chinda (2013) on the impact of inquiry, project, lecture and demonstration teaching methods on senior secondary student's achievement in separation of mixture practical test the project method produced significantly better performance in chemistry achievement test.

OBJECTIVES

- To identify the learning difficulties encountered by students in learning chemical equations.
- To prepare the module for teaching and learning of chemical equations.
- To analyze the impact of Multi media module on learning of chemical equations with respect to gender, type of school and locality.

METHODOLOGY

One hundred and fifty higher secondary students from the schools of Coimbatore city were taken as sample for the study. Pre test was conducted to the 150 students to find out their level of understanding of the concept of Chemical equation. The areas of difficulties addressed in the pre test are:-symbols of elements, chemical formula, writing of chemical equation, completion of an equation and balancing the equation. The scores of the pretest and their academic achievement marks in the Half yearly examination were analysed. This analysis helped the investigator in the selection of the sample for the II phase of the study. The students who scored below 20 percent in the pretest were selected for the II phase of the study. Based on this criterion, 100 students were selected for the II phase for remedial instruction. In order to reduce the difficulty of learning chemical equation, a Computer Assisted Instruction remedial package on "Chemical Equation" was prepared and experimental sessions were carried out for 4 weeks. Post test was conducted using a pattern similar to that of pretest in all aspects to the selected students.

RESULTS AND DISCUSSION**Problems Identified in writing Chemical Equation**

Table 1 gives problems identified in writing chemical equation by the selected sample.

TABLE 1 PROBLEMS IDENTIFIED IN WRITING CHEMICAL EQUATION

S.No	Problems Identified	Number of multiple responses N=150	Percent
1	Balancing the chemical equation	125	83
2	Completing the equation	110	73
3	Writing Molecular Formula	85	57
4	Symbols used in chemical equation	60	40
5	Symbols of elements	40	27

Eighty three percent of students had problem in balancing the chemical equations. Seventy three percent of students were having the problem in completing the equation. Fifty seven percent of students had problems in writing molecular formulae. Whereas forty percent and twenty seven percent had the problems of symbols used in chemical equation and problems in symbols of elements.

The above result is supported by the study conducted by Sanger (2005), which reveals that most common student errors included confusion between the concept of subscripts and coefficients and including unreacted chemical species in the equation.

Comparative Analysis of Performance of Students in Learning of Chemical Equation of Government and Government Aided Schools

Table 2 shows the comparative analysis of students of government and government aided schools.

TABLE 2 COMPARATIVE ANALYSIS OF PERFORMANCE OF GOVERNMENT AND GOVERNMENT AIDED SCHOOL STUDENTS IN LEARNING CHEMICAL EQUATION

Type of School	Mean	N=100	S.D	t' value
Government	8.00	50	3.23	4.89**
Government aided	4.84	50	3.23	

** Significant at 0.01 level

The above table depicts that there is significant difference between students of Government and Government Aided School. The t-value is 4.89 which is higher than the table value of 2.62 at 1% level of significance respectively. Hence the null hypothesis stated as “*there is no significant difference between students of Government and Government Aided School*” is rejected.

Comparative Analysis of Gender Based Performance

Table 3 shows the comparative analysis of gender based performance.

TABLE 3 COMPARATIVE ANALYSIS OF PERFORMANCE OF STUDENTS IN LEARNING CHEMICAL EQUATION WITH REFERENCE TO GENDER

Gender	Mean	N=100	S.D	't' value
Male	4.62	50	2.07	5.78**
Female	8.22	50	3.88	

** Significant at 0.01 level

The above table reveals that there is significant difference between the performance of students in learning chemical equation with reference to gender. The t-value is 5.78 which is higher than the table value of 2.62 at 1% level of significance. Hence the null hypothesis stated as "*there is no significant difference between the performance of boys and girls*" is rejected.

Comparative Analysis of Locality Based Performance of students

Table 4 gives the comparative analysis of locality based performance of students in learning chemical equation.

TABLE 4 COMPARATIVE ANALYSIS OF LOCALITY BASED PERFORMANCE

Locality	Mean	N=100	S.D	't' value
Rural	7.83	50	3.24	4.57**
Urban	4.83	50	3.58	

** Significant at 0.01 level

The above table shows that there is significant difference between locality based performance. The t-value is 4.57 which is higher than the table value of 2.62 at 1% level of significance. Hence the null hypothesis stated as "*there is no significant difference between the performance of students in learning chemical equation with respect to locality*" is rejected.

FINDINGS OF THE STUDY

- Majority of students had problem in balancing the chemical equations and completing the equation.
- The results of the pre test showed that 50 percent of the samples have scored below 60% marks, where as in the post test 85 percent of the students have scored above 80% marks. This shows the effectiveness of the remedial package.
- Gender difference plays a significant role in learning chemical equation where the girls performed better than boys.
- There is significant difference between performance of students in learning chemical equation with respect to locality. Rural girls performed better than Urban students.
- There is significant difference in the improvement of learning chemical equation of Government School students than the students of Government Aided Schools.

CONCLUSION

Remedial Strategies are very essential for effective learning and in improving the quality of education. Today we see the chalk and talk method dominated in the classroom. This is not only way of teaching. Student's find chemical equation as difficult at the Higher Secondary level. The teaching strategies and techniques are very important for the quality of teaching. Good strategy of instruction makes students aware of the purpose of learning, how they work, why they work, when they work and where they can be used. New strategies should be used to give remedy to the specific problem. These teaching strategies and techniques appear to hold great educational potential, especially for the students who have difficulty in learning.

REFERENCE

- Adedoyin, F.A. (2000). Teaching Strategies in Population Education In Perspective in population Education, Selected Readings in Population Education 2, National Education Research Development Council (NERDC) Lagos: NERDC Press .
- Ajewole, G.A. (2001). Effects of Discovery and Expository Instructional Method on the attitude of students to Biology. J. Res. Sci Teaching 28 401-409.
- Ikiroma, B. & Chinda, W. (2013). The Impact of Inquiry, Project and Lecture / Demonstration Teaching Methods on Senior Secondary Students Achievement in Separation of Mixtures Practical Test. Journal of Issues in Professional Teacher Education 6 (2) 17 – 30.



READING AND WRITING SKILL DEVELOPMENT OF CHILDREN WITH INTELLECTUAL DISABILITY THROUGH ART AND CRAFT

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ABSTRACT

The present study is designed to find out the effect of art and craft activities on teaching reading and writing skills among Students with Intellectual Disability. Students with Intellectual disability at primary level in the age range of 7 to 12 years from special school were included as sample for the present study. Selected sample were randomly assigned to two homogenous groups i.e. control group and experimental group. Self developed checklist with the items on reading and writing developed by the researcher was used in the study. Two group Pre and post test design with control group has been used in the present study. The developed art and craft activity was implemented for 20 sessions among the selected students in the experimental group. Statistical analysis revealed significant difference in the pre and post test scores ($p < 0.01$) of the sample in reading and writing skills through art and craft activities. Hence the findings of the study indicate positive and highly significant effect of art and craft activities on learning reading and writing skills among children with intellectual disability.

KEYWORDS: *Intellectual Disability, Art and Craft, Reading and Writing skill.*

INTRODUCTION

Curriculum for children with intellectual disability should include functional reading and writing skills which emphasize the application of those skills in various real life situations. Teaching these skills through art and craft activities uses most of senses like vision, hearing, and touch which stimulate cognitive development. Several studies in the report " Learning, Arts and the Brain" published in March, 2008 suggested that training in the art activity is highly related to improvement in math or reading skills.

Art is important to the development of all children, but it is particularly valuable to children with disabilities for a number of reasons. When creating art, the child is building a wide variety of skills – both motor and cognitive. The various sensory experiences involved in art production are positive and pleasurable sensations. Additionally, the creative process provides opportunities for expressing ideas and emotions, which can sometimes be difficult to do through speech or written word for the child with disabilities. And, most importantly, the confidence and overall well being of the child is enhanced through the successful manipulation of art materials.

Hence the research has made an attempt to study the effect of art and craft activities to improve the reading and writing skills of Students with Intellectual Disability.

OBJECTIVES OF THE STUDY

1. To find out the reading skill development of Students with Intellectual Disability through art and craft activities.
2. To find out the writing skill development of Students with Intellectual Disability through art and craft activities.

RESEARCH QUESTIONS

1. Is there any difference between post test mean scores of Experimental and Control group in developing reading skills of Students with Intellectual Disability through art and craft activities?
2. Is there any difference between post test mean scores of Experimental and Control group in developing writing skills of Students with Intellectual Disability through art and craft activities?

METHODOLOGY

Two group (Experimental and Control group) pre and post test experimental research design was used to measure the effect of art and craft on developing reading and writing skills among children with intellectual disability. Ten children with intellectual disability both boys and girls studying in special school in the age range of 7 to 12 years were selected as per the requirements of the art and craft activity on developing reading and writing and skills for the study.

Procedure and Data collection

Ten students from two sections at primary level were selected on the basis of performance in pre-requisite skills required to perform art and craft activities. Before the intervention, a pre-test was conducted and scoring was recorded in a pre-prepared record sheets. The experimental group students were taught reading and writing skills through art and craft activities whereas the control group were taught through conventional method. The concepts in reading and writing were taught to the selected students in the experimental group for a period of 20 sessions (1

session = 45 minutes) for 20 days. Post test on reading and writing skills for both experimental and control group was administered at the end of 20 sessions.

The following concepts were selected to teach reading and writing skills through art and craft activities.

Skills	Concept	Activity
Reading	Colour	<ul style="list-style-type: none"> ✓ Making Birthday Cap ✓ Puppet Making ✓ Garland Making
	Shapes	<ul style="list-style-type: none"> ✓ Circle doll ✓ Train making ✓ Fish making ✓ Home making
Writing	Tracing and Colouring	<ul style="list-style-type: none"> ✓ Circle doll ✓ Tracing and Colouring Train - Square shape ✓ Tracing and Colouring Fish - Triangle shape ✓ Tracing and Colouring Home - Square and Triangle shape

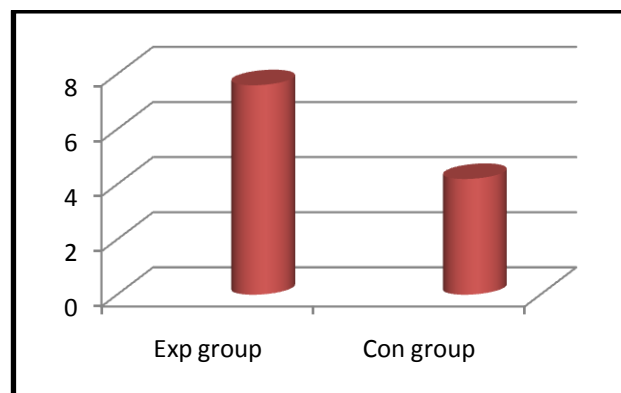
RESULTS AND DISCUSSION

Research Question No.1

Is there any difference between post test mean scores of Experimental and Control group in developing reading skills of Students with Intellectual Disability through art and craft activities?

TABLE 1 & FIG.1 ANALYSIS BASED ON THE CALCULATED POST TEST MEAN SCORES IN READING BETWEEN EXPERIMENTAL AND CONTROL GROUP

Group	N	Mean	SD	t	df	Sig
Exp group	5	7.60	0.55	10.752	8	0.00001
Con group	5	4.20	0.45			
Total	10	2.70	1.85			



DISCUSSION

From the table (1) it is found that the mean score of post test of reading concepts by the experimental group is 7.60 and control group is 4.20 and the difference between the post test score of experimental and control group in reading concept is 3.40 with standard deviation of 0.55 and 0.45 respectively. The t-test was conducted to find out whether there is any significant difference between the post means score of experimental and control group in learning reading concepts through art and craft activity. The results indicated t-value of 10.752 which is highly significant at (P=0.00001) which is lesser than (0.01) level of significance.

The result showed that teaching reading concept (colours & shapes) through art and craft activities is more effective than teaching through conventional method among children with intellectual disability. Hence, learning through art and craft activities has significant impact on the performance of the students belonging to experimental group.

Interpretation

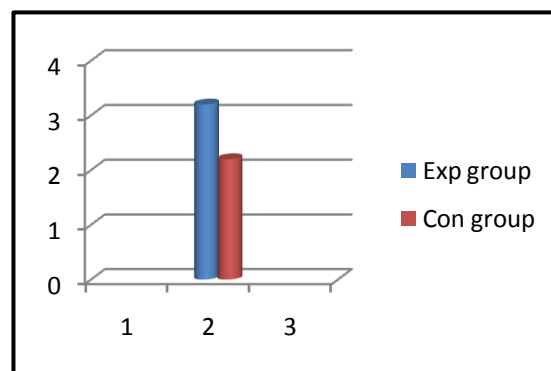
From the above analysis, it is observed that there is significant difference in the performance of students belonging to experimental group in reading skills. An increase in post test mean scores of Experimental and Control group was observed. However the increase in post test means score of experimental group is significantly higher than the control group. Therefore it is evident that there is a positive impact on learning reading skills through art and craft activities among children over conventional method of teaching children with intellectual disability

Research Question No.2

Is there any difference between post test mean scores of Experimental and Control group in developing writing skills of Students with Intellectual Disability through art and craft activities?

TABLE 2 & FIG.2 ANALYSIS BASED ON THE CALCULATED POST TEST MEAN SCORES IN WRITING SKILLS BETWEEN EXPERIMENTAL AND CONTROL GROUP

Group	N	Mean	SD	t	df	Sig
Exp group	5	3.20	1.10	1.890	8	0.047713
Con group	5	2.20	0.45			
Total	10	2.70	0.95			



DISCUSSION

From table (2) it is found that the post test mean scores and standard deviation of experimental group and control group in learning writing concepts is 3.20 and 2.20 respectively. The difference between the post test score of experimental and control group in writing concept is found to be 1.00 with standard deviation of 1.10 and 0.45 respectively. The t- test was conducted find out whether there is any significant difference between the post test mean score of experimental group in learning writing concept through art and craft activities. The result indicates t-value of 1.890 which is highly significant at (P=0.047713) which is lesser than (0.05) level of significance.

Interpretation

The result showed that teaching writing concept (colours Shapes) through art and craft activities is more effective than teaching through conventional method among children with intellectual disability. Hence, learning through art and craft activities has significant impact on the performance of the students belonging to experimental group.

FINDINGS

From the above analysis, it is observed that there is significant difference in the performance of students belonging to experimental group in reading and writing skills. An increase in post test mean scores of Control & Experimental group was also observed. However the increase in post test means score of experimental group is significantly higher than the control group. The result showed that teaching reading concepts through art and craft activities is more effective than teaching through conventional method among Students with Intellectual Disability.

Implication of the Study

1. Schools admitting Students with Intellectual Disability can be equipped with curriculum involving art and craft activities which will support the students to learn academic concepts.
2. Art and craft activities facilitates for the holistic development of students as it develops the motor as well as cognitive skills of the students.

RECOMMENDATIONS

1. Apart from providing treatment to the sample, training can be provided to the class teacher in performing and developing arts and craft activities to suit the academic activities according to the ability of the child.
2. A package of art and craft activities for various academic skills can be developed and standardized for implementing it to a large sample.
3. Similar studies can be done in future on the basis of the severity of condition of students with intellectual disability and associated conditions.
4. Studies can be replicated to a large sample in future, since the present study is confined only to ten students with Intellectual Disability.

CONCLUSION

The study shows the effect of teaching Students with Intellectual Disability through art and craft activities is more effective than the conventional method. The education system has changed using innovative teaching strategies to enhance the learning changing the style of teaching. Art and craft is a stimulating activity that gives positive attitude and enhances self esteem. Evidence needs to be gathered to say that activities enhance learning. Therefore to examine the effect of art and craft on learning, present study was conducted.

The experimental group received systemic training through art and craft activities Whereas no such training was provided to the control group. During the time intervention for experimental group, control group attended regular class room teaching. As indicated in the results both the group improved in learning pre- academic skills but improvement was noticed among the subjects experimental group. Hence, it is clear from the study that art and craft activities can be considered as important activity for imparting the development of reading and writing skills among the children with mild intellectual disability

REFERENCES

1. Grover, U. (2009). Curricular strategies DSE MR Manual, Pg. 37., Kanishka Publishers Distributors, New Delhi
2. Teaching Functional Academics (2007). DSE: M.R. Manual, Kanishka Publishers Distributors, New Delhi.

3. Bhawna, M. (2004). "Art, craft and physical Education" Pgs: 8- 9 Muhit Publications, Delhi.
4. Bala., J.M. & Rao, D.B. (2004). Methods of Teaching Exceptional Children. Discovery Publishing House, New Delhi.
5. Malone, T.W. & Lepper, M.R. (1987). Making Learning Fun: Taxonomy of Intrinsic Motivations for Learning. In R.E. Snow & M.J. Farr (Eds). Aptitude, Learning and Instruction. Volume 3: Cognitive and Affective process Analysis (pp. 223-253) Hillsdale, NJ: Erlbaum.
6. Mercum and Zones, M. (2001) Learning Attention and Play. N. S. Cool Beck (Ed).
7. Narayan J, et al., (2001). Educating Children with Learning Problems In Primary School, NIMH Publication, Secunderabad.
8. Reddy, S.H.K. & Narayan.J. (2008), Research in Mental Retardation in India, NIMH, Secunderabad.



DIETARY PRACTICES, MEAL PATTERN AND STUDY HABITS OF ADOLESCENT GIRLS

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ABSTRACT

This study aimed to describe dietary habits of young Indian adolescent girls attending higher secondary schools in Coimbatore city. A cross sectional study was carried out in 300 adolescent girls of age 15-16. Data were collected using researcher - designed questionnaire and checklist on dietary practices and study habits. The results of the study showed that vegetarians had better study habits than ova vegetarian and non vegetarian students and students who followed a meal pattern of 3 meals per day showed better study habits. The questionnaire was constructed based on various aspects of food intake like dietary pattern, food consumption pattern (frequency of intake of various foods) physical activity pattern and health related problems. Priority for nutrition, health, education and holistic development of the adolescent girls is imperative for her to develop into a healthy mother. However, the situation of adolescent girls in India needs to be studied in detail. Compared to Non vegetarians and ova vegetarians, the students who were vegetarians were found to possess good and consistent study habits. The study also demonstrated that students who practice a systematic meal pattern of 3 meals/day as recommended in many Indian scriptures had a consistent and better study habits than students with a meal pattern of 2 or 4 meals per day.

KEYWORDS: Dietary pattern, meal pattern, study habits, adolescents

INTRODUCTION

The life of human beings is considered to be a precious gift of nature. We all know it is education which helps to bring out the hidden power of human beings and enlighten them. It enhances the dignity of man. It helps to transform the human personality into a pattern of perfection through, a synthetic process of development of the body and upliftment of the mind. The education of Girl is given more emphasis in all developing countries.

The nation's development depends on the care of women, particularly from the adolescent period. Priority for nutrition, health, education and holistic development of the adolescent girls is imperative for her to develop into a healthy mother. However, the situation of adolescent girls in India needs to be studied in detail.

SIGNIFICANCE OF THE STUDY

Nutritional status of the population especially adolescents is a good yard stick of development of a nation and also it is one of the critical indicators of health of adolescents. Several studies have been reported from developed and developing countries which indicate the health status of its children. Though female adolescents constitute 12 percent of the total population of India, however data regarding the health and nutrition profile of adolescent girls are however scarce (Bachi, 2009).

RESEARCH QUESTIONS

1. What is the dietary practices, meal pattern and study habits of adolescent girls?
2. Do study habits of adolescent girls depend on dietary practices and their meal pattern?

METHODOLOGY

Settings

This survey was a cross-sectional study conducted on 300 higher secondary school girls of Coimbatore city which is one of the Indian cities with more education institutions.

Study design and sampling

The study was conducted using survey method and the investigator selected 300 adolescent girls of 11th standard from two Government, two Government aided and two Corporation schools in and around Coimbatore city through random sampling method.

Data collection tools

Questionnaire-based method was implemented for data collection by the investigator and the students of XI grade participated in the study. Two researcher designed tools –a questionnaire and a checklist were used to collect data related to Dietary habits and study habits respectively. An Anthropometric data sheet was also used. The questionnaire was constructed based on various aspects of food intake like dietary pattern, food consumption pattern (frequency of intake of various foods) physical activity pattern and health related problems. A total of 25 items were included in the questionnaire and after pilot study and establishing the validity and reliability the final tool consisted of 20 items with a reliability coefficient of 0.76.

A total number of 15 questions related to the Study habits of students like time of study, duration of study, daily routine of learning ,doing home assignments, classroom attention were included

in the draft checklist, which was reduced to 9 items after establishing validity and reliability. Reliability analysis yielded Cronbach's alpha value of 0.82.

DATA ANALYSIS

Data extracted from questionnaire and checklist was analyzed. Descriptive analysis and one way ANOVA was applied for comparison of mean scores of the above-mentioned groups, who completed the tools. All data were analyzed by SPSS 16.0 version.

RESULTS

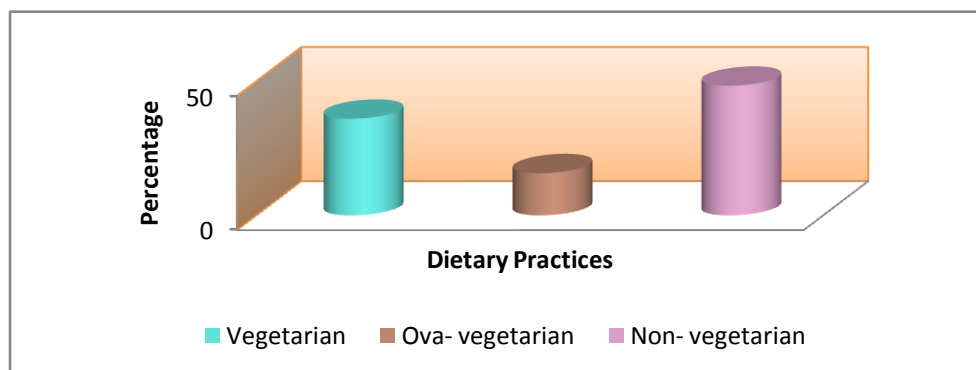
Total sample size comprised of 300 participants. The data collected from the sample was analysed using descriptive statistics and inferential statistics.

An attempt was made to classify the subjects into three categories as vegetarian, ova- vegetarian and non- vegetarian based on their dietary practices. The distribution is given in Table.1

TABLE 1. DISTRIBUTION OF STUDENTS IN TERMS OF DIETARY PATTERN

Dietary practices	Number	Percentage
Vegetarian	108	36.0
Ova- vegetarian	47	15.7
Non- vegetarian	145	48.3
Total	300	100.0

The result of Table 1. reveals that the majority of the selected sample (i.e.) 48.3 percent of the subjects were non- vegetarian followed by 36 percent who followed a vegetarian diet and only 15.7 percent of them followed ova- vegetarian practices.



Classification of subjects based on meal pattern

The following table shows the meal pattern of the sample selected.

TABLE 2 : MEAL PATTERN OF THE SELECTED SUBJECTS

Meal pattern	Number	Percentage
2 meals/ day	24	8.0
3 meals/ day	263	87.7
4 meals/ day	13	4.3
Total	300	100.0

Meal pattern refers to the number of meals consumed per day by an individual. Table 2. shows that 263 students had a regular meal pattern of 3 meals/ day. Only 24 students were following 2 meals/ day and only 13 students had 4 meals / day. From the percentage scores it is clear that 87.7 percent of the subjects followed a regular meal pattern of 3 meals/ day.

Classification of subjects based on study habit scores

Students were categorized based on the study habit scores obtained and it is presented in Table 3.

TABLE 3: CLASSIFICATION OF SUBJECTS BASED ON STUDY HABIT SCORES

Study habit scores	Number	Percentage
Low(1-3)	7	2.3
Medium(4-6)	81	27.0
High(7-9)	212	70.7
Total	300	100.0

The results of the Table 3, show that the selected sample scored better scores in study habits which implies that they follow a systematic study pattern. Only 2.3 percent of the students reported low scores, while 27 percent reported medium scores and 70.7 percent reported high scores in study habits.

Comparison of Study habits scores in terms of dietary practices

The difference between study habit scores and dietary practices (namely vegetarian, ova-vegetarian, non- vegetarian) were analyzed using one way ANOVA test and the results are presented in Table 4.

TABLE 4: STUDY HABIT SCORES AND DIETARY PRACTICES

Source of variation	Sum of squares	df	Mean square	F
Between groups	24.54	2	12.27	5.149**
Within groups	707.79	297	2.38	
Total	732.33	299		

** P< 0.01

The results of the ANOVA indicated that the calculated F- value is greater than the table value of 4.677 at 0.01 level of significance. Least Significant Difference (LSD) technique was used to find out which group showed better study habits and the results proved that vegetarians had better study habits than ova vegetarians and non vegetarian students.

Comparison of Study habits based on the meal pattern

The difference between study habit scores and meal pattern (namely 2 meal/day, 3meals/day, and 4meals/day) were analysed using one way ANOVA and the results are presented in the Table 5.

TABLE 5: STUDY HABIT SCORES AND MEAL PATTERN

Source of variation	Sum of squares	df	Mean square	F
Between groups	16.14	2	8.07	3.347*
Within groups	716.19	297	2.41	
Total	732.33	299		

* $p < 0.05$ level

From the above table, it is evident that the calculated F- ratio is greater than the table value of 3.026 at 0.05 level of significance. Hence it is concluded that there exists a significant difference in the study habits and number of meals consumed per day. Post- hoc test (Least Significant Difference) results proved that students who followed a meal pattern of 3 meals per day showed better study habits than the students who followed a irregular meal pattern (ie. 2 or 4 meals per day).

DISCUSSION

According to our findings, majority of the adolescent girls selected for the study were found to be non vegetarians and practices a meal pattern of 3meals/day. Compared to Non vegetarians and ova vegetarians, the students who were vegetarians were found to possess good and consistent study habits. The study also demonstrated that students who practice a systematic meal pattern of 3 meals/day as recommended in many Indian scriptures had a consistent and better study habits than students with a meal pattern of 2 or 4 meals per day.

CONCLUSION

This study indicates that adolescents with a dietary pattern of vegetarianism and a meal pattern of 3 meal/day were possessing better study habits.

REFERENCES

1. Bachi. (2009). Nutrition Scenario in India: Implications for clinical practice, *Journal of Indian Medical Association*. 98(9), 537.
2. Florence, M.D., Asbridge, M., & Veugeler, P.J. (2008). Diet quality and academic performance; *Journal of School Health*, 78 (4); 209-215.
3. NCHS-National centre For Health Statistics, (1997), Anthropometric Reference Data and Prevalence of overweight, *Vital and Health Statistics*, 1, 238.
4. Mohan, L.K., and Escott, S.S., & Krause, S. (2000). Food, Nutrition and Diet Therapy. London: W.B.Saunders, Co.



ASSESSING THE MULTIPLE INTELLIGENCE OF HIGHER SECONDARY STUDENTS

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ABSTRACT

The present study was conducted with the aim of assessing the multiple intelligence of higher secondary students with respect to gender. The investigator randomly selected forty XI standard students of a higher secondary school of Palakkad District of Kerala. Multiple Intelligence Scale was developed by the investigator. The data was analyzed using mean, standard deviation and 't'- test. The major findings of the study reveal that there is significant difference between boys and girls with respect to multiple intelligence and its dimensions. Everyone should discover their innate potential and enrich their skills. Teachers need to concede full freedom to students to use their strengths and also develop other intelligences. The theory of multiple intelligences was proposed by Howard Gardner at Harvard University in 1983 to analyze and describe the concept of intelligence in a more comprehensive way. Thus the verbal linguistic and Logical mathematical intelligence mean score were higher. The proportion of Musical intelligence and the bodily kinesthetic intelligence were lesser.

KEYWORDS: *Multiple Intelligence, Bodily kinesthetic Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence, Musical Intelligence, Naturalistic Intelligence and Existential Intelligence*

INTRODUCTION

Howard Gardner defined intelligence as “To solve problems or to create products that are valued within one or more cultural settings”. The theory of multiple intelligences was proposed by Howard Gardner at Harvard University in 1983 to analyze and describe the concept of intelligence in a more comprehensive way. Gardner suggested that each individual possess nine such relatively independent mental abilities or intelligences that grow and develop differently in different people, depending upon their hereditary characteristics or environmental experiences.

1. **Verbal-Linguistic Intelligence (word smart):** It is the ability to use words and language. They read, write and communicate with words having components like syntax, semantics and pragmatics.
2. **Logical-Mathematical Intelligence (number/reasoning smart):** It is the ability to use reason, logic and numbers in a systematic manner.
3. **Visual - Spatial Intelligence (picture smart):** It is ability to perceive the visual. The skills involve the characterisation and manipulation of spatial configuration and relationship.
4. **Bodily-Kinesthetic Intelligence (Body smart):** It is the ability to control body movements and handle objects skilfully.
5. **Interpersonal Intelligence (People smart):** It is the ability to understand others interact with them and establish a cordial relation.
6. **Intrapersonal Intelligence (self smart):** It is the ability to be aware of one's own feelings and beliefs and desires. They rely on self- reflection and self discovery.
7. **Musical Intelligence (Music smart):** It is the ability to produce and appreciate music.
8. **Naturalistic Intelligence (Nature smart):** They notice and are interested in things in the natural world. They are particularly good at being aware of patterns and classification and they demonstrate an active interest in flora, fauna and natural phenomena.
9. **Existential Intelligence:** The ability to be. The ability to appreciate truth, goodness and beauty, conceptualise the philosophy of life.

NEED OF THE STUDY

Students multiple intelligence play significant role in role in determining the academic achievement of student. Students are expected to be multiple intelligent to be a dynamic associate in the society. In this circumstance the investigator focuses the study on multiple intelligence of higher secondary school students.

STATEMENT OF THE PROBLEM

The present study was conducted on 11th standard students on Multiple Intelligences with respect to gender. The research problem was worded as follows assessing the Multiple Intelligence of Higher Secondary Students.

OBJECTIVES OF THE STUDY

The objectives for presented study were as followed:

1. To study the Multiple Intelligences of the Higher Secondary Students.
2. To find out the difference of boys and girls with respect to multiple intelligence and its dimensions.

HYPOTHESIS OF THE STUDY

The following null hypotheses were formulated for the study

- There is no significant difference between boys and girls with reference to multiple intelligence.
- There is no significant difference in the mean scores of boys and girls with reference to nine dimensions of multiple intelligences.

METHODOLOGY

Methods Used for the study

In the present study descriptive survey method was used.

Sample:

A sample of 20 boys and 20 girls of XI standard higher secondary school students of Palakkad district were selected on random basis for the study.

Tools

The investigator prepared a 5 point Likert type Multiple Intelligence Scale (Strongly Disagree - 1, Disagree -2, Undecided -3 , Agree -4, Strongly agree -5). It consisted of 20 statements; each statement refers to some kind of intelligence discovery and respondent necessary to respond all items. It is used to assess the multiple intelligence level considering the nine different kinds of intelligences. The total score was considered for the assessment of multiple intelligence.

Data Collection

The data was collected from the higher secondary school students by administering the Multiple Intelligence Scale. Mean, Standard Deviation and t test were calculated to analyse the data.

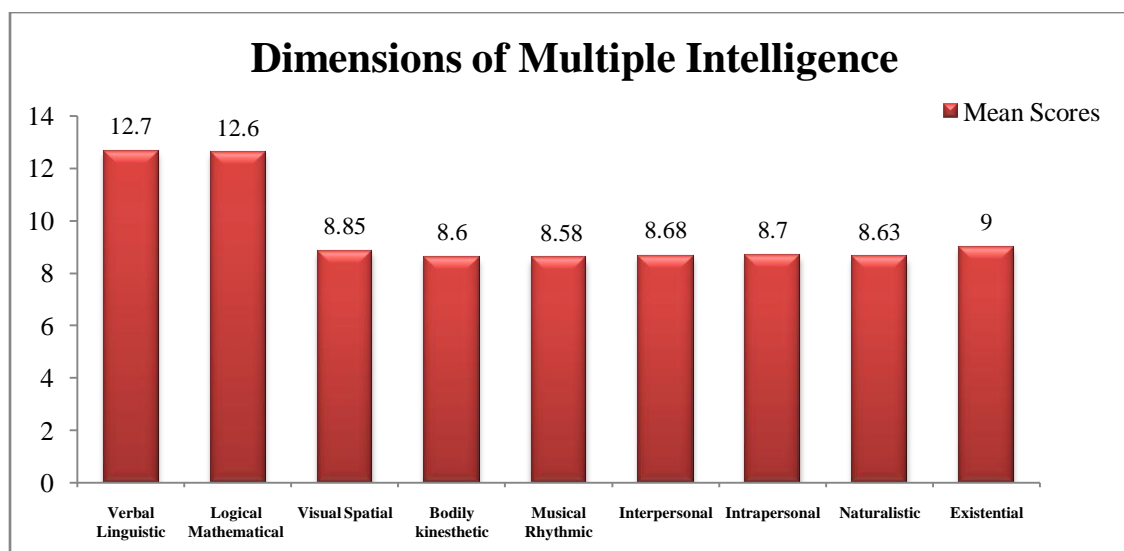
Analysis of Data

In order to find the multiple intelligence of higher secondary school students, descriptive analysis was done for the total sample. The basic statistics of Multiple Intelligence for the total sample is given in Table 1.

**TABLE 1: DESCRIPTIVE STATISTICS OF MULTIPLE INTELLIGENCE
FOR THE TOTAL SAMPLE**

Mean	Median	Mode	Standard Deviation	Kurtosis	Skewness
86.28	86.5	85	6.85	- 0.495	-0.219

Table 2 reveals that higher secondary students possess a varying degree of multiple intelligence. In order to study the Multiple Intelligences of the 11th standard students the mean scores were analysed based on 9 different types of intelligence.



The highest mean score among the nine Multiple Intelligences was for the Verbal Linguistic Intelligence with 12.7. Then other Intelligence had mean scores in descending order respectively 12.6 for Logical mathematical intelligence, 9 for existential, 8.85 for visual spatial, 8.7 for intrapersonal intelligence, 8.68 for interpersonal intelligence, 8.63 for naturalistic Intelligence, 8.6 for Linguistic intelligence, and the lowest 8.58 for the Musical Intelligence.

Thus the verbal linguistic and Logical mathematical intelligence mean score were higher. The proportion of Musical intelligence and the bodily kinesthetic intelligence were lesser.

Analysis of the Data:

The significance difference between the mean scores of the boys and girls was examined for each of the nine dimensions of multiple intelligence and for the composite score of multiple intelligence itself. The analysis of the results is given in table 2 and table 3.

TABLE 2: SIGNIFICANCE OF DIFFERENCE BETWEEN MULTIPLE INTELLIGENCE OF BOYS AND GIRLS

Variable	Boys (N=20)		Girls (N=20)		t value
	Mean	SD	Mean	SD	
Multiple intelligence	80.95	20.99	91.6	15.73	7.86 **

** Significant at 0.01 level

Table 2 reveals that the calculated 't' value is greater than the table value at 0.01 level. Hence, the null hypothesis is rejected, which means that boys and girls differ so far as their multiple intelligence is concerned.

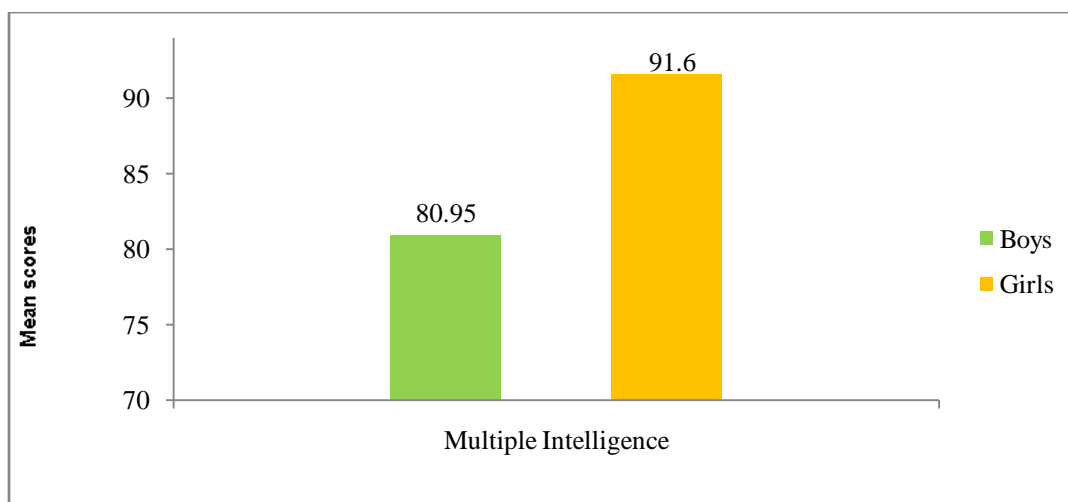


Fig. 1: Comparison of multiple intelligence mean scores with respect to Gender

The analysis of mean score also shows the close proximity that the boys and girls differ significantly with respect to their multiple intelligence. The dimension wise analysis has also been done and the results are presented in the following table 3.

TABLE 3: MULTIPLE INTELLIGENCE WITH RESPECT TO DIMENSIONS

Variables	Boys		Girls		t value
	Mean	SD	Mean	SD	
Verbal Linguistic	11.6	1.93	13.7	1.49	3.85**
Logical Mathematical	11.6	2.48	13.6	1.85	2.89**
Visual Spatial	8.5	0.76	9.2	1.06	2.4*
Bodily kinesthetic	8.1	1.07	9.1	0.55	3.71**
Musical Rhythmic	8.05	1.05	9.1	0.91	3.37**
Interpersonal	8.15	1.73	9.2	0.89	2.41*
Intrapersonal	8.3	1.22	9.1	0.91	2.35*
Naturalistic	8.15	1.35	9.1	1.02	2.51*
Existential	8.5	1.24	9.5	0.76	3.08**

*Significant at 0.05 level ** Significant at 0.01 level

It is inferred from the table 3, that the calculated t values for all the dimensions are found to be significant. The variables visual spatial, Interpersonal, intrapersonal and naturalistic intelligence are found to be significant at 0.05 level. Whereas, the variables Verbal Linguistic, Logical Mathematical, Bodily kinesthetic, Musical Rhythmic and Existential intelligence are found to be significant at 0.01 level. Therefore, the findings reveal that boys and girls differ from each other on the nine types of multiple intelligences.

This finding is substantiated by the research studies also conducted by Anitha et al. (2013) that girls have more multiple intelligence levels than boys where as it is contrary to the findings of

Geeta and Gupta (2017) that there was no real difference found between boys and girls students in these multiple intelligences.

MAJOR FINDINGS

The following were the major findings of the study:

1. It was found that the status of multiple intelligences in higher secondary school students was ranked in the following order: Verbal Linguistic Intelligence > Logical mathematical intelligence > existential > visual spatial > intrapersonal intelligence > interpersonal intelligence > for naturalistic Intelligence > Linguistic intelligence > Musical Intelligence.
2. Boys and girls differ from each other on the nine types of multiple intelligences.
3. Girls have more multiple intelligence levels than the boys. This may be due to the fact that nowadays girls share equal opportunities with boys being sensible and determined.

CONCLUSION

Intelligence is the associated with the possession of different abilities. Multiple Intelligence helps in meaningful self-reflection regarding one's potentials. Everyone should discover their innate potential and enrich their skills. Teachers need to concede full freedom to students to use their strengths and also develop other intelligences. Use of different instructional media in teaching will be beneficial in enhancing multiple intelligence. Teachers should identify and mould the child accordingly depending on the kind of intelligence one possess and there by bringing a holistic dynamism in students.

REFERENCES

1. Agarwal, S., & Suraksha. (2017). A Comparative Study of Multiple Intelligence Among Male and Female Students of Class XI. *International Journal of Advanced Research in Education & Technology* , 4 (1), 82-85.
 2. Anitha, T. S., Vannessa, J., & Sreelakshmi, G. (2013). A study on the multiple intelligence levels of Secondary school students of Government and Private schools in Secunderabad. *IOSR Journal of Research & Method in Education* , 3 (4), 12-18.
 3. Gardner, H. (1983). *Frames of mind: The theory of Multiple Intelligences*. New York: Basic Books.
 4. Gardner, H. (1999). *Intelligence reframed: Multiple Intelligences for the 21st Century*. New York: Basic Books.
 5. Geeta, N., & Gupta, S. M. (2017). A Study of Multiple Intelligences of Secondary School Students of Jodhpur City of Rajasthan State. *International Journal of Research in all Subjects in Multi Languages*, 5 (8), 21-30.
 6. Joshi, J. (2016). A Study of Multiple Intelligences of Students in Context to Gender. *The International Journal of Indian Psychology* , 3 (3), 47-53.
- Pachaiyappan, P., & Raj, D. U. (2014). Assessing the Multiple Intelligence of Secondary and Higher Secondary School. *International Journal of Educational Research and Technology* , 5 (1), 61-67.

Shaikh, N., Khan, S. M., & Wakpainjan, P. (2016). A Comparative Study of Multiple Intelligences of Students with Respect to Grades. *The International Journal of Indian Psychology* , 4 (1), 95-107.

Vidhyanathan, S. (2017). A Study on Multiple Intelligences of Students with Hearing Impairment. *The International Journal of Indian Psychology* (2), 146- 156.



TECHNOLOGICAL USAGE IN RELATION TO ACADEMIC ACHIEVEMENT OF THE HIGHER SECONDARY STUDENTS IN COIMBATORE

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ABSTRACT

This 21st century is otherwise known as digital age. The learners of this age are known as digital natives, who are experts in digital Medias, electronic gadgets, and technological devices. In this internet, age knowledge explosion is very high compared with past eras. Learners of this age use various digital medias via, computer, laptop, tablets, mobile phones, digital cameras, digital microscope etc. they are not only familiar with the devices but digital technologies such as e-books, e-lessons, e-libraries, virtual labs, virtual museums etc. for most of the educational purposes the learners of this 21st century use digital technology. The digital learner can interact and share across the globe with the peer group and experts. Global knowledge of the digital learner on the particular subject influences the academic performance of the digital learner. Hence the study 'Technological usage and academic achievement of the higher secondary students in Coimbatore'. Survey method is used in this study, data were collected from 300 sample by using Random sampling with the tool 'Digital Usage Rating Scale', Test of significance was used to analyze the data.

KEYWORDS: Digital Usage, Technological Usage, Academic Achievement.

INTRODUCTION

The evolution of technology has dramatically changed society. An endless number of people all over the world use modern technology. Of the most profound changes in the past decade has been the widespread proliferation of information and communications technologies (UNICEF, 2011).

Even in this modern technological era, there is a need for family and relationship. Studies say that those who have less connectivity in the family has more connectivity with the technological gadgets. Psychologists say that those who crave for a relationship has more gadgets. Especially at the teenage, they have more curiosity towards the new relationship. They will seek what they lack in their family

The growth of technology has changed the world, which in turn has changed the daily lives of Adolescents. Dehmler (2009) asserts that children today are growing up in an interconnected, networked world. The youth have unprecedented access to modern technologies and use them in expected and unexpected ways. Teens all over the world are growing up in a world in which the Internet, cell phones, text messaging, television and video games, and other technologies dominate their communication and are an integral part of everyday life. Children are immersed in a world abounding with information (Livazovic, 2011).

While technology is often described as the most important influence upon society, it remains a subject which has undergone little study. Recognizing that technology lies at the very heart of society, this study wishes to investigate its impact on adolescents. Technological advancement is one of the essential factors for teenagers in many societies. Due to the enormous development of technologies, this era can also be called the Age of Technology. With the purpose of serving in the social, educational, and employment world, technology is becoming the essential tool. Social network sites, online games, video-sharing sites and gadgets, such as iPods and mobile phones are now fixtures of youth culture (UNICEF, 2011). They have so permeated youth lives that it is hard to believe that less than a decade ago, these technologies barely existed. Modern technologies have altered how youth socialize and learn and that raises a new set of issues that educators, parents, and policymakers should consider. Technology is an integral part of most adolescents' lives, hence it is important to understand the impact it has on academic achievement.

PURPOSE OF THE STUDY

The investigator has sought to examine the Technological Practices in relation to Gender and Academic Achievement of higher secondary school students in Coimbatore..

NEED FOR THE STUDY

The need for the study is to know the Technological practices of higher secondary students in Coimbatore. Today, there is a common focus on raising student relationship with the family members while integrating technology as a tool. Policymakers and educators are renewing their commitment to programs and instructional practices that to enhance maximum effects on instruction and student outcomes. Due to the large use of technology in the world in which we live, the use of technology in teaching and learning is essential if we are to make a lasting impact on how students learn.

Technology is a factor improving learning is the fact that technology is becoming such an integral part of our everyday world. Most jobs today require some type of technology use. Also,

students and adults are using technology on a daily basis to communicate, get information in multiple ways. The prevalent daily use of technology in people's lives overall makes the use of technology very relevant to the students and provides a connection that will greatly benefit student learning. Hence the investigator selects the study on the Technological usage of higher secondary students for study.

SIGNIFICANCE OF THE STUDY

Technology becomes inevitable in this internet generation. This generation learners are more comfortable with the digital gadgets than the traditional method of teaching, learning, and evaluation. The digital devices enhance multisensory approach, which meets the need of the learners with different learning styles. This digital technology enables them to study anywhere, anytime for N number of times. The proper usage of the digital technology facilitates the learners' academic achievement. It paves way for the learners to refer many resources across the globe. Digital technology otherwise known as touch technology is the trend of this generation and grows more in the future generation. Sooner are later the learner will carry only one touch tablet instead of load of books, access the teacher at any time virtually without going to the school, choose his own timetable instead of following the school timetable, learn at their own pace instead of the school schedule, do more than one course in various institutions instead of doing one course in one institution. All these things are possible with the proper usage of digital technology.

OBJECTIVES OF THE STUDY

The main objective of the study is to find out the Technological usage and academic achievement of the higher secondary students in Coimbatore.

HYPOTHESES

The following hypothesis is formulated to be tested statistically at:

1. There is no significant relationship between academic achievement and their technological usage.
2. There is no significant relationship between gender and their technological usage.

Methodology in brief

Method	:	Survey method
Sampling Technique	:	Random sampling
Tool	:	Digital Usage Rating Scale
Sample size of the study	:	300
Statistical Treatment	:	Test of significance

Scope of the study

The present study investigates the technological usage of higher secondary Students in Coimbatore. The investigator decided to take up higher secondary school students as the sample for the study to give in the clear picture regarding the gender, academic achievement and technological usage. This type of research study will help the teacher to choose the suitable digital gadgets to make the teaching-learning experience more fun and effective.

Delimitation

No research investigations can be done without limitations. Limitations are the different type. This investigation has the following limitations in this present study.

The number of students studying in the higher secondary schools in Coimbatore is very large therefore the researcher has planned to select 300 students only in XI standard from 5 schools.

Within the limited time available, it is not possible to conduct the study in a larger area. Hence the investigator has restricted the field of a research study in Coimbatore.

METHODOLOGY

Method Adopted in the Study: Since the study requires a large number of data to find the solution for the problem, the investigator has adopted the survey method which was found suitable to collect and interpret the data.

Variables

Dependent variable: Digital Usage

Independent Variable: Gender and Academic Achievement

Tool Used for the Study

The investigator used the tool Digital Usage Rating Scale- the questionnaire which was constructed and standardized by the researcher.

Sample of the study

The sampling technique used in the study is the random sample. In the present study, the investigator in order to get a due representation of the sample used a random sampling method to identify higher secondary students in Coimbatore district.

The schools were selected for the study comprises of Boys schools, Girls Schools and Co-education Schools. There were 300 students taken for the study and the investigator due to various reasons decided to have XI standard students alone for the sample for the study.

Statistical techniques used in this study

Differential analysis

Differential analysis helps in the inference and prediction of results. Generalizations are done by using differences in means, standard deviations, and standard errors. Among the various techniques, t-test is used for the present study.

Gender

TABLE 1: TECHNOLOGICAL USAGE WITH RESPECT TO GENDER.

S.No	Gender	No of sample	Mean	Standard Deviation	t-value
1.	Boys	150	46.00	17.90	-2.52 NS
2.	Girls	150	40.83	17.86	

NS- Not Significant

From the above table, it is cleared that the calculated t-value (-2.52) is less than the table value (1.97) at 0.05 level. Hence the null hypothesis "There is no significant difference between boys and girls in their Digital Usage" is accepted.

Therefore, there is no significant difference in Digital Usage between boys and girls. This result shows that the Digital Usage is not affected by gender. The Mean value of Boys is greater than the Girls. This shows that Boyshave higher Digital Usage than the Girls.

Technological Usage With respect to Academic Achievement

TABLE 2: DIGITAL USAGE WITH RESPECT TO ACADEMIC ACHIEVEMENT

S.No.	Academic Achievement	No. of Sample	Mean	Standard Deviation	t-value
1	below 800	158	44.55	18.53	1.135 NS
2	800 and above	142	42.17	17.44	

NS- Not Significant

From the above table, it is cleared that the calculated t –value (1.135) is less than the table value (1.96) at 0.05 levels. Hence the null hypothesis, "There is no significant difference between Academic Achievement and their Digital Usage" is accepted.

Therefore there is no significant difference between Academic Achievement and Digital Usage. The Mean value of the students who secured below 800 is found higher than the students secured 800 and above.

Summary and Conclusion

The present study was conducted to find out the technological usage of higher secondary students. "Digital Usage Rating Scale" was used for this study. Besides the major findings, the investigator offers suggestions and recommendations for further research based on the present experiences. A sample of 300 students studying in high school was drawn from three types of schools in Coimbatore was selected for the study.

Major Finding of the Study

Academic Achievement, gender and their technological usage is not significant. The Mean value of the students who secured below 800 is found higher than the students secured 800 and above.

Recommendations

Research is a vital comprehensive area. The purpose of any research is to finds solution scientifically for the problems related to education, society etc., however, investigation of one problem always provide many research questions that can be investigated by other researchers. In this study, it is found that invariably of gender, students are using digital gadgets schools can use the same gadgets to provide effective education. Schools can encourage digital usage in a positive way such as developing school apps, subject apps to make the education more attractive.

Suggestions for further research

Research is a chain activity the purpose of any research in education is to find the solution for an existing problem related to education, to improve and innovates new pedagogy to enrich

teaching-learning process and to fulfil the future need for education. However, the investigation on one problem always leaves many related research questions that can be investigated by the other person. Some of the areas for researchers for future are as follows.

- This study was confined to only higher secondary students in Coimbatore district.
- This study may be conducted by taking larger area at regional or state level in future.
- A similar study may be done with primary and secondary school students and college students.
- A similar study may be done with other variables like Family status and Socio-Economic status.
- Researchers can carry out to correlate between the digital usage and emotional intelligence of students.
- Researchers can carry out to correlate between the digital usage and problem-solving ability of students.

CONCLUSION

The study aims to investigate the technological usage, gender and academic achievement of the higher secondary students in Coimbatore. In this present study, the investigator finds out no significant differences between technological usage with respect to Academic Achievement and gender.

REFERENCE

- <http://www.ijern.com/journal/September-2013/23.pdf>
- <http://www.ijsac.net/sites/default/files/2017-04/2.1.02.pdf>
- <http://technologyandteenagers.blogspot.com/>



A STUDY ON THE ATTITUDE OF TRIBAL TOWARDS WOMEN'S HIGHER EDUCATION

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ABSTRACT

In the present world no doubt, women play a vital role in contributing to the country's development. They are the shining beacons of hope and have displayed exemplary dedication in their respective fields. But still there are unidentified people in the tribal area who have to be more educated as higher education is the main determinant of their development. For this, it should be investigated whether they have the attitude towards women getting higher education. Hence this study was undertaken with a sample of 150 from 3 tribal groups namely Badugas, Todas and Kotas each having 50, living in Nilgiris by adopting Random sampling method. A tool used was an Attitude scale designed by K.Rani (2013) consisting of 40 items. The result of the study showed that all the tribal people have proper attitude towards women's higher education in terms of the variable namely monthly income and the married people obtained more attitude scores than the unmarried people. In view of the great zeal shown by girls for higher education and as the time passed, the old conservative traditions were relaxed and the girls were encouraged to get education which they desire. So it would be no exaggeration to say that education has received far greater attention in the post-independence period than it did at any time in the past. Hence the hypothesis stated "there is no significant difference between the married and unmarried tribal people with regard to their attitude towards women's higher Education" is accepted in the case of Badugas and Thodas and rejected in the case of Kota tribe .

KEYWORDS: Attitude, Tribals, Badugas, Todas and Kotas, Marital status and Monthly income

INTRODUCTION

Education plays an important role in the development of human resources. It is regarded as the main instrument in the transmission of values. In India the concept of education is and always has been different from the western concept of education. Such difference is due to the differences in social values, prevailing norms of the society and the concept of personality. For progress and prosperity of any country, women's contribution is very important. It is the women who are capable of building such children who may lead the country to the path of progress and prosperity. Investing in girls' education is one of the most effective ways to take the country in the path of progress.

University Education Commission (1948) and Education Commission (1964-66) set up by the Government of free India laid special emphasis on the education of women. The Constitution of India also confers on women, equal rights and opportunities in all political, social, economic and legal fields. Specifically Articles 29 and 30 establish equality of opportunity in educational institution and provides special care to the promotion of education and economic interests of the scheduled caste, scheduled tribes and the weaker sections of society. This is the direction in which the Government has been constitutionally made responsible for women's education. In view of the great zeal shown by girls for higher education and as the time passed, the old conservative traditions were relaxed and the girls were encouraged to get education which they desire. So it would be no exaggeration to say that education has received far greater attention in the post-independence period than it did at any time in the past.

Though the Government introduces many programmes, the people at large should have the proper attitude towards women's education especially at higher level because though we talk about women empowerment through education, male domination still prevails in our society and the social norms and practices do not allow the girls after minimum level of education. This is most prevalent among the tribal who live in hilly area or do not even have access to area where facilities are available. So this effort has been initiated to find out the attitude of the tribal especially towards women's higher education with the following main objective.

MAIN OBJECTIVE:

- To find out the attitude of the tribal namely Badugas, Todas and Kotas towards Higher Education for Women in relation to the variables namely monthly income and marital status

HYPOTHESIS:

- There is no significant difference in the attitude of tribal people towards higher education for women with regard to their monthly income
- There is no significant difference in the attitude of tribal people towards higher education for women with regard to their marital status

METHODOLOGY:

- **Sample :** A sample of 150 living in Nilgris from 3 tribal groups namely Badugas, Todas and Kotas was selected each numbering 50 by adopting Random sampling method

- **Tool used for the study:**

In addition to personal data sheet to collect personal information, a standardized attitude scale developed by K.Rani (2015) consisting of 40 items with reliability and validity being established was used as the research tool.

- **Analysis And Interpretation:**

Differential analysis was done from the data obtained which is explained in the following tables

TABLE 1. COMPARISON OF ATTITUDE SCORE OF THE TRIBAL IN TERMS OF MONTHLY INCOME

Tribe	Income in Rupees	Number	Mean	't'-value	Level of significance
Baduga	Above 5000	17	42.52	0.353	Not significant
	Below 5000	33	43.42		
Toda	Above 5000	13	50.30	1.792	Not significant
	Below 5000	37	44.43		
Kota	Above 5000	10	44.40	0.147	Not significant
	Below 5000	40	43.80		

It is evident from the above table that in all the three types of tribal people namely Badugas, Todas and Kotas, there is no significant difference between the people who have a monthly income of above rupees 5000/- and those who get below rupees 5000/- in their attitude towards Women's Higher Education. Hence the hypothesis stated as "There is no significant difference in the attitude of tribal people towards higher education for women with regard to their monthly income" is accepted.

TABLE 2. COMPARISON OF ATTITUDE SCORE OF THE TRIBALS IN TERMS OF MARITAL STATUS

Tribe	Marital status	Number	Mean	't'-value	Level of significance
Baduga	Married	35	43.37	0.319	Not significant
	Unmarried	15	42.53		
Toda	Married	33	46.72	0.724	Not significant
	Unmarried	17	44.47		
Kota	Married	29	47.41	2.696**	Highly significant
	Unmarried	21	39.09		

The above table indicates that in the case of Badugas, there is no significant difference between the married and unmarried people in their attitude towards higher education for women

The same is the result in the case of Todas also.

But in the case of Kota tribe, since the obtained 't' value 2.696 is highly significant at 0.01 level, it may be concluded that there is significant difference between the married and unmarried people concerning their attitude towards women's higher Education. Hence the hypothesis stated "there is no significant difference between the married and unmarried tribal people with regard to

their attitude towards women's higher Education" is accepted in the case of Badugas and Thodas and rejected in the case of Kota tribe .

FINDINGS:

- It was inferred from the analysis that in all the three types of tribal people, there is no significant difference between the people who have a monthly income of above rupees 5000/- and those who get below rupees 5000/- concerning their attitude towards women's higher education. This shows that all the three types of people have proper attitude towards higher education for women irrespective of their monthly income.
- The mean value (43.37) of Baduga indicates that the people who have an income of below rupees 5000/- have more attitude than their counterpart whose mean value is 42.52. In the case of Todas and Kotas , people having the income above rupees 5000/-have better attitude than their counterpart
- The differential analysis showed that in the case of Badugas and Todas, there is no significant difference in the attitude of people towards higher education for women between the married people and unmarried people.
- In the case of Kota tribe, there is significant difference between the married and unmarried people concerning their attitude towards women's higher education.
- Among all the three types of tribal people namely Baduga, Toda and Kota, the married people have more attitude than the unmarried people .

CONCLUSION:

In recent years, there has been increasing recognition on the need to integrate women in the main stream of development. All attempts to strengthen women's participation in the national development have emphasized the role of education in imparting skills. The present study may create awareness among the people especially those who need to be motivated to come out from their shell for which their attitude must be developed and programmes towards developing their attitude must also be planned to make women education grow higher and to open up new vistas of success for them in all their future endeavour.

REFERENCES

1. Rani (2011) "An Analysis of Tribal Women's Education in India".
2. Thematic Debate: " Higher Education and Women: Issues and Perspectives "Paris, August 1998, *Drafted by: UNESCO Secretariat*, ED-98/CONF.202/CLD.14
3. [http://www.icharity.in/causes/women-powerment.html?gclid= AIaIQobChMIpaLmo - KM1QIVi4mPCh0qmAhtEAAYBCAAEgL0jfd_BwE-](http://www.icharity.in/causes/women-powerment.html?gclid=AIaIQobChMIpaLmo-KM1QIVi4mPCh0qmAhtEAAYBCAAEgL0jfd_BwE-) Retrieved July 12, 2017.

WEBSITES

ACADEMIKE Articles on legal issues Retrieved on January16, 2018
<https://www.lawctopus.com/academike/>



A STUDY ON THE PARENTAL INFLUENCE OF COGNITIVE REASONING ABILITY IN RELATION TO ACADEMIC ACHIEVEMENT OF EIGHTH STANDARD SCHOOL PUPILS

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ABSTRACT

The present study targets upon the study on the Parental Influence of Eighth standard level pupils in extend towards their Cognitive Ability. 600 students from Coimbatore district participated in this study. The data were collected on the basis of 'Cognitive Ability Test Battery'. The results showed that the father's educational qualification had influence in Non-Verbal Reasoning Ability while the mother's educational qualification influenced both Quantitative and Non-Verbal Reasoning Ability. It was also found that the father's occupation did not influence Cognitive Ability of the pupils but the mother's occupation influenced Verbal and Quantitative Reasoning Abilities the pupils. The father's occupation did not have any positive influence on the Cognitive Ability of the pupils while the mother's occupation had a positive influence on the verbal and Quantitative reasoning ability. In order to enhance academic achievement of the students, parents should also co-operate in the development and welfare of their children so as to facilitate their Cognitive reasoning Ability. The test is useful for assessing the development of students who have trouble with reading, limited capability in Language (Tamil and English) or who have limited opportunities. These general reasoning abilities, which start developing at birth and continue through early adulthood, are influenced by experiences gained both in and out of school.

KEYWORDS: Verbal Reasoning Ability, Quantitative Reasoning Ability Non-Verbal Reasoning Ability, Eighth Standard Pupils

INTRODUCTION

The notion of parental influence on Cognitive Ability and academic achievement has great intuitive appeal and has been popularised in educational practise. A pupil's chance of positive Cognitive Ability outcomes depends on the education and Occupation of the parents. It is presumed that if parents are educated, the probability rises that their children will also be educated. It is assumed that it is easier for educated parents to help and stimulate their children. Cognitive Ability difficulties are very common in pupils from impoverished backgrounds, putting them at risk of educational failure.

NEED FOR THE STUDY

The Cognitive Abilities Test is made up of three sections, called batteries: the Verbal Battery, the Battery, and the Nonverbal Battery. These batteries were administered separately. They are designed to assess specific reasoning skills in each area that correlate strongly to academic success. More specifically, Cognitive Abilities Test measures cognitive development, the ability to learn new tasks, and problem solving abilities. Cognitive Ability measurement of three different content domains ensures that educators Cognitive Ability receive a balanced view of the child

Verbal reasoning, quantitative reasoning and Non-Verbal Reasoning Ability, together are related to academic ability. Verbal skills identify how an individual learn best. Tests of verbal ability skills identify how it is most efficient to understand new information and recall previously learned information.

Verbal test was designed to assess the student's vocabulary, efficiency and verbal memory, ability to determine word relationships, and the ability to comprehend ideas. Quantitative test was designed to assess students' quantitative reasoning and problem solving abilities. This section also evaluates the students' level of abstract reasoning. Non-verbal test was used to assess a student's reasoning abilities through the use of spatial and figural content. The test is useful for assessing the development of students who have trouble with reading, limited capability in Language (Tamil and English) or who have limited opportunities. These general reasoning abilities, which start developing at birth and continue through early adulthood, are influenced by experiences gained both in and out of school.

By realizing the need and importance of Parental influence on the Cognitive Ability test of the students the investigator selected the research problem. Hence, the study entitled "A Study on the Parental Influence of Cognitive Reasoning Ability in relation to Academic Achievement of Eighth Standard School Pupils" was done by the investigator with the following objectives.

1. To find out if there is any significant difference in Cognitive Ability Scores in relation to Parent's Educational Qualification of eighth standard pupils.
2. To examine if there is any significant difference in the Cognitive Ability Scores in relation to Parent's Occupation of eighth standard pupils.

METHODOLOGY

Six Hundred of eighth standard school students from three Governments, three Government Aided and Three Self- financing (private) schools in and around Coimbatore district participated in this study. The samples were selected by stratified random sampling method.

Tool

The investigator collected the Cognitive Ability data. To validate, the scale was reviewed by four experts in the field of education. This final scale comprised of 55, 60 and 55 items for the verbal, Quantitative and Non-Verbal batteries. The verbal ability battery is associated with 55 items comprising Verbal Analogies (18), Sentence Completion (19) and Verbal Classification (18). The quantitative ability battery is comprised of 60 items comprising of Quantitative Relationships (20), Number Series (20) and Number Puzzles (20). The Non-Verbal battery consisted of 55 items comprising of Figure Classification (19), Figure Analogies (18) and Paper Folding (18). The correct items were scored as 1 and the wrong ones as 0. The raw score was compared to the universal Standard Score and Converted to Standard Age Score known as SAS. The overall SAS score yields the students Cognitive Ability Score.

The research instrument was administered to the pupils. The data were collected personally by the investigator. The purpose of the research and instructions were made clear to the students.

Research Findings

The resulting data were analysed using Analysis of Variance (ANOVA). The results have been explained under the below mentioned headings.

Percentage Analysis

An attempt was made to analyse and classify the percentage of students based on Cognitive Ability Test Battery. The results obtained are given in Table 1

TABLE 1
CLASSIFICATION OF COGNITIVE ABILITY TEST SCORES OF EIGHTH
STANDARD PUPILS

Batteries	Level	Number (N=600)	Percent %
Verbal SAS Score	Above average (112-127)	1	0.2
	Average (89-111)	255	42.5
	Below average (73-88)	312	52.0
	Very low (50-72)	32	5.3
Quantitative SAS score	Very high (128-150)	8	1.3
	Above average (112-127)	38	6.3
	Average (89-111)	267	44.5
	Below average (73-88)	234	39.0
	Very low (50-72)	53	8.8
Non-Verbal SAS Score	Above average (112-127)	14	2.3
	Average (89-111)	441	73.5
	Below average (73-88)	139	23.2
	Very low (50-72)	6	1.0

After analysing data descriptively, an attempt was made to group the sample into different levels based on their performance in the Cognitive Ability Test Battery. The sample was divided into four groups based on the standard age score. The four groups were students with above average, average and below average and very low level of cognitive ability. The table above shows that 52 % of the students are below average, 42.5 % of the students are average, and 5.3% of the students possess very low verbal ability. Only 0.2 % of the students possess above average in verbal ability. It is found that 1.3 % of the students possess very high numerical ability. 6.3% possess above average 44.5 % of the students are average, 39% of the students are below average and 8.8 % of the Students possess very low ability in numerical reasoning. The table above also reveals that 2.3% of the students are above average, 73.5 % of the students possess average level 23.2 % of the students are below average and 1.0% of the students possess very low non-verbal reasoning ability.

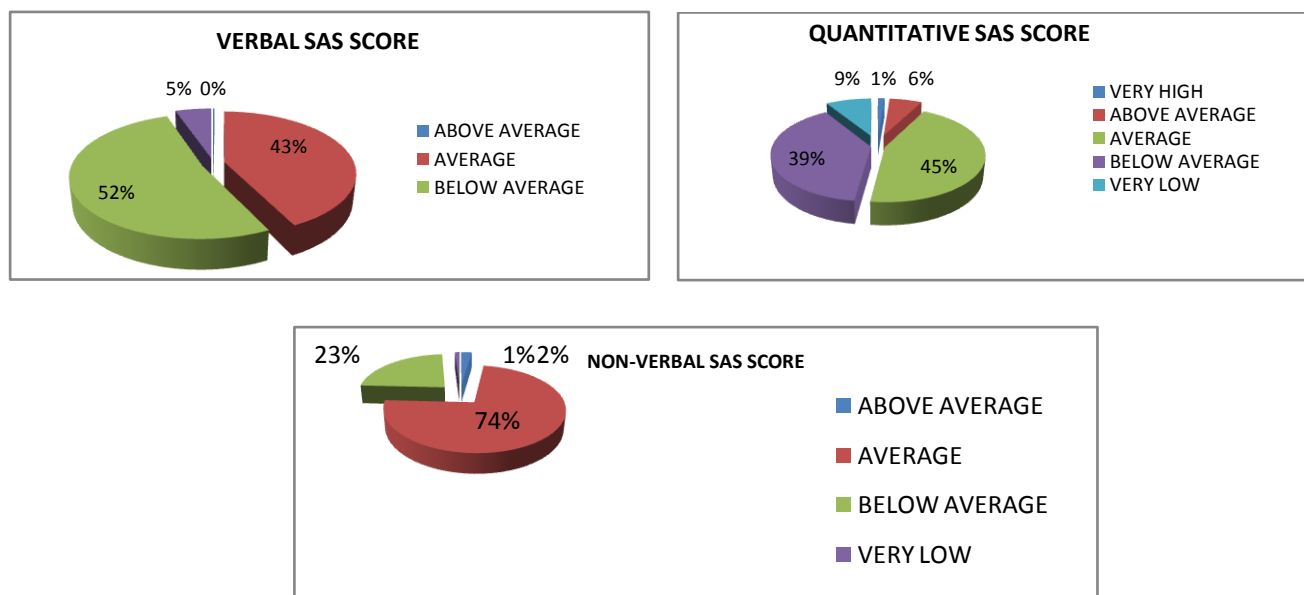


Figure 1

Classification of Cognitive Ability Test Scores of Eighth Standard Pupils

TABLE 2: ANALYSIS OF VARIANCE (ANOVA) FOR VERBAL-SAS, QUANTITATIVE-SAS, NON-VERBAL-SAS IN RELATION TO FATHER'S QUALIFICATION.

Batteries	Source of variation	Sum of Squares	df	Mean Square	F
Verbal -SAS	Between Groups	599.43	5	119.89	1.87 ^{NS}
	Within Groups	38048.97	594	64.06	
	Total	38648.39	599		
Quantitative-SAS	Between Groups	1159.52	5	231.90	1.27 ^{NS}
	Within Groups	108190.47	594	182.14	
	Total	109349.99	599		

Non-Verbal-SAS	Between Groups	1198.36	5	239.67	3.78**
	Within Groups	37630.44	594	63.351	
	Total	38828.80	599		

**** Significant at 1% level, NS- Not-Significant, df- Degrees of Freedom,**

One way Anova was applied to find whether the mean SAS scores differ significantly in relation to qualification of the father. The ANOVA result shows that the calculated F-ratio value is 1.87 and 1.27 which is lesser than the table value of 2.229 at 1% level of significance for Verbal and Quantitative Ability. Whereas for the Non-Verbal Ability it is found out to be 3.78 which is greater than the table value of 2.229 at 1% percent level. So Verbal and Quantitative Ability in relation to the father's educational qualification do not differ significantly while Non-Verbal Ability differs significantly. It is inferred that Non-Verbal Ability is higher among the Quantitative and Verbal Abilities in relation to father's educational qualification.

Hence the null hypothesis stated as, *"There is no significant difference between the Cognitive Ability SAS scores in relation to the father's qualification for Verbal Ability and Quantitative Ability"* was accepted. Whereas, the null hypothesis stated that, *"There is no significant difference between the Cognitive Ability SAS scores in relation to father's qualification for Non- Verbal Ability"* was rejected.

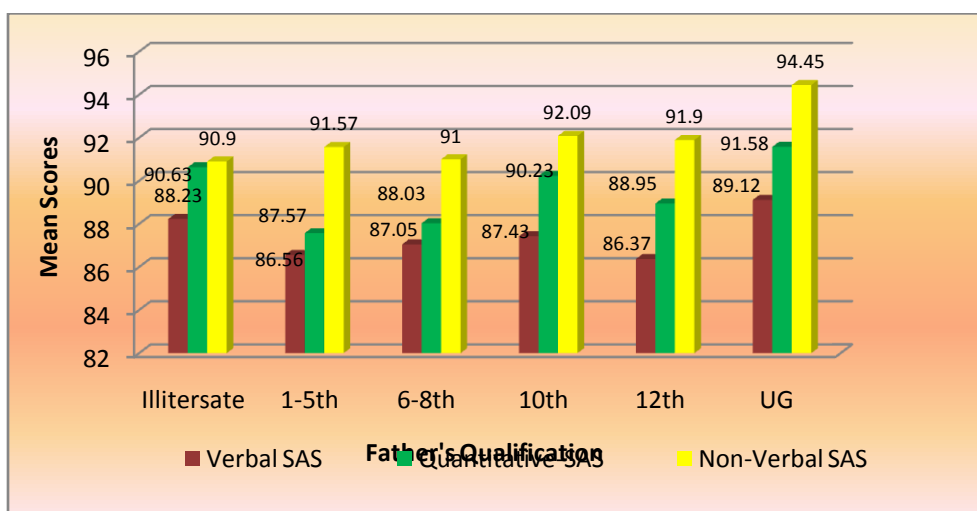


Figure2 Mean Scores of Cognitive Ability Test batteries in relation to Father's Qualification.

TABLE 3 ANALYSIS OF VARIANCE (ANOVA) FOR VERBAL-SAS, QUANTITATIVE-SAS, NON-VERBAL-SAS IN RELATION TO 'Mother's Educational Qualification'

Batteries	Source of variation	Sum of Squares	df	Mean Square	F
Verbal-SAS	Between Groups	422.30	5	84.46	1.31 ^{NS}
	Within Groups	38226.10	594	64.35	
	Total	38648.40	599		
	Between Groups	2134.44	5	426.89	

Quantitative-SAS	Within Groups	107215.55	594	180.50	2.37*
	Total	109349.99	599		
Non-Verbal-SAS	Between Groups	1198.36	5	239.67	3.78**
	Within Groups	37630.44	594	63.35	
	Total	38828.80	599		

**Significant at 1% level, * Significant at 5% level, NS – Not Significant,

One way Anova was applied to find whether the mean SAS scores differ significantly in relation mother's educational qualification. It is found that the Verbal SAS scores do not differ significantly in relation to mother's educational qualification. The ANOVA result shows that the calculated F-ratio value is 1.31 which is lesser than the table value of 3.048 for Verbal Ability. From the table it is clear that the value 2.37 which is significant at 5% level for Quantitative Ability and 3.78 which is also significant at 1% level for Non-Verbal Ability.

Hence the null hypothesis stated as, "*There is no significant difference between the Verbal Ability SAS scores in relation to the mother's educational qualification*" was accepted. It is inferred that mother's qualification does not make any significant difference on the verbal ability of the students. On the other hand, the null hypothesis stated as, "*There is no significant difference between the Quantitative Ability SAS scores and Non-Verbal Ability SAS scores in relation to the mother's educational qualification*" was rejected.

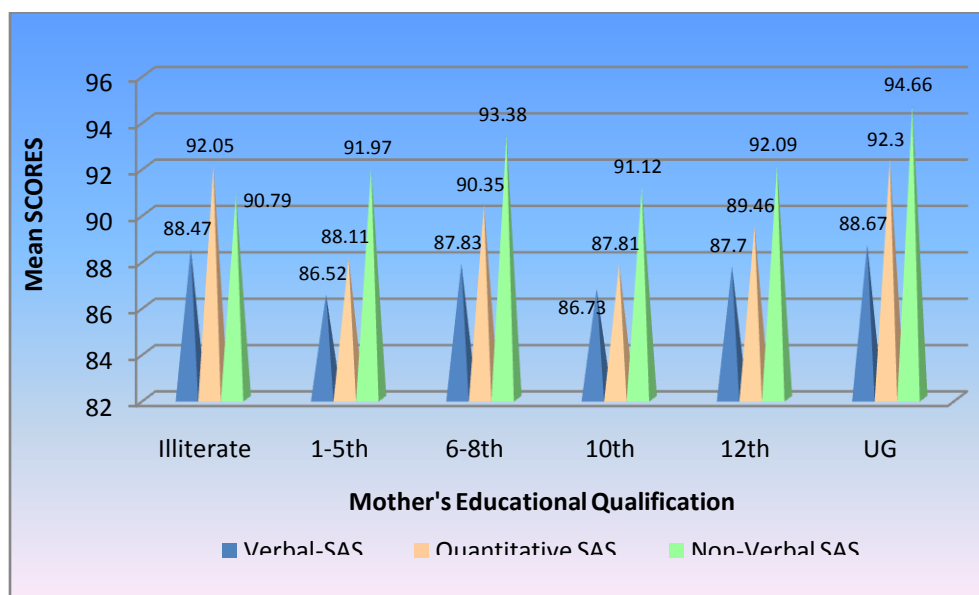


Figure: 3 Mean Scores of Cognitive Ability Test Batteries in relation to 'Mother's Educational Qualification'

TABLE 3 ANALYSIS OF VARIANCE (ANOVA) FOR VERBAL-SAS, QUANTITATIVE-SAS, NON-VERBAL-SAS IN RELATION TO FATHER'S OCCUPATION.

Batteries	Source of variation	Sum of Squares	df	Mean Square	F
Verbal-SAS	Between Groups	31.37	3	10.455	0.16 ^{NS}
	Within Groups	38617.03	596	64.794	
	Total	38648.40	599		

Quantitative-SAS	Between Groups	455.95	3	151.984	0.83 ^{NS}
	Within Groups	108894.03	596	182.708	
	Total	109349.99	599		
Non-Verbal-SAS	Between Groups	396.96	3	132.321	2.05 ^{NS}
	Within Groups	38431.84	596	64.483	
	Total	38828.80	599		

NS – Not Significant

Anova was applied to find whether the mean Verbal, Quantitative and Non-Verbal SAS scores differ significantly in relation to father's occupation. It is found that the Cognitive Ability SAS scores do not differ significantly in relation to father's occupation. The ANOVA result shows that the calculated F-ratio value is 0.16 is lesser than the table value of 2.620. It is also found out that the calculated F-ratio value is 0.83 and 2.05 which is also lesser than the tabulated value of 2.620, for the Quantitative Ability and Non-Verbal Ability respectively. Since the calculated value is lesser than the table value, it is inferred that the Verbal SAS Scores, Quantitative SAS Scores and Non-Verbal SAS scores do not differ significantly in relation to father's occupation.

Hence the null hypothesis says that, *"There is no significant difference between the cognitive ability SAS scores in relation to father's occupation"* was accepted. It is inferred that the father's occupation does not make any significant difference on the Cognitive Ability of the students.

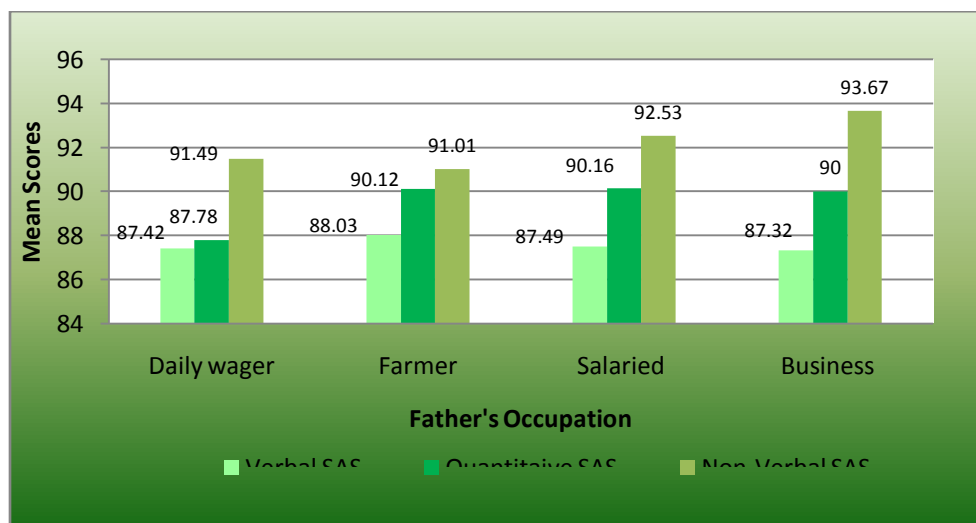


Figure: 3 Mean scores of Cognitive Ability Test Batteries in Relation to Father's Occupation.

TABLE 4 ANALYSIS OF VARIANCE FOR VERBAL-SAS, QUANTITATIVE-SAS, NON-VERBAL-SAS IN RELATION TO 'MOTHER'S OCCUPATION'

Batteries	Source of variation	Sum of Squares	df	Mean Square	F
Verbal-SAS	Between Groups	795.80	3	265.27	4.18**
	Within Groups	37852.60	596	63.51	

	Total	38648.40	599		
Quantitative-SAS	Between Groups	2193.85	3	731.28	4.07**
	Within Groups	107156.14	596	179.79	
	Total	109349.99	599		
Non-Verbal-SAS	Between Groups	228.12	3	76.04	1.17 ^{NS}
	Within Groups	38600.68	596	64.77	
	Total	38828.80	599		

****Significant at 1% level, NS – Not Significant, , df –degrees of freedom, table value at 1% level of significance for 3 and 596 is 3.815**

ANOVA was applied to find whether the mean scores differ significantly in relation to mother's occupation. The Verbal SAS scores and the Quantitative SAS scores do not differ significantly while Non-Verbal SAS scores differ significantly in relation to mother's occupation. The ANOVA result shows that the calculated F-ratio value is 4.18 for verbal ability and 4.07 for quantitative ability which is greater than the table value of 3.815 at 1% level of significance. Since the calculated value is greater than the table value, it is inferred that the verbal SAS scores and quantitative SAS scores do differ significantly in relation to mother's occupation.

Hence the null hypothesis stated as, *"There is no significant difference in the Verbal Ability SAS scores and Quantitative Ability SAS scores in relation to mother's occupation"* was rejected. It is inferred that the mother's occupation do play a significant difference on the Verbal Ability and Quantitative Ability of the students.

Since the calculated value for Non-Verbal SAS scores is 1.17 which is lesser than the table value of 3.815 at 1% level of significance, it is found that the null hypothesis stated as, *"There is no significant difference between the non-verbal ability SAS scores in relation to the mother's occupation"* was accepted.

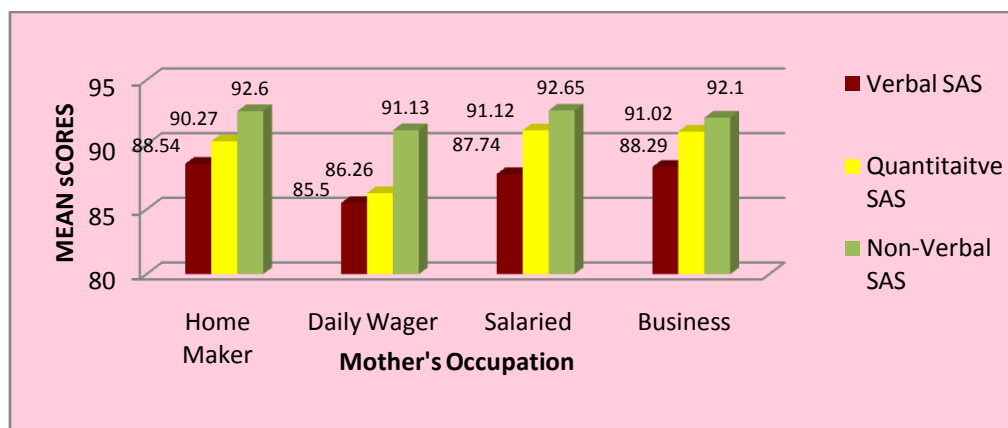


Figure: 4 Mean Scores of Cognitive Ability Test Batteries in relation to Mother's Occupation.

DISCUSSION

This study sets out to investigate the Parental influence upon the Cognitive Reasoning Ability in relation to Academic Achievement of Eighth Standard School Pupils. The present study reveals that the father's educational qualification has a positive influence on the Non-Verbal Reasoning ability while the mother's educational qualification has a positive influence upon the pupils

Quantitative and Non-Verbal Reasoning ability. Neither of the parents had any positive influence on the verbal reasoning ability. The father's occupation did not have any positive influence on the Cognitive Ability of the pupils while the mother's occupation had a positive influence on the verbal and Quantitative reasoning ability. In order to enhance academic achievement of the students, parents should also co-operate in the development and welfare of their children so as to facilitate their Cognitive reasoning Ability.

REFERENCES

- Jacob A. Giessman, James L. Gambrell, Molly S. Stebbins (2013) Minority Performance on the Naglieri Nonverbal Ability Test, Second Edition, Versus the Cognitive Abilities Test, Form 6 National Association for gifted Children Vol 57(2).
- Lohman, D. F. (2005). The Role of Nonverbal Ability Tests in Identifying Academically Gifted Students: An Aptitude Perspective. Gifted Child Quarterly, 49(2), 111-138.
- Chu.(2016), Predicting Children's Reading and Mathematics Achievement from Early Quantitative Knowledge and Domain-General Cognitive Abilities, Frontiers in Psychology 7: 775.
- Schalk (2016) Relational Quantitative Reasoning in Kindergarten Predicts Mathematical Achievement in Third Grade Journal of Numerical cognition 2(2).
- Karamadi (2016), Impact of medium of instruction on verbal, numerical and reasoning abilities and academic performance of school students, Indian Journal of Health & Wellbeing , 7 (2), 240-243.
- Iyamu (2005), Relationship between Verbal Ability And Students' Achievement In Secondary School Social Studies In Southern Nigeria , Language In India, 5



MINIMIZING ATTENTION DEFICITS IN CHILDREN WITH AUTISM THROUGH PRACTICING YOGA

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ABSTRACT

Yoga is an ancient art which was originated in India around six thousand years ago. Earlier people were used to practicing of yoga and meditation in their daily lives to live healthy and strong whole life. The practice of Yoga and Breathing Exercises among children with autism gives a positive improvement in Increased social and communication skills, Awareness and Expression of emotions, Reduced anxiety, Reduction in challenging behaviours, Increased body awareness and Positive sense of self. Common challenges children with ASD face are difficulty with expressive and receptive communication, sensory integration deficits and social/emotional challenges (understanding and recognizing facial expressions, social cues and their emotions as well as emotions of others). Specific breathing strategies can be taught to support children with ASD in reducing anxiety and soothing their nervous systems. The practice of mindful breathing, guided imagery and poses that calm the nervous system can support these children in developing coping skills, self-regulation skills and more effective responses to stress, both emotionally and physically. Yoga is known to be really effective in curing these kinds of problems not only for the normal people but also for the disabled persons like persons with autism over a period of time. Regular practice creates mental clarity and calmness thereby relaxing the mind.

KEYWORDS: Yoga, Meditation, Autism, Breathing Exercise.

INTRODUCTION

Yoga is an ancient art which was originated in India around six thousand years ago. Earlier people were used to practicing of yoga and meditation in their daily lives to live healthy and strong whole life. Yoga is a practice to bring body parts together to make a balance of body, mind and soul. It regularizes the connection between three components of our body such as body, mind and soul. It regularizes the functioning of the all body organs and prevents the body and mind to get disturbed. It helps in maintaining the health, knowledge and inner peace and in maintaining the harmony among all.

A yoga session mainly comprises of breathing exercises, meditation and yoga asana that stretch and strengthen various muscle groups. It is a good substitute for avoiding medicines that are harmful for our mental and physical health. Regular practice of yoga sharpens the human mind, improves intelligence, helps in high level of concentration by steadying the emotions and feelings, develop self-discipline and self awareness.

Yoga can be practiced by anyone as it is irrespective of age, religion, or health circumstances. To enhance its awareness about its benefits all over the world, the Indian Prime Minister, Narendra Modi has suggested to the United Nations General Assembly to declare the 21st of June as an International Day of Yoga.

Importance and Benefits of Yoga:

Yoga aids in controlling a person's body, mind and soul. It brings the physical and mental discipline together to soothe the body and mind. It also aids in managing stress and anxiety and keeps you relaxed. Yoga asana are known to develop vigor, flexibility and confidence.

Benefits of Yoga:

- Improves flexibility of muscles
- Corrects the posture and alignment of the body
- Renders better digestive system
- Strengthens internal organs
- Cures asthma
- Cures diabetes
- Helps in curing heart related problems
- Helps in skin glow
- Promotes strength and stamina
- Tones internal organs
- Improves concentration
- Helps in mind and thought control
- Keeps mind calm by overcoming anxiety, stress and depression
- Helps in releasing tension
- Helps in blood circulation and muscle relaxation

- Weight reduction
- Protection from injury

Children with Autism:

Autism is a complex neurobehavioral condition that includes impairments in social interaction and developmental language and communication skills combined with rigid, repetitive behaviors. Because of the range of symptoms, this condition is now called autism spectrum disorder (ASD). It covers a large spectrum of symptoms, skills, and levels of impairment. ASD ranges in severity from a handicap that somewhat limits an otherwise normal life to a devastating disability that may require institutional care.

Children with autism have trouble communicating. They have trouble understanding what other people think and feel. This makes it very hard for them to express themselves either with words or through gestures, facial expressions, and touch. A child with ASD who is very sensitive may be greatly troubled -- sometimes even pained -- by sounds, touches, smells, or sights that seem normal to others.

As the identification of autism is on the rise, now 1 in 68 children according to the Center for Disease Control (CDC), parents, educators and other professionals continue to be faced with the challenges of supporting children with Autism Spectrum Disorder (ASD) in the home, school and community settings. Common challenges children with ASD face are difficulty with expressive and receptive communication, sensory integration deficits and social/emotional challenges (understanding and recognizing facial expressions, social cues and their emotions as well as emotions of others). Children with ASD can exhibit a broad range in these areas, some having more difficulty in one or more areas than another. Many children ASD may also experience heightened levels of anxiety.

Recently, yoga has become a topic of interest as an intervention and supplemental support for children with ASD. In addition to benefits typically associated with yoga such as increased strength, balance, coordination and flexibility, benefits such as increased social-emotional skills, language and communication, body awareness, self-regulation, focus and concentration and a reduction in anxiety, impulsive, obsessive, aggressive and self-stimulatory behaviors have also been noted.

Benefits of Yoga for Autistic Children:

1. Increased Social-Communication Skills:

A study published in the International Journal of Yoga Therapy showed an improvement in imitation skills. The study indicated that yoga may offer benefits as an effective tool to increase imitation, cognitive skills and social-communicative behaviors in children with ASD. In addition, children exhibited increased skills in eye contact, sitting tolerance, non-verbal communication and receptive communication skills (Radhakrishna, S., 2010).

When practicing yoga poses and breathing strategies, children learn the poses and breathing through imitating the actions and behaviors of the adult. This also supports children's ability to sustain joint attention, something that can be a challenge for children with ASD. Visualization, guided imagery and repetition of vocabulary with the use of visual aids and images can also support development of language and vocabulary.

2. Awareness and Expression of Emotions:

Not only can the practice of yoga bring more awareness to social cues such as facial expressions, actions and social behaviors but it can also bring more awareness to children's emotions and how they are feeling. Because children with ASD often have difficulty with expressive and receptive communication, they may act out their emotions in unexpected or inappropriate ways. Breathing strategies can be taught to children with ASD in order to release difficult or uncomfortable emotions such as anger, frustration or anxiety in more healthy and constructive manners.

3. Reduced Anxiety:

Many children with ASD experience heightened levels of anxiety. This can significantly affect their sleep, mood, behavior and health. Due to difficulty with communication, sensory integration deficits and a variety of other challenges, children with ASD can be in a constant state of anxiousness. This state of anxiousness is often referred to as the fight/flight mode. When children are in the fight/flight mode, cognition and communication goes down and they tend to move into chest breathing or hyperventilation, which can exacerbate their anxiety. Specific breathing strategies can be taught to support children with ASD in reducing anxiety and soothing their nervous systems. The practice of mindful breathing, guided imagery and poses that calm the nervous system can support these children in developing coping skills, self-regulation skills and more effective responses to stress, both emotionally and physically. Calming their nervous systems and releasing tension in their minds and bodies supports better sleep, digestion, mood, behavior and overall health and well-being.

4. Reduction in Challenging Behaviors:

Because of the many difficulties children with ASD face in areas of language and communication, expression of emotions, sustaining attention and sensory integration, they may display challenging behaviors. A study about yoga and improving behavior was recently published in the American Journal of Occupational Therapy. Assessment of challenging behaviors was recorded before and after the yoga intervention and a significant impact on behaviors among children with ASD was noted. The results of the study showed improvement of behaviors in the children with autism who practiced yoga consistently over a 16-week period (Koenig, Buckley-Reen & Garg, 2012). A combination of breathing strategies and yoga poses can support children with ASD not only in reducing anxiety, which can directly impact mood and behavior, but can also support children with ASD in developing self-regulation and coping skills.

5. Increased Body Awareness:

Many children with ASD may have limited body awareness. By teaching and identifying body parts through yoga and movement of the body, children can develop a greater sense of body awareness. Poses that provide proprioceptive and vestibular input also support body awareness. Directional concepts taught in yoga such as up and down and left and right are also helpful concepts in developing a greater sense of body awareness.

6. Positive Sense of Self:

Along with the many benefits listed above, the practice of yoga can also support children with ASD in developing self-confidence and self-esteem. Balancing poses and standing poses in particular are exciting and powerful poses for children with ASD to practice. Whether it's a

standing, balancing or seated pose, any pose can be modified to support the ability of the child in order to build up the child's self-esteem and help the child feel successful.

OBJECTIVES:

- Teach child/children simple yoga poses and breathing exercises with the use of visuals, games, repetition and fun and motivating activities.
- Choose poses and breathing strategies at first that allow the child to feel successful and practice them consistently before adding new poses and breathing strategies.
- Create a yoga schedule with pictures of poses so there is consistency and the child knows what to expect.
- Allow the child to choose preferred poses in order to feel a sense of involvement and control.

Sample selected for the study:

The investigator used Purposive Sampling technique to select the sample for this study. The sample chosen for the present study consisted of 25 children age group with autism between 10-15 years.

Tools used for the study:

Based on the objectives of the study, the investigator selected suitable tool such as

- i) **Personal data bank** to collect the information about the subjects such as name, age, gender, date of birth, order of child, any autism history in family, qualification, occupation and income of parents.
- ii) **Visual games on yoga, Yoga schedule with pictures of poses** to motivate children with Autism to learn yoga.

FINDINGS OF THE STUDY:

The major findings are summarized as follows:

- **Yoga Relaxation May Help Improve Autism Symptoms**
- Specific poses and breathing strategies taught to children with ASD provided proprioceptive and vestibular input from the two "hidden" sensory systems in order to support sensory integration and self-regulation.
- 6 children with autism experienced with increased social-communication skills.
- 3 children with autism had reduced anxiety.
- 5 children with autism initiated with increased body awareness.

CONCLUSION:

One of the main benefits of practicing yoga is that it helps manage stress. Stress is common these days and is known to have devastating effects on one's body and mind. Due to stress people develop serious problems like sleeping disorder, neck pain, back pain, headaches, rapid heart rate, sweaty palms, dissatisfaction, anger, insomnia and inability to concentrate. Yoga is known to be really effective in curing these kinds of problems not only for the normal people but also for the disabled persons like persons with autism over a period of time. Regular practice creates mental clarity and calmness thereby relaxing the mind.

REFERENCES:

1. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2952122/>
2. <http://www.ncbi.nlm.nih.gov/pubmed/22917120>
3. Smith, K.A. and Gouze, K.R. (2004) The Sensory Sensitive Child: Practical Solutions for Out-of-Bounds Behavior. New York, NY: HarperCollins.
4. <https://www.autismparentingmagazine.com/creating-inner-peace-the-benefits-of-yoga-for-children-with-autism-spectrum-disorder/>
5. https://www.huffingtonpost.com/elaine-gavalas/yoga-autism_b_1858166.html
6. <http://www.indiacelebrating.com/essay/yoga-essay/>
7. <http://www.indiacelebrating.com/essay/essay-on-importance-of-yoga/>
8. <https://www.yogajournal.com/lifestyle/count-yoga-38-ways-yoga-keeps-fit>



ACADEMIC PERFORMANCE OF SPORTS AND GAMES ACHIEVERS IN HIGH SCHOOLS

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ABSTRACT

One of the foremost objectives of the school is to formulate a scheme of hobbies, occupations and projects that will appeal to and draw out the power of children of varying temperaments and attitudes. This purpose is faithfully served by a well planned programme of co-curricular activities. According to secondary Education Commission (1952-53), co-curricular activity is an integral part of the activities of a school as its curricular work and their proper organisation needs just as much care and fore-thought. Every curricular activity has its origin in co-curricular activities and vice versa. It is because of the factor that both of them serve the same ends. They are designed to achieve the broad objectivities of education. The co-ordination of all the experiences of the pupil-intellectual, social, moral, emotional and physical has become the object of persistent efforts of the school that aims to be a real living little world for the pupils. The place and importance of sports and games has been recognised by all. But more theoretical acceptance and issuing the circulars perhaps can never succeed in achieving the objectives because there are some practical difficulties. The teachers, headmasters and parents should have a favourable attitude towards sports and games. They should realize that sports and games actually promote progress in studies. Hence the study entitled "Academic performance of sports and games achievers in high schools" The sample for the study consists of 240 sports and games achievers from 12 high schools in Ernakulam district. Purposive sampling technique was adopted to select the schools. The investigator selected twenty sports and games achievers from each of the selected high schools. Twenty items was constructed by the investigator on performance in sports and games, their attitude, encouragement from family and school for their participation. Academic performances of sports and games students were obtained. The study revealed that girls perform better than boys. Hence it is the responsibility of teachers and parents to bring a balance between academics and sports and games in each and every learner.

KEYWORDS: Academic Performance, Sports and Games Achievers, High Schools

INTRODUCTION

“By education, I mean an all round drawing out of the best in child and man- body mind and spirit”
-Mahatma Gandhi

“Education, means the natural, progressive and harmonious development of all the faculties of the individual-head, heart and hand”
-Pestalozzi

Sports and games are important co-curricular activities which aim to develop positive self concepts and social interaction skills.

Values of Sports and Games

B.R. Purkait (1996) & J.s. Walia (1984) gave a description of values of sports and games. They are

1. Physical Value

Sports and games provide powerful physical force, as the muscles and parts of the body of the player are developed and exercised in sports and games. They help for the development of health and physique of the students.

2. Intellectual Value

In sports and games, children exchange various things in happy and pleasant mood. Such a situation leads to intellectual development. Alertness is developed; new ideas, concepts and thoughts are formed; imagination is sharpened; thinking and reasoning are enhanced; power of judgment is widened and mental horizon is broadened

3. Emotional Value

Games and sports provide outlet for the emotional energies. Play helps the child to have control over his emotions; it overcomes shyness, moodiness, over sensitiveness and withdrawing attitude.

4. Social Value

Various social qualities like co-operation, give and take, fellow feeling, obedience, team spirit, sportsmanship, leadership, tolerance, attitude of accepting defeat and moderation in victory etc., are developed through sports and games.

5. Character Value

Games and sports are helpful in developing various qualities of character like industriousness, resourcefulness, cheerfulness, perseverance, patience, self confidence, self control, steadiness of purpose, initiative, courage, honesty, fair mindedness and loyalty etc.

6. Personality Value

Sports and games aim at integrating various elements of personality, physical, intellectual, emotional, social and moral into one. As a result, healthy personality is developed.

7. Educational Value

Play has a great deal of importance in the field of education. It motivates the child to learn and hence provides many opportunities to learn various activities. It is in his free atmosphere that he develops power of originality, imagination and reasoning.

8. Leadership Value

Different play activities organized in the school form time to time provide enough opportunities for the training in leadership as every activity requires a leader from the students for its organization.

9. Disciplinary Value

Sports and games help in the maintenance of constructive discipline by the utilization of surplus energy and sublimation of the instants and emotions of the students and by the inculcation of various civic and social values.

10. Recreational Value

Play activities provide valuable means for the proper utilization of leisure to the students. They provide opportunities for reducing the monotony of academic work and prove a healthy recreative agent.

NEED FOR THE STUDY

The place and importance of sports and games has been recognized by all. But more theoretical acceptance and issuing the circulars perhaps can never succeed in achieving the objectives because there are some practical difficulties. The teachers, headmasters and parents should have a favorable attitude towards sports and games. They should realize that sports and games actually promote progress in studies. When they realize this, there will certainly be a reduction in the harassment and discouragement to the participants and they will not be demoralized due to indifference and sometimes of active hostility. This study is undertaken to find out the academic performance of sports and games achievers in high school.

OBJECTIVES OF THE STUDY

- ❖ To find out the gender wise difference in the academic performance of sports and games achievers in high schools.

Area of Investigation

The investigator selected 12 high schools in Ernakulam district. The sample consists of 240 sports and games achievers.

Selection of the Method

Purposive sampling technique was adopted to find out the “**Academic performance of sports and games achievers in high schools**”.

Tools used in the present study

A questionnaire with 20 items was constructed by the investigator to elicit information about the achievers in sports and games, their attitude, encouragement from family and school for their participation.

Questionnaire for gathering the details of parents education, family income, parents occupation, number of children in the family, parental encouragement for studies, nature of home environment, facilities available at home for studies was administered to the achievers in sports and games.

Academic performance is measured with the help of the marks obtained in the second terminal examination.

ANALYSIS AND INTERPRETATION

TABLE-1: DIFFERENCE IN ACADEMIC ACHIEVEMENT BETWEEN BOYS AND GIRLS

Category	Number	Mean	SD	't' value
Boys	120	49.57	18.12	5.192**
Girls	120	61.76	18.24	

**significant at 0.01 level

From table 1 the mean value shows that girls perform better in their academic achievement than boys. It may be due to the awareness present among the girls regarding the value of education and realization of their responsibilities.

TABLE-2: DIFFERENCE BETWEEN LEVEL OF ACHIEVEMENT OF STUDENTS IN SPORTS AND GAMERS AND THEIR ACADEMIC PERFORMANCE

Level of participation	Average Marks			'F' Value
	No. of Students	Mean	SD	
School Level	102	60.87	21.34	4.93**
Sub district Level	31	50.73	20.19	
District Level	41	57.26	14.77	
State Level	51	48.04	14.69	
National Level	15	52.06	14.77	
Total	240	55.66	19.14	

**significant at 0.01 level

From table 2 the mean value reveal that students who won at school level shows better academic performance. The better academic performance of sports and games achievers at school level may be because they can compensate the class hours if they miss classes. But the winners in sports and games at other levels have to undergo extra coaching and they may not have sufficient time for studies.

FINDINGS

The study reveals that most of the students participate only at school level sports and games. Girls possess better academic performance than boys. Students who won only at school level posses better academic performance compared to other students. Also difference in academic achievement with regard to family income of students was found to be highly significant.

CONCLUSION

Achieving success in our society requires much more than academic success. So school must provide for more than just the academic development of adolescents. By striking a balance

between academics and sports and games activities, learning and practical experiences can be co-ordinate so that schools can prepare children to be productive citizens in this global society.

Recommendations

- ✓ Teachers and school authorities shall give children sufficient time to play
- ✓ Extra credit shall be given in the academics when student s participate in sports and games
- ✓ Steps can be taken by teachers to make up the poor academic performance of sports and games achievers
- ✓ Parents and teachers shall give equal importance to academics as well as in physical activities
- ✓ Sports and games shall be given due weight age and may be made as a curricular component

REFERENCES

1. Atsalakis et.al (1996) “Parental motivations for sports and games” Medicine and science in sports and exercise, Vol 29,Pp.788-793.
2. Purkait.B.R (1996), Principles and Practices of Education:- New Central Book Agency Ltd, Chintamoni Das Lane Calcutta Pp.385-391.
3. Walia, J.S.(1984), A Modern Text Book of Education, Paul Publishers, N.N 11 Gopal Nagar, Jalendhar city, Pp.115.



NUTRITIONAL STATUS OF PUPILS WITH SPECIAL NEEDS IN COIMBATORE DISTRICT

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ABSTRACT

Nutrition is the Science/study of the appropriate diet to promote health. Nutrition of children with special needs is of paramount importance, because the foundation for lifetime health, strength and intellectual ability is laid down during childhood period. The study on Nutritional status of Pupils with special needs in Coimbatore district intends to get the details on Anthropometric measurements, Physical appearance, Diet history, Feeding disorders, Educational, social and Emotional Problems in children with special needs. The sample consisted of 120 disabled pupils from 7 special schools and 4 integrated schools in Coimbatore district. The results revealed the presence of malnourishment among pupils with special needs and are at the risk of poor nutritional status..By the percentage analysis of the combined indices of weight for age and weight for height, the visually impaired were forward than pupils with other disability. Overall results of Physical examination shows that visually impaired pupils reported to have symptoms that reflect undernourishment and is less among hearing impaired pupils. Prevalence of feeding disorders is high among mentally retarded pupils followed by loco motor disabled pupils. Hence the study insists on the necessity for the policy makers to plan nutritional policies and conduct awareness programmes for regular teachers, resource/special teachers and parents so as to enhance the nutritional and educational status of pupils with special needs, since health and educational achievement are closely related.

KEYWORDS: *Nutritional Status, Malnutrition, Undernutrition, Pupils with Special Needs*

INTRODUCTION

Nutrition is the Science/study of the appropriate diet to promote health. Nutrition of children is of paramount importance, because the foundation for lifetime health, strength and intellectual ability is laid down during childhood period. Pupils with special needs are reported to be at the greater risk for poor nutritional status, specially, severely disabled children. Malnutrition in disabled pupils impairs mental capacity affecting cognitive ability, delays the development of motor skills, increase absentees from school and makes it more difficult for these pupils to be alert and interactive in the classroom. More awareness is needed on the part of the teachers, especially parents to identify simple signs and symptoms of different forms of nutritional deficiencies among pupils with special needs which leads to poor nutritional status. Hence the study attempts to find out the nutritional status of children with special needs in Coimbatore district.

OBJECTIVES

- Study the Nutritional status of pupils with special needs in special and integrated schools in Coimbatore district
- Identify the height and weight, Physical appearance of pupils with special needs and
- Find out feeding disorders and educational problems among pupils with special needs

METHODOLOGY

The method adopted was survey and a check list was used to get the details on Personal data, Anthropometric measurements, Physical appearance, Diet history, Feeding disorders, Educational, Social and Emotional Problems in children with special needs. The sample consisted of 120 disabled pupils from 7 special schools and 4 integrated schools in Coimbatore district

Interpretation and Findings: The summary of the study are discussed as follows:

I. a. Background Information

- Out of 120 pupils with special needs, majority (43%) belong to the age group 7 - 9 years followed by age group 5 - 7 years (30%) and 9 - 11 years (27%).
- Disabled boys (67%) were more when compared to disabled girls (33%).
- Sixty seven percent of disabled pupils belongs to special schools and 33% in integrated schools.
- Among 30 pupils with mental retardation, more than 3/4 belongs to trainable category (77%) and the others (23%) belong to the educable category.

b. Personal Profile

- Sixty seven percent of pupils with disability were congenitally as against acquired (33%). 47% of them were hostelites and 50% were dayscholars. 3% were in home. Fifty eight percent of disabled pupils were from rural area and remaining from urban (42%) area. Majority of the disabled pupils were from nuclear family (73%) and 27% were in joint family.

II. Socio Economic Status

- Majority of the parents of disabled pupils were educated upto tenth standard and 22% were illiterates. Only 1% of parent of disabled pupil were post graduate. Income of parents of mentally retarded pupils was better when compared to pupils of other impairments. 43% of the parents were working as coolies and 57% of them were non-coolies.

III. Anthropometric Measurements

- Approximately 1/3 of pupils with special needs had normal height for weight (mentally retarded-33%, hearing impaired-30% and visually impaired-20%) Less than 1/3 of pupils with special needs had grade IV level category. None of the pupils with locomotor disability and pupils with hearing impairment belong to the grade II and grade I levels respectively.

Combined Indices

- 40% of pupils with mental retardation and hearing impairment and 20% of pupils with visual impairment and locomotor disability had normal and marginal height and weight.
- Pupils with special needs having normal mid upper arm circumference (mentally retarded-43%, locomotor disabled-40%, visually impaired-30%, hearing impaired-23%) indicates that they were well nourished.

IV .Physical Examination

- The percentage of the appearance of normal hair among pupils with special needs include hearing impaired (70%), mentally retarded (53%) and locomotor disabled (53%), visually impaired (47%).
- The percentage of the pupils with special needs who had normal eyes include hearing impaired (97%) locomotor disabled (87%) mentally retarded (83%) and visually impaired (60%).
- More than half of pupils with special needs had normal appearance of nose. The percentage of pupils with special needs who had running nose were approximately 20-25%.
- More than half of the pupils with special needs had normal mouth appearance. None of the pupils with special needs had cleft palate, cleft lip. Only 3% of locomotor disabled had edemated lip.
- More than 40% of pupils with special needs had normal appearance of tooth. 10% and above had their tooth coated and had irregular size and shape. Less than 15% had their tooth with bleeding gums, tiny tooth and cavities.
- More than 80% of pupils with special needs had normal appearance of tongue. The pupils with mental retardation, visual impairment and hearing impairment who had reddish tongue were 3% respectively.
- 60% and above had normal nails. Only 3% of pupils with mental retardation had their nails spoon shaped and cracked. More than 15% of pupils with special needs had dirt in their nails.
- 70% and above had normal skin. 3% of pupils with visually impairment, with locomotor disability had scabies, 3% of pupils with locomotor disability and hearing impairment had white patches in their skin.

V.Diet History**I.Food Preferences**

- Cent percentage of pupils with mental retardation, locomotor disability preferred rice, bengal gram dhal/roasted, red gram, tubers, vegetables and oils.. None of the pupils with visual impairment preferred bajra, ragi and soft drinks. Cent percentage of pupils with hearing impairment preferred rice and red gram. More than 90% preferred wheat and milk.

2. Physical Complaints

- The percentage of pupils with mental retardation who had physical complaints such as indigestion and vomiting were 17%, nausea and lack of appetite (10%), fever (7%), diarrhea and constipation (3%). 10% of pupils with visual impairment had complaint about fever, 7% nausea and vomiting, 3% lack of appetite constipation and indigestion. There were no physical complaints with pupils with hearing impaired except fever (7%) and lack of appetite (7%). 10% and above pupils with locomotor disability complaint about nausea, diarrhea and constipation. (Table I)

TABLE I
DISTRIBUTION OF PUPILS WITH SPECIAL NEEDS BASED ON THE PHYSICAL COMPLAINTS

Physical Complaints	M.R. (N=30)		V.L (N=30)		H.I (N=30)		L.D (N=30)	
	N	%	N	%	N	%	N	%
Lack of Appetite	3	10	1	3	2	7	3	10
Constipation	1	3	1	3	-	-	1	3
Diarrhoea	1	3	-	-	-	-	1	3
Indigestion	5	17	1	3	-	-	-	-
Fever	2	7	3	10	2	7	4	13
Nausea	3	10	2	7	-	-	3	10

3. Intake of Food

- Cent percent of pupils with hearing impairment, visual impairment (93%) locomotor disability (90%) and mental retardation (80%) had their food with family members, 43% of pupils with mentally retarded, 10% locomotor disability and 7% visually impaired had their food with the assistance of parents / teachers.

4. Drug History

- More number of pupils with mental retardation (30%) took drugs compared to pupils with locomotor disability, 10%, visually impairment and hearing impairment 7% respectively. 10% of the pupils with mentally retarded (10%) and hearing impaired (3%) reported to have side effects due to intake of drugs. Twenty percent of the pupils with mental retardation, 30%

hearing impaired and visually impaired 3% reported to take nutrients as supplements. None of the pupils with locomotor disabled reported to take supplementary nutrients and about side effects due to intake of drugs.

5. Feeding Disorders

- None of the pupils with hearing impairment reported to have feeding disorders. Only 7% of the pupils were reported to have unco-ordinated movement of fingers to handle food and 3% had poor sucking problem. 20% of the locomotor disabled pupils reported to have uncoordinated movements, 7% of them refuse food, 3% of them had coughing, chewing, sucking, drooling and insufficient intake of food. More than 50% of the mentally retarded pupils had drooling and uncoordinated movement of fingers followed by chewing and swallowing (37%), food refusal (23%), poor sucking and insufficient food intake (20%) and coughing 10% respectively.

6. Associated Problems

- More than 30 percent of pupils with mental retardation reported to have associated problems such as speech difficulties, locomotor problem, lack of motor co-ordination, cold and spasticity. Less than 15% of pupils with visual impairment had itching in their eyes, spasticity, Dizziness and lack of motor co-ordination. 10% of hearing impaired pupils reported to have heart problems and lung abnormalities. The percentage of locomotor disabled pupils who reported to have lack of motor co-ordination were (23%), cold (20%), speech difficulty, spasticity, and headache were 13% respectively.

7. Educational, Social and Emotional Behaviour

- More than 80% of mentally retarded pupils had poor academic performance compared to hearing impaired (23%), locomotor disabled (17%) and visually impaired (10%). More than 80% of mentally retarded pupils had poor memory and were easily distracted, 60% had poor attention and concentration. Less than 30% were slow learners and hyperactive. (Table II)

TABLE II
DISTRIBUTION BASED ON THE EDUCATIONAL PROBLEMS OF PUPILS
WITH SPECIAL NEEDS

Educational Problems	M.R. (N=7)		V.L (N=30)		H.I (N=30)		L.D (N=30)	
	N	%	N	%	N	%	N	%
Slow learner	2	33	5	17	11	37	5	17
Poor attention	4	57	4	13	5	17	3	10
Poor concentration	3	43	6	20	8	27	3	10
Poor memory	6	86	4	13	8	27	5	17
Easily distractible	6	86	1	3	6	20	4	13
Hyper active	2	29	2	7	2	7	2	7
Frequent absenteeism	1	14	2	7	4	13	2	7
Poor academic	6	86	3	10	7	23	5	17

performance								
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- The pupils with mental retardation who were dependent in daily living skills were 54%, had other behaviours such as isolation (23%), aggressiveness (27%) and adjustment problems (27%). Ten percent of the visually impaired pupils were aggressive, 7% in isolation, 3% each were stereotypic and dependent in daily living skills. None of them reported to have adjustment problems. 10% of the pupils with hearing impairment were aggressive and exhibited adjustment problems. 7% of them were stereotypic. 17% of locomotor disabled pupils had adjustment problems and were isolated and 7% each were aggressive and dependent in daily living skills.

CONCLUSION

The results revealed the presence of malnourishment among pupils with special needs and are at the risk of poor nutritional status..By the percentage analysis of the combined indices of weight for age and weight for height, the visually impaired were forward than pupils with other disability. Overall results of Physical examination shows that visually impaired pupils reported to have symptoms that reflect undernourishment and is less among hearing impaired pupils. Prevalence of feeding disorders is high among mentally retarded pupils followed by locomotor disabled pupils. Hence there is the necessity for the policy makers to plan nutritional policies and conduct awareness programmes for regular teachers, resource/special teachers and parents so as to enhance the nutritional and educational status of pupils with special needs, since health and educational achievement are closely related

REFERENCES

- Reddy,L.G et al.,(2002)Education of children with special needs. Discovery Publishing, India, pp9-10
- Fox, M.A and Chakravarty, I (2003) Nutrition and Neuro Developmental Disorders. The National Trust New Delhi pp8-30,78-79,95-110
- Yousafzai,AK et al.,(2003) Feeding disabilities in disabled children leads to Malnutrition; Experience in an Indian Slum., British Journal on Nutrition;Vol.90(6);pp97-106

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www.health.wellness.edietstar



PROPORTIONAL PSYCHOANALYSIS OF STRESS AS A FUNCTION OF AGE AND LEVELS OF SPORTS PARTICIPATION

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ABSTRACT

Sports has its own multi dimensional view like Performance , Profession , Business, and Entertainment. It is a combination of Psychological and Sociological activity. Sports core objective is to develop and maintain wellbeing. The purpose of the study was to make a comparative analyze of Stress as a function of age and levels of sports participation as a function of age group 18 -19, 20 to 22 and 23 to 25 years and levels of participation District, State and National. Statistical techniques used to analyze the level of Stress of sportswomen of different levels and different age groups in this study are: 3 x 3 factorial design, Scheffe's post hoc test for factor A and B. It was concluded that there was no significant difference among sports women of different levels and of different age groups on Stress as a function of age and levels of participation.

KEYWORDS: Sports, Athletes, Stress.

INTRODUCTION

Sports is a psycho-social activity. It has both psychological and social dimensions, besides, physical, physiological and technical aspects. The main objective of sports is to develop physical mental health and to integrate or to bring about psycho-social aspects to promote national and international, social and cultural integration and peace.

Stress

Many times, "the stress of competition may cause a negative anxiety in one performer but positive excitement in another". That is why one frequently hears how elite players' thrive under pressure, when most others would crumble. Stress can be defined as a physical, mental or emotional demand, which tends to disturb the homeostasis of the body. Used rather loosely, the term may relate to any kind of pressure, be it due to one's job, schoolwork, marriage, illness or death of a loved one. The aim of the study was to make a comparative analyze of Stress as a function of age and levels of sports participation as a function of age group 18 -19, 20 to 22 and 23 to 25 years and levels of participation District, State and National.

OBJECTIVES OF THE STUDY

The following would be the objectives of this study.

- 1) To analyse the Stress level status of the district, state and national level of players.
- 2) To analyse the Stress level status in three distinct different age groups of 18 to 19, 20 to 22 and 23 to 25 years.

STATEMENT OF THE PROBLEM

The purpose of the study was to analyze the Stress level as a function of age and levels of Sports participation.

HYPOTHESES

It was hypothesized that : There would not be any significant differences in stress among sportswomen of district, state and national players in age groups of 18 to 19, 20 to 22 and 23 to 25 years.

SIGNIFICANCE OF THE STUDY

In the recent years, a great deal of attention has been paid to compare the variations in the behaviourism, humanism and cognitivism man on his/her psychological factors. Further, there seemed to have differences among athletes of different levels belonging to different ages. As this study is aimed at making analyse of Stress level as a function of age and levels of participation, the study is significant in the following ways:

1. The present study would acquaint the physical education administrators with the Stress level factors such as stress, among different ages at different levels of sports participations.
2. It would facilitate to find out the differences among the different age groups of players on Stress level factors.
3. It would facilitate to find out the differences among sportswomen of different levels of sports participation on factors.

4. The results of the study would add further knowledge to the existing literature of Stress level factors.

5. The findings of the study would provide a guideline to the future research investigators in psychology, sports psychology and sports sciences to conduct further research in this field.

SELECTION OF SUBJECTS

To facilitate the study sixty district level sports women -20 in the age group of 18 -19, 20 in the age group of 20 to 22 and 20 in the age group of 23 to 25 years. Similarly sixty state level sports women and sixty national level sports women were selected for this study

RESEARCH DESIGN

Independent randomized research design was used for this study, as the subjects were selected randomly from 3 x 3 independent groups. The objective of undertaking this research was to assess the Stress level as a function of age and levels of participation to find out the differences among the selected sportswomen. Since the research is aimed at determining the differences between the variables of different levels of players (3 levels) and different age groups (3 groups) 3 x 3 Factorial design was followed for this study.

Criterion Measure

To measure stress Everly and Girdano' Questionnaire on Stress Scale was used.

Results

The results on comparative analysis of stress as a function of age, analysed with reference to three age groups and levels, analysed of thee levels, district, state and national participation. as statistically analysed through 3 x 3 factorial analysis of variance was presented in Table I

TABLE I
DESCRIPTIVE STATISTICS CONTAINING MEAN, STANDARD DEVIATION ON
STRESS AMONG WOMEN PLAYERS OF DIFFERENT AGE GROUPS OF
DIFFERENT LEVELS

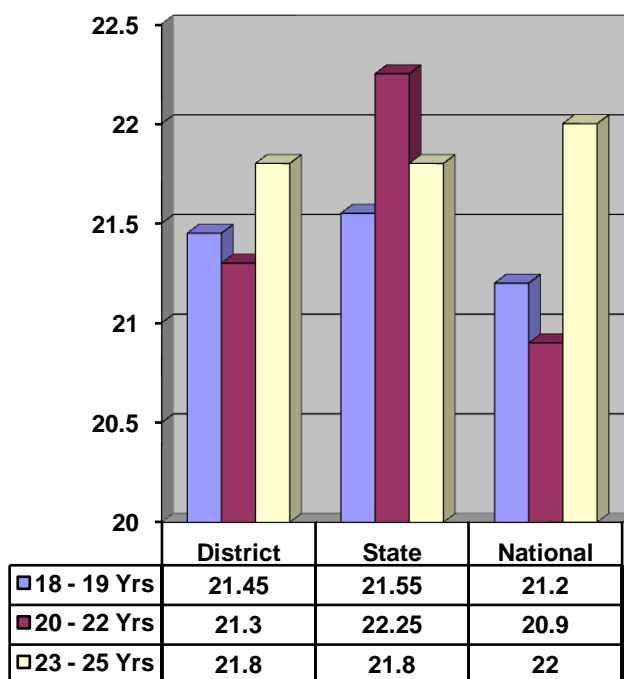
Levels	Age Groups	M	SD	N
District	18 – 19 Years	21.45	6.362	20
	20 – 22 Years	21.30	5.555	20
	23 – 25 Years	21.80	3.548	20
	Average	21.52	5.203	60
State	18 – 19 Years	21.55	3.069	20
	20 – 22 Years	22.25	4.908	20
	23 – 25 Years	21.80	4.324	20
	Average	21.87	4.111	60
National	18 – 19 Years	21.20	4.948	20
	20 – 22 Years	20.90	4.723	20

Total	23 – 25 Years	22.00	3.372	20
	Average	21.37	4.353	60
	18 – 19 Years	21.40	4.896	60
	20 – 22 Years	21.48	5.020	60
	23 – 25 Years	21.87	3.707	60
	Average	21.58	4.559	180

Table I shows the obtained mean values on psycho-sociological variable, stress. As shown in the table I the District level women players in the age group of 18 to 19 years stress mean value was 21.45 with standard deviation ± 6.362 , 20-22 year group stress was 21.30 with standard deviation ± 5.555 , 23 – 25 year age group stress was 21.80 with standard deviation ± 3.548 . Thus, taking into consideration all the three age groups of women players at district level was 21.52 with standard deviation ± 5.203 .

Thus, the results in table I proved that there existed mean differences among different age groups of different levels of players. The mean values on stress of the women players of different age groups are shown in Figure 1.

Mean Values of Different Age groups of Women Players of District, State and National levels in Stress



To test the significance in differences, the investigator subjected the data collected by using 3 x 3 factorial (design) analysis of variance and the obtained results on stress were presented in table II

TABLE II
3 X 3 FACTORIAL ANALYSIS OF VARIANCE FOR STRESS OF WOMEN PLAYERS
OF DIFFERENT AGE GROUPS (SCORES IN NUMBERS)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	
Model	83879.750	9	9319.972	431.755	0.000	
Factor A	7.900	2	3.950	0.183	0.833	
Factor B	7.433	2	3.717	0.172	0.842	
Factor A * B	13.167	4	3.292	0.152	0.962	
Error	3691.250	171	21.586			
Total	87571.000	180				

Table values df (2,168) (0.05) = 3.07, df (3,168) (0.5) =2.68, df (6,168) = 2.18

*Significant at 0.05 level of confidence.

CONCLUSION

It was concluded that there was no significant difference among sports women of different levels, namely, district, state and national levels (Factor A, P=0.833) and of different age groups, namely, 18 to 19, 20 to 22 and 23 to 25 years (Factor B, P=0.842) on psychological variables stress and the results proved that psychological function, stress as a function of age and levels of participation (interaction effects) was not significant (P=0.962).

RECOMMENDATIONS

The findings of this study proved that there was difference among different levels of players of different age groups on psychological and sociological variables, achievement motivation, self confidence, team cohesion and leadership as a function of age and levels of participations. Since significant differences were recorded on psychological and sociological variables among the women players, it was recommended that when selecting players, the findings of this study may be taken into consideration by the Physical Education teachers, Sports Managers and Coaches to select the players.

Efforts may be taken to give coaching facilities with psychological preparations right from district level players and at their early age of participation so that the players could achieve better right from district level competitions.

REFERENCES

1. **Ayajit Singh (1996)**, Sports Psychology, Delhi : Friends Publications, P. 16
2. **McEwen, Bruce (1990)**. **Stress and Performance in Sport**. New York: John Wiley and Sons, 1990.
3. **Kamlesh, M.L. (1983)**, Psychology of Physical Education and Sports, New Delhi: Metropolitan Book company, Pvt Ltd., P. 38.

4. **Lane, A.M. and Terry, P.C. (2000)** “The nature of mood: Development of a conceptual model with a focus on depression”. Journal of Applied Sport Psychology 12, 16-33
5. **Larun L et.al. (2006)**, “Exercise in prevention And Treatment of Anxiety And Depression Among Children And Young People”, Cochrane Database Syst Rev. PP 19;3



ADAPTED RECREATIONAL GAMES FOR CHILDREN WITH VISUAL IMPAIRMENT

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ABSTRACT

This article is about the availability of various adapted Recreational Games for Children with Visual Impairment, and also it gives the importance and need of leisure time activities for children with visual impairment also tried to explore the different types of games and sports available for children with visual impairment. Visual impairment, it includes both the total blindness and low vision. The purpose is to transfer all the discs from the peg to another without allowing any disc to be placed over a smaller one it is more useful for pre primary children will help the to develop eye hand coordination, to identify difference in texture nd etc. They also have right to participate in these activities. The parents, well-wishers and others should encourage the visually impaired to participate in many games and in the recreational activities, also it is the responsibility of the media to propagate this message among the public. Through sports activities we can create inclusive communities. Also it will strengthen the sportiveness. The recreational games will develop not only the sportiveness also the physical and emotional development. But the participation in recreation, leisure and sports is very less comparatively with normal students due to unavailability or lack of personnel properly trained in teaching adapted games to children with visual impairment.

KEYWORDS: Adapted, Visual Impairments, Recreation

INTRODUCTION

As like culture and art, recreation, leisure and sports activities play an important role in the life of all children also it is equally important to children with visual impairment also. It will help to improve their health, wellbeing, and it will contribute for their empowerment. Through sports activities we can create inclusive communities. Also it will strengthen the sportiveness. The recreational games will develop not only the sportiveness also the physical and emotional development. But the participation in recreation, leisure and sports is very less comparatively with normal students due to unavailability or lack of personnel properly trained in teaching adapted games to children with visual impairment.

Convention on the Rights of Persons with Disabilities, Article 30, paragraph 5: Participation in cultural life, recreation, leisure and sport states that,

Enabling persons with disabilities to participate on an ongoing basis with others in recreational, leisure and sporting activities, States Parties shall take appropriate measures to a) encourage and promote the participation, to the fullest extent possible, of persons with disabilities in mainstream sporting activities at all levels; b) have an opportunity to organize, develop and participate in disability-specific sporting and recreational activities; c) have access to sporting, recreational and tourism venues; d) ensure that children with disabilities have equal access with other children to participation in play, recreation and leisure and sporting activities; e) have access to services from those involved in the organization of recreational, tourism, leisure and sporting activities.

The Specific reasons for involving visually impaired in participating in recreational activities are:

During summer time or in vacation children will enjoy their leisure time at park, going to campaign, learn new games and they will have many adventures. But the children with visual impairment are often left out. The following reasons will clear why it is so important in involve these children in relational activities.

Physical Strength: The children with visual impairment rarely get opportunity to do exercise. Exercising is important to stay healthy hence it is essential to involve them in the recreational activities also it will develop the physical strength of the students.

Opportunity for Learning: The Children with Visual impairment does not know how to play and participate in recreational activities. They were never taught or not having exposure about the availability of adapted recreational games, and how to play will help them to have an opportunity to learn various interesting games.

Understanding Their Preference Or Choice: After learning different games it will help them children to understand their preference or choice and to decide their interest in particular games.

Social Gathering: It will help them to develop friendship and start friendship and to have a new friends circle.

Self Respect: The children with visual impaired also need to treat as like other pear group. They are also talented and they expect to have equal opportunity to participate in recreational activities which will lead them to prove their capability, and to improve their self esteem and respect.

Different Types of Recreational Games Available for Children with Visual Impairment:

Playing Cards

Available better-quality of standard playing cards with the Braille dots punched at the top of the left corner. Even we can provide the punched (Holes) to identify the number from one to thirteen (ace to King) and don't punch in the joker card it is for them to identify the joker card which is cost effective.

Chess

A modified wooden board with the black squares embossed and all the squares drilled in the centre to fix pegged chessmen. Holes are provided at each end to have extra pieces. The pieces are of uniform height, the white having a point at the top to distinguish them from the black. Because of the contrast (White and black) it is useful for both totally blind person and for the persons with low vision.

Dominoes

It is made out of plastic and having raised black dots on a white background with black inset pieces on the reverse. These dominoes are perfect for both totally blind players with low vision.

Brahma Puzzle

This puzzle consists of three pegs on a wooden base and eight discs of different diameter each with a hole in the center. The purpose is to transfer all the discs from the peg to another without allowing any disc to be placed over a smaller one it is more useful for pre primary children will help the to develop eye hand coordination, to identify difference in texture and etc.

Sound Ball

It is made out of strong good quality rubber in which holes have been punched. Small metal balls are inserted for creating sound enabling the ball to be located when in play. An

Ordinary good quality ball of plastic of 5 Cms radius can be converted into a sound ball by drilling a hole, putting small size pebbles and then sealing the hole using the soldering rod. This ball can be used for playing cricket. It is manufactured by the National Institute for the Visually Handicapped, Dehradun is the most suitable.

Draught Board

A wooden board with sunken playing squares. The colours of the men are distinguished by size. Pieces of double thickness are used as kings.

Football, Basket Ball and Soccer Ball

These balls are made with a small electronic beeper which is battery operated and produces sound. The beeper is held within a molded cavity designed for easy access to 'on & off' switch. It is available in V. R. Vardhans International, at Delhi.

Cricket

It is a very popular game in India. It has the standard rules. It can be played using the audible plastic balls.

Swimming

Now a days it is a emerging popular sport among visually impaired persons. The normal swimming pool with sound indicators on the sides can be used for training them in swimming.

Athletics

For Athletics the normal track was modified with safety measures and it can be used for training the visually impaired in race, shot put, javelin throw, bag-walk, musical chair, hit the target etc.

Table Tennis

It is also a popular in-door game for the visually impaired in many South-East countries. The normal table tennis table with some modifications in the net and the sides can be used for the purpose.

CONCLUSION

The participation in recreation, leisure and sports activities may be one of the opportunities of children with visual impairments have to engage in community life beyond their immediate families. They also have right to participate in these activities. The parents, well-wishers and others should encourage the visually impaired to participate in many games and in the recreational activities, also it is the responsibility of the media to propagate this message among the public.

REFERENCE:

1. *Aids & Materials for the Visually impaired*, Wayne: SIFB Products, (Fall, 1979), P. 48
2. American Foundation for the Blind (1989): *Products for People with Vision Problems*, New York: American Foundation for the Blind, P. 22
3. *Braille Equipment for the Blind*, 1999 Catalogue, Sweden:Index Braille, P. 16



EFFECT OF YOGIC PRACTICES ON SELECTED PHYSIOLOGICAL VARIABLES AMONG POSTPARTUM WOMEN

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ABSTRACT

The Purpose of the study was to find out the effect of yogic practices on selected physiological variables among postpartum women. To facilitate the study twenty postpartum women from govt. hospital from bangarupalyam in chittoor district were randomly selected as subjects and their age group was between 25to35 years. They were assigned into two groups of which one group served as yogic practices group and other group served as control group. The study was formulated as a true random groups design, consisting of pre-test and post-test .The subject (n=20) were randomly assigned to two groups of ten postpartum women in each. The groups were assigned as experimental group and control group respectively. Pre-test were conducted for all the subjects on selected physiological variables, namely mean arterial blood pressure and resting heart rate. The experimental groups underwent initial learning practices for a period of one week followed by respective yogic practices for a period of twelve weeks. The post-test were conducted on the above said dependent variables after a period of yogic practices. The difference between initial and final scores was considered as the effect of yogic practices. To collect and analyse the data dependent "t" Test was used. The results of the study proved that selected yogic practices significantly improved overall health and fitness of postpartum women, as assessed through physiological variables selected for the study.

KEYWORDS: Mean Arterial Blood pressure, Resting Heart Rate, Postpartum women.

INTRODUCTION

Postpartum women who constantly feel the threat of external stressors don't give their systems a chance to return to normal. Their adrenal glands become exhausted from constantly pumping adrenaline into the system; the digestive and immune systems remain sluggish. A consistent yoga practice goes a long way toward mitigating the effects of the fight-or-flight response by giving the body the opportunity to rest completely.

B.K.S. Iyengar, master of yoga's therapeutic applications, explains the benefits of yoga by means of what he calls its "squeezing and soaking" actions. He contends that through the process of squeezing out the old, stale blood or lymphatic fluids and soaking the area with fresh, oxygenated blood or fluids, yoga helps the body to utilize the nutrients it needs. A consistent yoga practice can give us confidence and stability as we move through the world. Yoga can improve posture and coordination, strengthen muscles, increase flexibility, and create balance. (Iyengar, 1992).

STATEMENT OF THE PROBLEM

The purpose of this study is to find out the effect of yogic practices on selected physiological variables among postpartum Women.

OBJECTIVE OF THE STUDY

Objective of the study was to find out whether there would be any significant difference on physiological variables among postpartum women due to yogic practices.

HYPOTHESIS

It was hypothesized that there would be a significant improvement on selected physiological variables due to yogic practices and pranayama among postpartum women.

REVIEW OF RELATED LITERATURE

Sharma G et al. (2014) a study to find out the effect of exercise program after delivery had a comparable reduction in diastasis recti as those who started the program during their pregnancy. A retrospective analysis was done of 63 women who trained prenatal or postnatal, engaging in isometric contractions of the transverse abdominals, resistance training, and cardiovascular exercise, with the same certified postnatal trainer. Both the prenatal and postnatal groups showed significant improvement ($P < .05$) in the reduction of postnatal rectus abdominal muscle separation. There was no significant difference in the final absolute separation measurement of the two groups. Women who started after delivery an exercise program aimed at reducing diastasis recti achieved the same reduction in diastasis recti as those who started the program during pregnancy.

MohammadiF et al. (2014) determined the effectiveness of home-based low-intensity stretching and breathing exercises on the reduction of 1 and 2 month post-partum depression (primary outcome) and fatigue (secondary outcome) scores. This study did not provide evidence to show that training women to do the home-based exercises during pregnancy or during pregnancy and post-partum period have a preventive effect on post-partum depression and fatigue.

METHODOLOGY

To facilitate the study twenty postpartum women from govt. hospital from bangarupalyam in chittoor district were randomly selected as subjects under the supervision of medically qualified and experienced obstetrician and gynaecologist. All subjects filled in an Informed Consent Form to participate voluntarily in the investigation with an age group of 25 to 35 years. They were assigned into two groups of which one group served as yogic practices and pranayama group and other group served as control group. The study was formulated as a true random groups design, consisting of pre-test and post-test. The subject (n=20) were randomly assigned to two groups of ten postpartum women in each.

The groups were assigned as experimental group I and control group II respectively. Pre-test were conducted for all the subjects on selected physiological variables, namely mean arterial blood pressure and resting heart rate. The experimental groups underwent initial learning practices for a period of one week followed by respective yogic practices and pranayama for a period of twelve weeks for 30 minutes and 3 minutes of rest in between. To collect and analyse the data dependent "t" Test was used.

RESULTS AND DISCUSSIONS

TABLE-I
ANALYSIS OF 'T' RATIO FOR THE PRE AND POST TEST OF CONTROL AND
EXPERIMENTAL GROUP ON MEAN ARTERIAL BLOOD PRESSURE AND
RESTING HEART RATE

Variable	Groups	Mean		SD		df	't' ratio
		Pre	Post	Pre	Post		
Mean Arterial Blood Pressure	Control	84.40	84.70	10.83	10.47	28	0.44
	Experimental	79.50	77.70	4.82	4.75		5.93*
Resting Heart Rate	Control	99.90	99.95	1.93	2.08	28	0.37
	Experimental	99.70	98.84	2.25	2.06		5.76*

*Significance at 0.05 level of confidence for 2 and 28 (df) = 2.10.

To find out difference between experimental and control group on meal arterial blood pressure difference in two group's t-ratio was employed and the level of significance was set at level 0.05. Experimental group pre and post-test mean value were 79.50, 77.70 respectively. In Control group pre and post-test were mean value was 84.40, 84.70 respectively. In experimental the obtained t-ratio was 5.93 greater than the table value 2.10 at 0.05 level of confidence, so it found to be significant. In control group the obtained t-ratio 0.44 was lesser than the table value 2.10 so it was found to be insignificant.

To find out difference between experimental and control group on resting heart rate difference in two group's t-ratio was employed and the level of significance was set at level 0.05. Experimental group pre and post-test mean value were 99.70, 98.84 respectively. In Control group pre and post-test were mean value was 99.90, 99.95 respectively. In experimental the obtained t-ratio was 5.76 greater than the table value 2.10 at 0.05 level of confidence, so it found to be significant. In control group the obtained t-ratio 0.37 was lesser than the table value 2.10 so it was found to be insignificant

CONCLUSION

1. It was concluded that there was significant improvement on mean arterial blood pressure due to yogic practices and pranayama among postpartum women.
2. It was concluded that there was significant improvement on Resting heart rate due to yogic practices and pranayama among postpartum women

REFERENCES

- Benjamin DR et al. (2014), "Effects of exercise on diastasis of the rectus abdominis muscle in the antenatal and postnatal periods: a systematic review." *Physiotherapy*. 2014 Mar;100(1):1-8.
- Hale RW, Milne L. (1996) The elite athlete and exercise in pregnancy. *Semin Perinatol* 1996;20:277-284
- Iyengar, BKS (1998), Iyengar, B.K.S. (1999). *The Gift of Yoga*, Harpers Collins Publications India Pvt Ltd., New Delhi.
- Koltyn KF, Schultes SS (1997). Psychological effects of an aerobic exercise session and a rest session following pregnancy. *J Sports Med Phys Fitness* 1997;37:287-291
- Mohammadi F et al. (2014), "The effect of a home-based exercise intervention on postnatal depression and fatigue: A randomized controlled trial.", *Int J Nurs Pract*. 2014 Mar 12
- Sharma G et al. (2014), "Postnatal exercise can reverse diastasis recti.", *Obstet Gynecol*. 2014 May;123 Suppl 1:17.



COMPARISON OF SELECTED PHYSIOLOGICAL AND GAME RELATED PHYSICAL FITNESS VARIABLES OF RUNNER AND CHASER OF KHO-KHO

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ABSTRACT

The purpose of this study was to compare the selected physiological and game related physical fitness variables between runner and chaser of kho-kho. A sample of 30 kho-kho players (15 chasers and 15 runners) were selected through purposive sampling technique from Government Girls Higher Secondary School, Erode. Speed was tested by using 30 mts run. Agility was tested by right Boomerang run test. Resting pulse rate was measured by counting the pulse per minute, Systolic Blood pressure was measured by Sphygmomanometer. Collected data were analysed by computing the 't' test to see the significant mean difference between the runner and chaser on physiological and game related physical fitness variables. The results indicated that there were insignificant differences with regard to physiological and game related variables i.e. speed, agility, resting pulse rate and systolic blood pressure between chaser and runner of kho-kho. The outcome of the study might help physical educators and coaches to evaluate and modify the training programs pertaining to the physiological and game related physical fitness components.

KEYWORDS: *Speed, Agility, Resting Pulse Rate And Systolic Blood Pressure*

INTRODUCTION

The games and sports have been indispensable to mankind, and have become part of the culture. The games and sports are a great unifying force and have tremendous effect on the national and international integration. Through the origin of sports is lost in antiquity, it is quite certain that physical activity has been a part of the life of even primitive men. For him it might have been a basic necessity of life, more than fun and diversion, for his survival depended on it. Hunting, fishing, hurling missiles were activities on which his survival depended. Gradually along with the process of evolution, such activities became more of play and became part of the culture of the tribes. People use sports and games as a mode of transmitting the cultural heritage of their tribes. Games sports and physical activities persisted despite the rise and fall of ancient civilizations and became strongly embedded in the history of civilization as a culture heritage, which was passed on from one generation to another. Today, games and sports have emerged as universal cultural phenomena.

The game kho-kho can broadly be followed by resolving the basic skills and techniques of chase and skills and techniques of running away and dodging the chasers and not allowing any one of the chaser touch the runner or apparels worn by the runner.

The present study was to compare selected physiological and game related physical fitness variables between runner and chaser of Kho-Kho.

HYPOTHESIS

On the basis of available literature and the researcher's own knowledge, about the problem, it is hypothesized that there will be significant difference in physiological and game related physical fitness variables of offensive and defensive Kho-Kho Players.

METHODOLOGY

The purpose of the study was to compare selected physiological and game related physical fitness variables between women chasers and runners in the game of Kho-Kho. To achieve this purpose of the study, 30 women kho-kho players were selected from Government Girls Higher Secondary School, Erode district. Among them 15 chasers and 15 runners were selected. The speed, agility, resting pulse rate and systolic blood pressure were selected as dependent variables for this study.

The following tools and techniques were used to collect the data:

S.No	Variable	Tools and Technique
1.	Speed	30 mts run
2.	Agility	Boomerang run test
3.	Resting Pulse Rate	counting the pulse per minute
4.	Systolic Blood Pressure	Sphygmomanometer

The 't' ratio was used to analyze the significant differences between chasers and runners separately for each criterion variable. The .05 level of confidence was fixed to test the level of significance.

RESULTS AND DISCUSSION

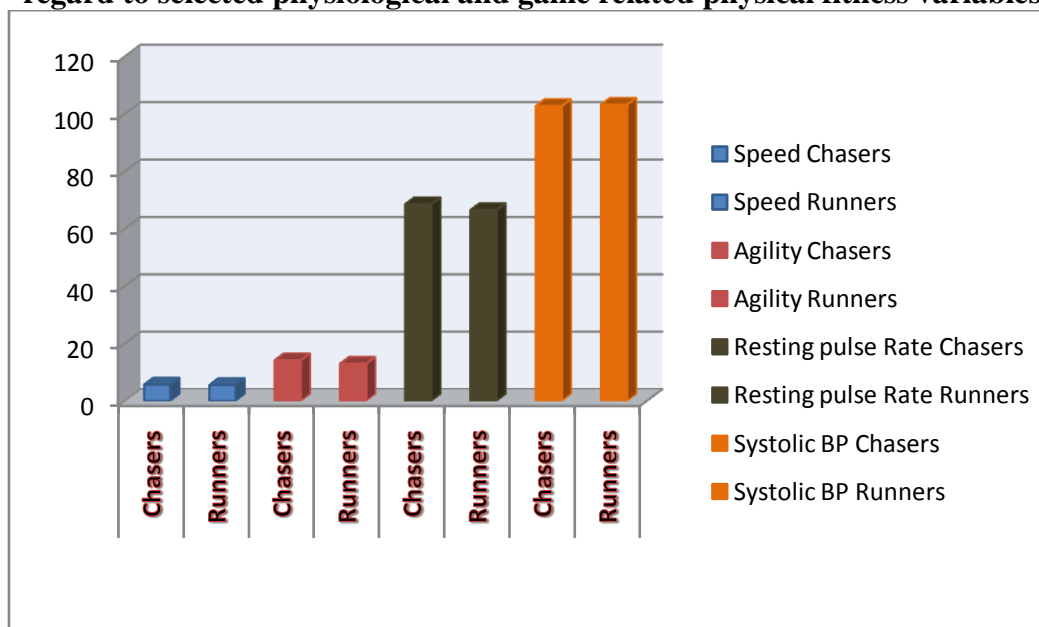
Results: The results with regard to physiological and game related variables i.e speed, agility, resting pulse rate and systolic blood pressure has been presented in table below:

TABLE: THE MEAN, STANDARD DEVIATION AND 'T' RATIO VALUES BETWEEN COLLEGE WOMEN CHASERS AND RUNNERS

Variables	Groups	Mean	SD	The obtained 't' ratio	Tabulated t value
Speed	Chasers	5.69	0.49	0.56	2.05
	Runners	5.56	0.67		
Agility	Chasers	14.19	2.91	1.62	2.05
	Runners	12.95	.052		
Resting pulse Rate	Chasers	68.54	4.04	2.28	3.18
	Runners	66.50	4.43		
Systolic BP	Chasers	102.76	10.31	0.235	3.18
	Runners	103.22	9.20		

The above table shows that obtained t ratio were lower than tabulated t value at 0.05 levels. Therefore it reveals that there was no significance differences were found on selected physiological and game related physical fitness variables variables i.e speed, agility, resting pulse rate and systolic blood pressure between chasers and runners in the game of Kho-Kho.

Graphical representation of mean scores between chaser and runner of kho-kho with regard to selected physiological and game related physical fitness variables



DISCUSSION: It is evident from above findings that insignificant differences were found with regard to selected physiological and game related physical fitness variables i.e speed, agility, resting pulse rate and systolic blood pressure between runner and chaser of kho-kho. The outcome of the result might be due to nature of game in which runners as well as chasers have to interchange their role during the match.

CONCLUSION

It is concluded that runner and chasers were found almost similar on all the selected physiological and game related physical fitness variables i.e. speed, agility, resting pulse rate and systolic blood pressure.

REFERENCES

1. Sharma M.P., Physical and physiological variable as predictor of kho-kho performance, Unpublished Doctoral Thesis, Gwalior: LNIPE (2004)
2. Singh Bhupinder and Sonia., Biomotor Abilities between Runner and Chaser of Kho-Kho: A comparative study, Research Journal of Physical Education Sciences, vol 2(9), September (2014)
3. www.isca.in



MOTIVATION FOR MATHEMATICS ADOPTED IN HR. SEC. EDUCATION

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ABSTRACT

This work presents the results of the survey that was carried out in schools of Thanjavur. The aim of the survey was to analyse what factors encouraged the higher secondary students to choose a Mathematics curriculum, how much this choice was influenced by counselling at secondary schools, what aspirations for further studies higher secondary students had and whether the students were satisfied with their studies at a Maths curriculum adaptation. This decision should be taken at a school. However, the analysis of the students' answers has revealed that the lessons on Maths education (information) and other activities connected with a profession choice were organized quite inefficiently. A bigger part of the students of Maths curriculum adopted schools would like to continue their studies after finishing the school has been confirmed. However, it cannot be claimed that the city residents would like to continue their studies more than these from the country. On the one hand, the choice might be influenced not by a certain vocation but search for social assistance. But on the other hand, a particular choice might be limited by smaller possibilities to continue studies at a higher school, and ambition to acquire a higher social status. This article will try to answer these questions.

KEYWORDS: Curriculum, Inefficiently, Complicates, Prestige,

INTRODUCTION

The prestige of the Maths based education training in Thanjavur is not sufficient. The part of the higher secondary students who choose Maths based education schools in Thanjavur is less than the other places average. What factors influence such a small number of candidates to Maths curriculum adopted schools? Is it the school prestige, student motivation or other reasons?

The makers of the education policy note that these who choose Maths curriculum adopted schools do not usually consider the demand of particular professions, which puts the market out of balance and complicates the development of the country's economy. On the one hand, the choice might be influenced not by a certain vocation but search for social assistance. But on the other hand, a particular choice might be limited by smaller possibilities to continue studies at a higher school, and ambition to acquire a higher social status. This article will try to answer these questions.

The Research Objective is to analyse the motives of higher secondary students to study at Maths curriculum adopted schools and their plans for further studies.

The Research Tasks

1. to determine the motives that encourage higher secondary students to choose a Maths curriculum adopted schools;
2. to find out what influence Maths counselling had on the choice of the profession;
3. to distinguish positive and negative differences that students see between their studies at a secondary and Maths curriculum adopted schools;
4. To estimate what students are going to do after finishing the Maths curriculum adopted schools and the graduates' plans for their further studies.

A desire to acquire a profession as soon as possible and start working is related to a good choice of the profession and becoming independent as soon as possible. This desire is also related to financial problems.

It is interesting to note that the motive of becoming independent is related to the students' friends who study at a Maths curriculum adopted schools. It can be explained by the fact that a part of those who enter a Maths curriculum adopted schools start living separately from their parents – at a hostel, at their relatives, or rent a flat. They also get a scholarship. Thus the higher secondary students become less dependent on their parents and can spend more time with their friends

(I wanted to become independent faster- 0,276; I like my chosen profession- 0,303; We can't afford paying for my studies at a higher school- 0,260)

The image of a Maths curriculum adopted schools is closely related to the teachers who work there and the respondents' friends who study at this (it is more interesting to study than at a secondary school- 0,247, I knew that good teachers worked in this school- 0,388, My friends study here so I wanted to be together with them 0,267). We can believe that the biggest influence to the image of a Maths curriculum adopted schools is made by the friends' stories about their teachers, subjects and trained professions.

The students believe that it is more interesting and useful to study at a Maths curriculum adopted schools as both secondary education and a particular profession is acquired at the same time..

Summing up the results of the correlative analysis, we can distinguish the main motives and line them up in the following sequence:

- Poor learning results and bad behaviour at school,
- Material reasons,
- Advice of adults,
- Quicker way to become independent,
- Other circumstances (friends, the image of the Maths curriculum adopted schools).

While assessing the choices made by male and female students, it was noticed that the male students' answers were higher and more statistically meaningful while choosing the statements: „It was recommended by the teachers; the school is close to my home, my friends study here so I wanted to study together with them; my marks at school were poor“ whereas more female students tended to choose the statements: „I wanted to study somewhere; I did not enter the university or college; we cannot afford paying for my studies at a higher school“.

Analysing the statistical ratios, it is obvious that the boys' choice was more influenced by other people advice and recommendations. The boys' motivation to study at a Maths curriculum adopted schools is weaker than that of the girls who chose the Maths curriculum adopted schools because they wanted to study and their families could not afford paying for their studies at a higher school..

In order to support or deny the opinion that the Maths curriculum adopted schools are chosen by the students whose results are poorer, we asked the students to remember what average marks they had at secondary/main school. The analysis of the average marks shows that the average marks of the students of different levels vary only slightly but the average marks of the students of higher levels were higher at a secondary/main school.

According to Pukelis and Garnienė (2003), Maths curriculum adopted schools should be chosen by the students who are decided about the character of their abilities and further direction of their professional career after trying out different spheres and kinds of activities. This decision should be taken at a school. However, the analysis of the students' answers has revealed that the lessons on Maths education (information) and other activities connected with a profession choice were organized quite inefficiently.

Only 22,4% of respondents had lessons on profession choice at a secondary/main school. 69% are satisfied with their studies at a Maths curriculum adopted schools. 49,2% of respondents have answered that they had no lessons on profession (only 52,3% of them like their studies at a Maths curriculum adopted schools).

It can be supposed that the students come to Maths curriculum adopted schools not having been provided with knowledge about the services supplied by the schools, and not quite understanding their choice.

According to Arends (1998, students who have a strong need to communicate study better. Lower results are usually shown by these whose need of communication is not very big. If students are not very communicative, they are more successful with more reserved teachers, and the students with a stronger need for authority try harder, if they are encouraged.

In order to evaluate the communication of Maths curriculum adopted schools students with their group mates, 7 statements were presented as one of the strongest motives of motivation. A bigger half of the respondents of all levels indicated that the group where they study was friendly.

Having analysed the answers given by male and female students, several statistically meaningful differences were noticed. More girls say that they have more than one friend in a group, or would like to have more friends, while the boys tend to claim that their group is friendly and that in principle it is not important to have close friends from their school.

The learning motivation is also influenced by the study environment. Therefore, we asked to evaluate if the school where the respondents study was cosy.

Arends (1998) indicates that an efficient study environment has the following peculiarities:

- General atmosphere where students trust themselves, their peers and group,
- Structures and processes when the students' communicative needs are satisfied, when they communicate with their teachers and other students,
- Environment where students acquire necessary group and inter-personal communication skills so that they can fulfil different tasks.

A third of all level students characterize their school as cosy, while another third think that there's something missing to be called „cosy“; a forth of students think that their school is not cosy, and the rest do not care about the cosiness of their school.

Analysing the male and female students' answers about their school, several statistically important differences were noticed. The girls tend to call their school cosy, try to decorate it and state that students can join different clubs at school, whereas the boys note that the teachers are bad.

Being asked to indicate several positive features why it is worth to study at a Maths curriculum adopted schools comparing to the main/secondary school, the students marked may different reasons.

These reasons were grouped and the following main positive features of a Maths curriculum adopted schools were distinguished:

- opportunity to acquire both secondary education and profession
- easier, more fun, more interesting, studies
- a scholarship,
- better, more understanding, attentive and friendlier teachers
- opportunity to become independent quicker,
- having more free time

Being asked to indicate negative features why it is worse to study at a Maths curriculum adopted schools the students were active and distinguished even more features.

The analysis and grouping the students' answers has shown that it is worse to study at a Maths curriculum adopted schools because of:

- Bad image of Maths curriculum adopted schools, negative public opinion towards them

- Big load of studies,
- Poor study environment ,
- Students are noisy, bad discipline, lack of general order and culture.

Judging from the answers we can suppose that the students were open and sincere while answering the questions. It was also noticed that a part of student had evaluated the same features as positive whereas the others as negative ones (too easy to study, big load).

We are glad to note that notwithstanding the enumerated negative features, the bigger part of students express a strong positive opinion stating that they like to study at a Maths curriculum adopted schools..

After finishing the Maths curriculum adopted schools the majority of students would like to work according to their profession - 42,1% students of all levels (48,5% - the first level and 40,4% of the second).

A third of all students would like to work and study: especially the respondents of the second (38,2%) and fourth (34,6%) levels. Over a third of students would like to continue their studies at a college. 25,2% students of the first level, 23,5% of the second, 24% of the third and 17,3% of the fourth level are considering an opportunity to go abroad. The largest per cent of the second level students (44,1%) would like to work wherever they could find a job. A third of the fourth level students want to continue their studies at a university. The smallest part are thinking of starting their own business and continuing studies at a higher level of a Maths curriculum adopted schools.

About half of the students of Maths curriculum adopted schools (56,3%) would like to continue their studies at a college or university, a higher level of a Maths curriculum adopted schools, or both work and study.

33,9% of higher secondary students would like to start working right after finishing their studies at a Maths curriculum adopted schools.

The implication of the Chi Square has showed that students under 20 are more eager to continue their studies after finishing Maths curriculum adopted schools than older students.

The survey has also revealed that girls are more enthusiastic to continue their studies than the boys: 63,1% of girls, and 47,1% of boys. 27,7% of girls and even 42,4%.of boys would like to start their professional career right after finishing the Maths curriculum adopted schools .

CONCLUSIONS

The average mark of the students who enter the higher level of a Maths curriculum adopted schools is higher than that of those who enter the lower level has been confirmed. The students who at a high school had lessons on profession choice are more satisfied with their studies at a Maths curriculum adopted schools has been confirmed. A bigger part of the students of Maths curriculum adopted schools would like to continue their studies after finishing the school has been confirmed. However, it cannot be claimed that the city residents would like to continue their studies more than these from the country.

REFERENCE

1. Arends R. I. (1998). Mokomės mokytis. Vilnius. Margi raštai
2. Butkienė G., Kepalaitė A. (1996). Mokymasis ir asmenybės brendimas. Vilnius. Margi raštai
3. Dereškevičius P., Rimkevičienė V., Targamadžė V. (2000). Mokyklos nelankymo priežastys. Vilnius. Žuvėdra
4. Dornyei Z. (2001) Teaching and Researching Motivation. Pearson education limited.
5. Gage N., Berliner D.C. (1994). Pedagoginė psichologija. Vilnius. Alna Litera
6. Juška A. (1997). Paauglių teigiamo požiūrio į mokymąsi ugdymas. Kaunas. Šviesa
7. Kardelis K. (2002) Mokslinių tyrimų metodologija ir metodai. Kaunas: Judex leidykla



A STUDY ON ENERGY BALANCE AND NUTRIENT INTAKE OF WATER SPORTS PLAYERS OF SPECIAL AREA GAMES CENTRE, ALLEPPEY, KERALA OF SPORTS AUTHORITY OF INDIA

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ABSTRACT

The majority of studies available on rowing generally focus on the biomechanics and performance aspects of the sport rather than on energy requirements. "A varied diet that meets energy needs will generally provide protein in excess of requirements. Muscle mass is maintained or increased at these protein intakes, and the timing of eating carbohydrate and protein may affect the training adaptation". Players were asked to record their entire food intake carefully. The nutrient intake was calculated by using Nutritive Software Count What you eat by National Institute for Nutrition for dietary assessment. The aim of the current study was to simultaneously quantify Energy intake (EI) which was recorded for three consecutive days-24 hour recall method and Energy Expenditure (EE) which was determined for seven days. Such information is likely of use to practitioners and players who should consider adjusting energy intake accordingly. The mean daily EI and EE data reported here suggest that these water sports players are capable of matching overall energy requirements. Thus, the study focused on the energy balance and nutrient intake of water sports players training at Sports Authority of India (SAI) - Special Area Games (SAG) – Alleppey Centre, Kerala. As previously mentioned, adequate attainment of energy balance becomes an important goal for athletes, because maintaining energy balance with appropriate nutrient intake optimizes exercise performance and the training response.

KEYWORDS: Nutrition, appropriate, simultaneously, requirements, optimizes

INTRODUCTION

Nutrition plays an important role in determining a person's health and physical performance. However, making even relatively minor changes to a person's usual diet can be substantial challenge [4]. Proper nutrition is essential for optimizing athletic performance [2]. This nutrition advice is aimed in those who train and compete at a recreational level, as elite athletes have different nutritional requirements and will require individualized advice. It is really important to eat the right type of foods before and after training sessions to ensure there is the right type of fuel available for the session and to encourage rapid recovery after training [7]. Nutrition plays a key role in managing the demands of training and competition [17].

Rowing requires great power and strength, and uses both the aerobic and anaerobic energy systems [15]. Rowing both involves prolonged training sessions that are typical of an endurance sport [1]. These unique demands have important needs. Kayak athletes sit facing forward in the boat and use a double bladed paddle while Canoe athletes kneel on one knee and use a single bladed paddle, stroking on one side. All distances are fast paced, high intensity events [15].

Rowers have very high energy and carbohydrate requirements to support training loads and meet body weight and strength goals. All rowers need to work hard to recover between training sessions. A high-energy, high-CHO, nutrient-dense diet is required. Some rowers (particularly male heavyweights) struggle with the sheer volume of food they need to consume [13].

Elite power sport athletes have high training intensities and volumes for most of the training season, so energy intake must be sufficient to support recovery and adaptation. Low pre-exercise muscle glycogen reduces high-intensity performance, so daily carbohydrate intake must be emphasized throughout training and competition phases [19]. However, there is very little research detailing the energy requirements or intakes of these sports men and women. Although the energy cost of a 2000-m race generally lasting approximately 6–8 min is only about 200–250 kcal, the energy required for the 1–2 h of daily training is 1000–2000 kcal. However, data outlining daily habitual EE are scarce. The majority of studies available on rowing generally focus on the biomechanics and performance aspects of the sport rather than on energy requirements.

In addition, maintaining energy balance along with adequate nutrient intake optimizes sports performance and overall health [10]. Energy balance is integral for adolescents to sustain optimal growth and development [16, 5], with additional nutritional intake required to offset the increased energy cost of high-level training and competition [11]. Athletes will lose muscle mass and drop or slow their progress without good diet and impeccable timing of food intake.

"A varied diet that meets energy needs will generally provide protein in excess of requirements. Muscle mass is maintained or increased at these protein intakes, and the timing of eating carbohydrate and protein may affect the training adaptation" [8].

Increased physical activity may necessitate higher input of vitamins particularly vitamins C, B2, A and E. But this increased input would come from diet if energy expenditure is met from energy input [7]. A good dietary habit not only ensures health but also brings out your potential that paves the road to victory.

Steen studied the adequacy of dietary intake in 16 female heavyweight rowers during the sprint racing phase of the season. Caloric intake for the rowers was 2,633 kcal/ day, lower than expected given the training regimen of these athletes. However, calcium, zinc, B6, and B12 fell

short of meeting two-thirds of the RDA for a significant percentage of rowers. Adequate fluid intake is also essential.

Rebecca evaluated the energy expenditure (EE) and hence energy requirements of lightweight female rowers and, further, to compare this with their self-reported energy intake (EI). Due to the underreporting of EI, diet recording may not be an appropriate way of assessing energy requirements in lightweight female rowers.

Hill studied the Energy Expenditure (EE) and hence energy requirements of lightweight female rowers and, further compared with their self-reported energy intake (EI). After adjusting total EE for changes in body weight (mean (SD) 1.2 (1.2) kg), the comparison between adjusted EI and reported showed a bias to underreporting of 1133 (1539) kcal·d⁻¹ or 34%. Due to the underreporting of EI, diet recording may not be an appropriate way of assessing energy requirements in lightweight female rowers.

Thus, the purpose of this study was to assess the energy intake and output patterns of water sports players of SAI SAG Alleppey and to evaluate macro and micronutrient intake of water sports players and to compare it with the Recommended Dietary Allowances (RDA) for Sportspersons.

HYPOTHESIS

There will be significant difference between Energy Intake (EI) and the Energy Expenditure (EE).

There will be significant difference between Nutrient intake and Recommended Dietary Allowances (RDA).

OBJECTIVE

The main objective of this study is 1. To assess the energy intake and output patterns of water sports players of SAI SAG Alleppey. 2. To evaluate macro and micronutrient intake of water sports players and to compare it with the Recommended Dietary Allowances (RDA) for Sportspersons.

MATERIALS AND METHODS

Selection of subjects

Fifteen (n=36) water sports players aged 13 - 23 years (Age: 15.75±2.34 years, Height: 1.71±0.075 m, Weight: 60.03±7.30 Kg) were selected from Sports Authority of India (SAI) – Special Area Games (SAG) – Alleppey centre, Kerala.

Development of Interview schedule

The required data was collected through personal interview technique using schedule from the players.

Determination of Energy balance

An individual is in energy balance when the amount of energy taken up by the body equals the amount of energy expended by the body. Energy balance was determined by subtracting 7- day Mean Energy expenditure with 3 - day Mean Energy intake.

Measurements of Energy Intake (EI)

The purpose of the dietary recall is to get a complete and detailed procedure of what the athlete consumed over the last 24 hours (Three days). The subjects recorded their intake of all food and to quantify the portion of foods consumed. Players were asked to record their entire food intake carefully. The nutrient intake was calculated by using Nutritive Software Count What you eat by National Institute for Nutrition for dietary assessment. All evaluations were analyzed by researcher to ensure accuracy and consistency. Energy, Macronutrients (Carbohydrates, Protein and Fat) and Micronutrients compositions was calculated for all meals and snacks taken during the day and compared with the Recommended Dietary Allowance.

Measurements of Energy Expenditure (EE)

Energy expenditure measurements are needed for the definition of the energy requirement of an individual. To determine the caloric requirement, a Basal Metabolic Rate (BMR) was calculated using Harris Benedict equation. Basal Metabolic Rate (BMR) is the metabolic rate measured at optimal needed and physical rest conditions, at a comfortable temperature, 12-14 hours after the last meal. This formula considered the factors of height, weight, age, and gender as well as a physical activity level of $1.9 \times \text{BMR}$. The total energy expenditure (TEE), estimated energy expenditure (EEE) and the time of activity depending on the physical activity intensity and frequency were individually measured.

Anthropometric Measurements

Anthropometric measurements namely height, weight were collected using standard methods. Based on the measurements, Body Mass Index (BMI) (Wt/ht^2) was calculated. Height was measured to the nearest 0.1 cm using a standard stadiometer and body weight was measured with minimal clothing to the nearest 0.1 kg using a calibrated electronic weighing scale.

Statistical Analysis

The data was analyzed using Mean, Standard Deviations (SD), Standard Error, Analysis of Variance (ANOVA), One – sample t-test and paired t-test. A probability value of ≤ 0.05 was considered significant. Data was analyzed using the Statistical Package of Social Sciences (SPSS) version 21.

RESULTS AND DISCUSSIONS

Table 1 shows mean anthropometric parameters of the water sports players. The subjects ranged in age from 13 to 23 years.

TABLE 1: MEAN ANTHROPOMETRIC PARAMETERS OF THE WATER SPORTS PLAYERS

Variables	Mean \pm SD
Age	15.75 \pm 2.34
Height	1.71 \pm .075
Weight	60.03 \pm 7.30
Body Mass Index (BMI)	20.51 \pm 1.95
Basal Metabolic Rate (BMR)	1595.25 \pm 197.69

Mean age was 15.75 ± 2.34 years, mean height was 1.71 ± 0.075 m, and mean weight was 60.03 ± 7.30 Kg, Body Mass Index (BMI) computed was 20.51 ± 1.95 (Wt/ht^2) and Basal Metabolic rate (BMR) of the water sports players was 1595.25 ± 197.69 Kcal/day.

Table 2 shows the individual differences in the Energy Intake and Energy Expenditure of the water sports players and the energy balance (positive and negative).

TABLE 2: INDIVIDUAL DIFFERENCES IN ENERGY INTAKE AND ENERGY EXPENDITURE OF THE WATER SPORTS PLAYERS

Participant	Energy intake (Kcal/day)	Total E.E	Energy Balance	Percentage of difference
1	1778	1950.86	-172.86	91.13
2	3220	2612.86	607.14	123.23
3	3179	2523.00	656.00	126.00
4	3119	2566.00	553.00	121.55
5	3669	2378.43	1290.57	154.26
6	2734	2542.86	191.14	107.51
7	3218	2481.29	736.71	129.69
8	3329	2294.57	1034.43	145.08
9	3469	2946.00	523.00	117.75
10	3095	2739.86	355.14	112.96
11	3010	2004.43	1005.57	150.16
12	2728	1904.00	824.00	143.27
13	3112	2540.14	571.86	122.51
14	2273	2261.00	12	100.53
15	3031	1821.14	1209.85	166.43
16	1969	2899.71	-930.71	67.90
17	2655	1861.86	793.14	142.59
18	3065	3121.14	-56.14	98.20
19	2849	2527.71	321.28	112.71
20	3123	2243.57	879.42	139.19
21	2835	2184.71	650.28	129.76
22	2969	1865.71	1103.28	159.13
23	3138	1782.86	1355.14	176.00

24	3245	2720.86	524.14	119.26
25	3135	2431.71	703.28	128.92
26	2819	2231.71	587.28	126.31
27	3043	2124.14	918.85	143.25
28	1640	2030.57	-390.57	80.76
29	3022	1800.00	1222	167.88
30	3265	2158.71	1106.28	151.24
31	2850	2297.14	552.85	124.06
32	2998	2710.43	287.57	110.60
33	3048	2541.57	506.42	119.92
34	2975	2265.00	710	131.34
35	2889	2217.00	672	130.31
36	3118	1885.71	1232.28	165.34

Average Energy Intake (EI) and Total Energy Expenditure (TEE) for all water sports players were found to be 2933 ± 424 kcal/day and 2318 ± 350 kcal/day respectively. Majority of the players were found to be in positive energy balance. This resulted in a mean daily energy surplus of 615 ± 124 Kcal/day.

Fig 1 shows the Energy Intake (EI) and Energy Expenditure (EE) of water sports players*. Significant difference between mean energy intake and mean energy expenditure at the corresponding time-point at $p < 0.05$ level.

Fig 1: shows the Energy Intake (EI) and Energy Expenditure (EE) of water sports players

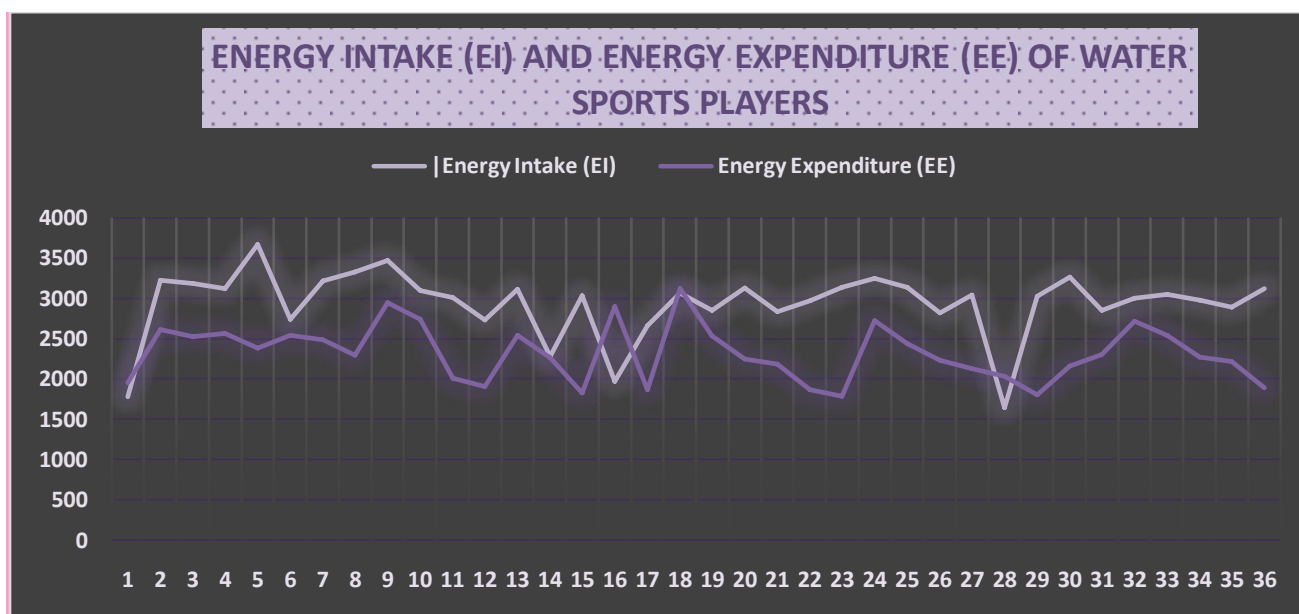


Table 3 shows the comparison of Energy Intake (EI), and the Energy Expenditure (EE) of the water sports players

TABLE 3: COMPARISON OF ENERGY EXPENDITURE AND ENERGY INTAKE

Group	N	Mean Difference (Diff)	Test	P
Energy intake (EI) and Energy Expenditure (EE)	36	614.77±493.22	Paired t-test t=7.47	.000

For this, paired-sample t - test was conducted to compare Energy Intake (EI) and Energy Expenditure (EE) and this shows the mean difference of EI and EE of 614.77 (614.77±493.22), since the t value is 7.47 and p=.000; $p > 0.05$ and it shows that the difference is statistically significant between the Energy Intake (EI) (2933±424) and Energy expenditure (EE) (2318±350) among water sports players.

Table 4 shows one - way ANOVA to compare Energy Intake (EI) and three water sports games (Kayaking, Canoeing and Rowing)

TABLE 4: ONE - WAY ANOVA TO COMPARE ENERGY INTAKE (EI) AND THREE WATER SPORTS GAMES (KAYAKING, CANOEING AND ROWING)

ANOVA					
EI	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	517629.541	2	258814.770	1.475	.243
Within Groups	5790084.459	33	175457.105		
Total	6307714.000	35			

An analysis of variance showed that the effect of Energy Intake (EI) on the three water sports games (Kayaking, Canoeing and Rowing) and was not significant since $p > 0.05$, $F(2,33) = 1.475$, $P = .243$. Post – Hoc tests (Tukey HSD) also revealed that all the significant levels were more than 0.05, so there is no difference in the means of the groups.

Table 5 shows one - way ANOVA to compare Energy Expenditure (EE) and three water sports games (Kayaking, Canoeing and Rowing)

TABLE 5: ONE - WAY ANOVA TO COMPARE ENERGY EXPENDITURE (EE) AND THREE WATER SPORTS GAMES (KAYAKING, CANOEING AND ROWING)

ANOVA					
EE	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	230442.401	2	115221.200	.935	.403
Within Groups	4068354.064	33	123283.456		
Total	4298796.465	35			

An analysis of variance showed that the effect of Energy Expenditure (EE) on the three water sports games (Kayaking, Canoeing and Rowing) and was not significant since $p > 0.05$, $F(2,33) = .935$, $p = .403$. Post – Hoc tests (Tukey HSD) also revealed that all the significant levels were more than 0.05, so there is no difference in the means of the groups.

Table 6 shows the mean daily Energy Intake and other macronutrients of the water sports players.

Table 6: Mean daily energy intake and other macronutrients of the water sports players

Macronutrient	Water Sports Player (n = 36)	Normal Value	t-value	p-value
Energy (Kcal)	2933.33±424.52	4200	-17.902	.000
Carbohydrates (gm)	374.44±58.35	540	-17.023	.000
Protein (gm)	113.45±18.97	162	-15.351	.000
Fat (gm)	108.74±16.76	114	-1.883	.068

** RDA for sportspersons

❖ Calculated for the specific sport - ILSL

When mean daily energy intake and other macronutrient distributions were analyzed, Independent sample t-test was used; energy intake ($t = -17.902$, $p = .000$) as well as all the macronutrients were found to be within the acceptable range and was statistically significant. Mean daily carbohydrate intake was found to be below their Recommended Dietary Allowance ($t = -17.023$, $p = .000$) and was statistically significant, mean protein intake ($t = -15.351$, $p = .000$); statistically significant and mean daily fat intake ($t = -1.883$, $p = .068$) was also found to be below the RDA and was statistically not significant.

Average daily intake of Carbohydrate was (374 gm/day, 6.23gm/Kg BW, 50.55%), Protein was (113 gm/day, 1.88 gm/Kg BW, 16.25%) and Fat was (108 gm/day, 1.81gm/Kg BW, 33.19%). To maintain concentration and replacement of muscular glycogen, carbohydrate intake should be of 500-800gm/day. Low-carbohydrate diets may compromise physical performance, causing negative effects in those who practice physical activities.

Table 7 shows the mean daily micronutrients of the water sports players.

Micronutrient	Water Sports Player (n = 36)	Normal Value	t-value	p-value
Iron	26.185±4.45	30	-5.139	.000
Calcium	1100.34±167.31	600	17.942	.000
Phosphorous	1917±298.68	600	26.463	.000
Vitamin A	424.61±18.158	600	-57.953	.000
Vitamin B	.7139±.089	1	-19.089	.000
Niacin	11.80±0.786	14	-16.74	.000
Vitamin C	30.69±2.505	40	-22.288	.000
Folic acid	80±1.95	100	-61.329	.000

TABLE 7: MEAN DAILY MICRONUTRIENTS OF THE WATER SPORTS PLAYERS

The micronutrient intake of the water sports players was analyzed and with regard to Iron, Vitamin A, Vitamin B, Niacin, Vitamin C and Folic acid; intake of these micronutrients was below the RDA values; and was statistically significant. While they exceeded the RDA values regarding Calcium and Phosphorous which was 183% and 319% more than the RDA values; and was statistically significant.

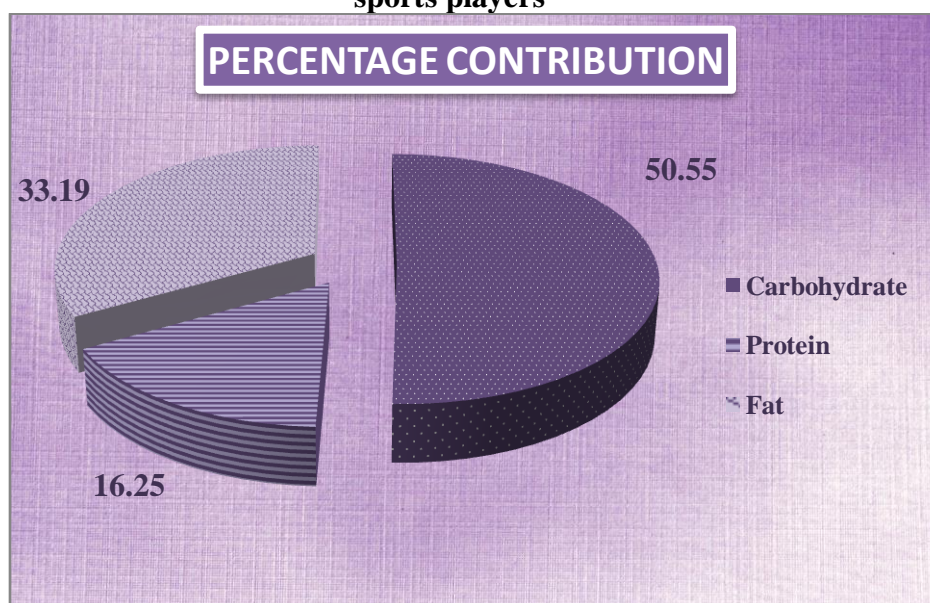
Table 8 shows the percentage contribution of total Carbohydrate, Protein and Fat of water sports players

TABLE 8: PERCENTAGE CONTRIBUTION OF TOTAL CARBOHYDRATE, PROTEIN AND FAT OF WATER SPORTS PLAYERS

MACRONUTRIENTS	P%±SD	NORMAL RANGE	T-VALUE	P-VALUE
Carbohydrate	50.55±3.94	60 – 65 %	-18.924	.000
Protein	16.25±4.86	12 – 15 %	-13.263	.000
Fat	33.19±3.49	25 – 30 %	34.638	.000

An attempt had been made to calculate the percentage of calories contribution derived from mean intakes of three major nutrients for these water sports players. Table 8 shows the percentage values of energy derived from carbohydrate, protein & fat for water sports players. Percentage energy derived from carbohydrate was found to be 50.55±3.94% (60 – 65%) (t=-18.924, p=.000) and was found to be below the normal range; and was significant. Percentage energy derived from protein was found to be 16.25±4.86% (12-15%) (t=-13.263, p=.000) and was found to be exceeding the normal range; and was statistically significant and percentage energy derived from fat was found to be 33.19 ± 3.49 (25 – 30%) (t=34.638, p=.000) and was also found to be exceeding the normal range and was statistically significant.

Fig 2: Percentage contribution of energy from Carbohydrate, Protein and Fat of water sports players



Thus, the study focused on the energy balance and nutrient intake of water sports players training at Sports Authority of India (SAI) - Special Area Games (SAG) – Alleppey Centre, Kerala. As previously mentioned, adequate attainment of energy balance becomes an important goal for athletes, because maintaining energy balance with appropriate nutrient intake optimizes exercise performance and the training response. The aim of the current study was to simultaneously quantify Energy intake (EI) which was recorded for three consecutive days-24 hour recall method and Energy Expenditure (EE) which was determined for seven days. The assessments of Energy Expenditure (EE) were calculated using Harris – Benedict's equation from the water sports players over a 7-day period. In relation to the specific player studied herein, data suggest that these water sports players' daily energy expenditure was ranging from 1782 to 3121 kcal per day.

The findings demonstrated that over a seven day period, players were in a positive energy balance, with energy intake being sufficient to meet the demands of training and competition. Mean daily Energy Intake (EI) was significantly higher than mean daily energy expenditure (EE) providing a daily energy surplus. Additionally, type of training had a direct impact on the degree of energy surplus, highlighting that heavy training days and match days to be a particular threat for energy balance. Such information is likely of use to practitioners and players who should consider adjusting energy intake accordingly. The mean daily EI and EE data reported here suggest that these water sports players are capable of matching overall energy requirements. The mean daily Energy Expenditure (EE) was 2318 ± 350 kcal/day and Energy Intake (EI) was 2933 ± 424 kcal/day. Thus, the EI was found to be higher than EE. There was no significant difference between Energy Expenditure (EE) and Energy Intake (EI).

Nutrient intake of the water sports players also indicated that the mean energy intake (2933 Kcal/day) was less than the RDA for the specific sport and the macronutrient intake such as mean daily intake of Carbohydrate was 374 gm/day which was subsequently less than the RDA for the specific sports, mean daily intake of protein and fat intake was 113gm/day and 108 gm/day which was also less than the RDA for the specific sports. Whereas in the case of

micronutrients with regards to Iron, Vitamin A, Vitamin B, Niacin, Vitamin C, Folic acid was less than the RDA; Calcium and phosphorous was exceeding the RDA values. Percentage contribution of energy from the macronutrients was also analyzed and was revealed that the carbohydrate percentage was 50.55% (50.55 ± 3.94) which was less than the normal range (60-65%); protein percentage was 16.25% (16.25 ± 4.86) which was more than the normal range (10-15%) and finally the fat percentage was 33.19% (33.19 ± 3.49) which was also found to be exceeding the normal range.

CONCLUSIONS

It can be concluded that the Energy Intake (EI) and the Energy Expenditure (EE) of these water sports players was in the positive energy balance. This positive energy balance may be needed for the hard intensive training for the competition period and also for the recovery period and the nutrient intake of these players suggested that their Energy intake and the macronutrients intake was less than the RDA and the apart from the calcium and phosphorous intake, all the other micronutrient intake was less than the normal values.

REFERENCES

1. Burke, L. (2007). *Practical sports nutrition*. Human Kinetics. USA. p. 141.
2. Costill, D. L. (1986). *Inside Running: Basics of Sports Physiology*. IN: Benchmark Press. Indianapolis.
3. De Wijn, J. F. Leusink, J. Post, G.B. (1977). *Diet, Body Composition and Physical Condition of Champion Rowers during Periods of Training and out of Training: Nutritional Aspects of Physical Performance*. 15th Symposium of the Group of European Nutritionists. Wageningen.
4. Flood, J. Simpson, C. (2012). *The complete guide to indoor rowing*. Bloomsbury. London. P. 124
5. Giovannini M, Agostoni C, Gianni M, Bernardo L, Riva E. (2000). Adolescence: Macronutrient needs. *Eur. J. Clin. Nutr.* 54(1):S7–S10.
6. Hill, R. J. Davies, P. S. W. (2011). Energy Intake and Energy Expenditure in elite lightweight female rowers *Medicine & Science In Sports & Exercise. journal of the American College of Sports Medicine*
7. ILSL, NIN, SAI. (2007). *Nutrition and Hydration guidelines for excellence in sports performance*. p.17
8. IOC. (2003). Consensus statement on sports nutrition. *Journal of Sports Science*. 2004: 22.
9. John, W. O’Kane, M.D, Carol, C. Teitz, M.D, Santana, M. Fontana, M.D, and Bonnie, K. Lind, M.S. Prevalence of Obesity in Adult Population of Former College Rowers.
10. Patlar S, Boyali E, Baltaci AK, Mogulkoc R, Gunay M. (2011). Elements in sera of elite taekwondo athletes: effects of vitamin E supplementation. *Biology Trace Elementary Research*. 139(1):119–125.
11. Petrie HJ, Stover EA, Horswill CA. (2004). Nutritional concerns for the child and adolescent competitor. *Nutrition*. 20:620–631.
12. Rebecca, J. Hill and Peter, S. W. Davies. 2002 Energy Intake and Energy Expenditure in Elite Lightweight Female Rowers. *Med. Sci. Sports Exerc.*, Vol. 34, No. 11, pp. 1823–1829.
13. Rowers & Nutrition. Retrieved on 29/01/2018 from <http://www.ochscrew.com/nutrition>
14. ROWING - Guidelines to a Healthful Diet. Retrieved on 28/01/2018 from <https://www.hksi.org.hk/news-publications/scientific-publications/education-pamphlets/sport-nutrition-education-series/guidelines-to-a-healthful-diet-rowing>.

15. SDA: Sports Dietitians Australia. (2017) .Resource Hub/ Factsheets/Sprint Canoe/Kayak.Retrievedon29/01/2018from<https://www.sportsdietitians.com.au/factsheets/food-for-your-sport/food-for-your-sport-sprint-canoekayak/>
16. Spear BA. Adolescent growth and development. *J. Am. Diet Assoc.* 3:S23–S29.
17. Stark, L. (2014). Rowing: eating for your sport. Nestle: AUT Millenium. New Zealand.p-1
18. Steen, S. N. Mayer, K. Brownell, K. D. Wadden, T. A. (1995) Dietary Intake of Female Collegiate Heavyweight Rowers. *Human Kinetics* Volume: 5 Issue: 3 Pages: 225-231.
19. Stellingwerff, T.Maughan, R.J, Burke, L. M. (2011) Nutrition for power sports: middle-distance running, track cycling, rowing, canoeing/kayaking, and swimming. *J Sports Sci.* 1:S79-89.



INCLUSIVE DESIGN IN SPORTS FOR THE VISUALLY IMPAIRED

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ABSTRACT

Inclusive design is 'design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference'. Every person with a visual impairment (VI) has the right to participate in sports and physical activity. We understand that there are many hurdles and barriers to overcome in order for each and every visually impaired person to have the same accessibility as a sighted person. By making small and simple adaptations we will be able to include people with a visual impairment in our sports and activity sessions. Many sports are made accessible by making some simple and obvious changes to rules or modifications to playing area or adaptations to equipment. Adapting a game or activity increases the opportunity for fun, skill development and self-confidence. Everyone is entitled to equal opportunities to participate in sport, and to do so in high quality facilities that are attractive, well designed and properly managed. Inclusive design can be achieved that will benefit everyone. As well as being equitable, it makes financial sense to attract rather than discourage all potential customers, together with their friends and families. Many things need to be in place for sports facility or recreational area to be inclusive and attract a diverse customer base. It is not simply a matter of making the sporting facility or space physically accessible. Sport and physical activity can take place in purpose built facilities and/or in open spaces.

KEYWORDS: Self-Confidence, Adaptations, Modifications, Ability, Language, Culture, Gender,

INTRODUCTION

Inclusive design is 'design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference'. According to the Olympic Charter 'the practice of sport is a human right. Every individual must have the possibility of practicing sport, without discrimination of any kind and in the Olympic spirit, which requires mutual understanding with a spirit of friendship, solidarity and fair play.'

Given that participation in sport is a human right under the Olympic Charter is vital that sports provision takes place within the context of inclusive design enabling everybody to have the opportunity to access sporting facilities and spaces. Many things need to be in place for sports facility or recreational area to be inclusive and attract a diverse customer base. It is not simply a matter of making the sporting facility or space physically accessible. Sport and physical activity can take place in purpose built facilities and/or in open spaces.

Every person with a visual impairment (VI) has the right to participate in sports and physical activity. We understand that there are many hurdles and barriers to overcome in order for each and every visually impaired person to have the same accessibility as a sighted person.

By making small and simple adaptations we will be able to include people with a visual impairment in our sports and activity sessions.

A visually impaired may also require a sighted guide during the sports or activity session to either assist when changing drills or tasks, or for the complete sports activity (such as running).

Physical Education Adaptations for the Visually Impaired

Physical education is important for all students including those who are blind or visually impaired. Although planning will be necessary, it is important to include students in the physical education program as it is a required component of the standard curriculum.

The instruction of recreation skills should be planned and deliberately taught, and should focus on the development of lifelong skills. Often students who are visually impaired do not experience the same opportunities for recreation that students with no vision loss have in the early years. Recreational and leisure activities can provide an avenue for the development of motor skills, social skills, language skills, and fitness. It is important to expose the students to as many age-appropriate recreational activities as possible. This will best prepare the student for future inclusion and independence.

Support the inclusion of students with visual impairments in group activities. Be sure that students play and talk with classmates rather than sit on the sidelines. Describe choices of activities that are available at recess. During games, allow students to buddy-up with a sighted partner. Remember that students who are visually impaired need support from staff during periods of free play on the playground. The visually impaired student should be able to participate in most recreational activities except for those that require good visual acuity (i.e. dodge ball). Build a student's self-confidence by letting him/her try. Take the student through an activity or game a couple of times before requiring independent movement. For a sighted student, motor imitation is a visual skill; a student who is visually impaired needs to experience the activity physically.

EQUIPMENT AND FACILITIES

For visually impaired sport, the adaptations made to sports or games are as simple as making some of the equipment larger or brighter - so easier to see - or audible (able to hear).

Sporting facilities and areas of recreational spaces should be designed with the participant and the spectator in mind. This is true of large stadiums, sports clubs, community and school facilities, parks and open spaces. The playing area, locker rooms, catering areas, viewing areas and car park all need to be accessed by all. In larger stadiums corporate hospitality should also have an inclusive approach. Viewing areas should be flexible enough to cater for mixed groups and not assume that a customer with a disability will be with one companion. They may want to participate or watch with a wider group of family and friends.

Benefits of Sports and Physical Activity

The emotional effect of having a visual impairment cannot be quantified. Sport and physical activity can be a very effective catalyst to ensuring a healthier and happier lifestyle.

Sport and recreation is not just a hobby for someone with a visual impairment but provides an opportunity to:

- tackle social exclusion.
- make new friends.
- raise confidence and self esteem.
- develop spatial awareness and muscle strength.
- provide a sense of accomplishment and achievement.

Adapting Sports for the Visually Impaired

Many sports are made accessible by making some simple and obvious changes to rules or modifications to playing area or adaptations to equipment.

Card Games

Braille and large-print playing cards are available commercially for the visually impaired. The value is indicated by the number on the card—for example, a lower case e for the number 5, or the letters j for jack, q for queen, k for king, and a for ace. The letters s for spades, h for hearts, d for diamonds, and c for clubs indicate the suits. Other card games can be similarly adapted for those who read braille.

Bingo

Tactile and large-print bingo cards enable anyone who is visually impaired to enjoy the game. And there are several ways to keep score. The most common method is to use a pegboard, similar to a cribbage board, which can be purchased or made with simple woodworking tools. Place two pegs at the starting point. After the first round, count the appropriate number of points and insert one peg. This peg keeps the place of the current score, and the second peg is used to mark the score of the next round. Using this method we can also keep score for the opponent.

Board Games

Braille or tactile versions of many popular board games, including Monopoly, Scrabble, checkers, chess, and cribbage are available. The modified Scrabble board, for example, has raised boundaries between the squares for the letters to fit into, braille captions to indicate double- and triple-word or letter squares, braille letter tiles with point values (without the number signs), and a peg board and large-print score sheets for score keeping.

Checkers and other board games can be adapted easily using various materials. For example, standard checkers pieces can be distinguished by a textured surface glued to or a hole through the center of either the red or black set of checkers.

Tactile dice are available commercially, although some standard dice already have dots that can be identified by touch.

Computer Games

A variety of accessible computer games are available. Some games can be purchased and installed on the computer. Other games are played over the web. Some games require a screen reader and speech synthesizer to read the screen. Other games come with speech built-in.

Jingle Balls – balls with ball bearings in them are popular sports equipment for visually impaired sports, such as Cricket, Goalball, Football and Jingleballs.

Sound Balls – tennis balls with bells inserted inside used for tennis.

Tactile markings – using raised tape, or taping string to the boundaries of a playing area will help a visually impaired person understand where a court, pitch or playing area is.

It is advisable to guide a visually impaired person around the venue or facility to help with orientation.

Football

There are two adaptive formats of Football. Blind Football and Partially Sighted Football. Each format is played with 5 players. Blind Football is played with an audible ball, partially sighted football with a futsal ball (size 4 football).

Swimming

In swimming a tapper may be used to help inform a visually impaired swimmer that they are nearing the wall. A tapper is a person using a lane cane with a small soft ball at the end, who taps the swimmers.

Tennis

Court sizes are adapted in sports such as tennis, and boundaries are raised so that a visually impaired person can feel with their feet the areas of the court. In tennis, equipment is modified, the racket is shorter and in cricket the stumps are larger and usually painted white to aid visually impaired people. Both sports have modifications in the rule regarding the number of bounces of the ball before reaching the player, and this varies depending on the sight classification.

Running

Guide runners support visually impaired people in athletics events on the track and on the road.

Cycling

In cycling visually impaired people ride on tandem bikes and are supported by a 'stoker'.

Cricket

The major adaptation is the ball, which is significantly larger than a standard cricket ball and filled with ball bearings. The size allows partially sighted players to see the ball and the contents allow blind players to hear it. The wicket (stumps) is also larger, to allow partially sighted players to see and blind players to touch it in order to correctly orient themselves when batting or bowling.

Various other modifications to the rules apply. Verbal signals are widely used both by umpires and players: in particular, the bowler must shout 'Play!' as he releases the ball. The delivery is required to pitch at least twice when bowled to a completely blind batsman (once when bowled to a partially sighted batsman), but must not be rolling. Totally blind batsmen cannot be out stumped, and must be found to be LBW twice before going out. Totally blind fielders are allowed to take a catch on the bounce.

Agencies/Organisations promoting sports, Culture and Recreation activities for the Visually Impaired in India

- Indian Blind Sports Association
- Chess Federation of India
- Paralympic Committee of India
- Abilympics
- World Blind Cricket

CONCLUSION

Well-planned physical activities that utilize appropriate equipment maximize a person's abilities and minimize any special challenges they may face. Adapting a game or activity increases the opportunity for fun, skill development and self-confidence. Learning a new sport or recreational activity improves the quality of a person's life that has a visual impairment and creates a general sense of well being and competence. Everyone is entitled to equal opportunities to participate in sport, and to do so in high quality facilities that are attractive, well designed and properly managed. Inclusive design can be achieved that will benefit everyone. As well as being equitable, it makes financial sense to attract rather than discourage all potential customers, together with their friends and families. By exposing the students to as many age-appropriate recreational activities as possible will best prepare the student for future inclusion and independence.

REFERENCES

- www.apf.org/.../adapted-physical-education-for-the-blind-and-visually-impaired
- www.teachingvisuallyimpaired.com
- <https://www.linkedin.com/pulse/inclusive-design-sports-facilities-spaces-mark-bullock>
- www.afb.org › Living with Vision Loss › Recreation



ASSOCIATION AMONG SPEED AGILITY DRIBBLING AND FLAT FOOT IN SCHOOL LEVEL HOCKEY PLAYERS

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ABSTRACT

The purpose of the study was to find out the Association among Speed, Agility, Dribbling and Flat Foot in School Level Hockey players. To facilitate the study (N= 40) Forty subject were randomly selected from condor International school, Bangalore. The selected age ranges from 13 to 18 years. The subjects were School Level Hockey Players. The researcher had gone through the available literature and had discussions with various experts and with his guide before selecting variables. The availability of the technique for the purpose of analysis, feasibility, reliability of the procedure and the outcome were extensively taken care of before finalizing the variables. After analysing the various factors associated with the presented study. Flat foot depends upon Speed, Agility and Dribbling was tested 50 meters run, 10x4 shuttle run and dribbling given distance. The collected data were analysed statistically by Person product moment. You must be able to run several miles during a game, mostly as like as sprint speed and respond quickly to a variety of rapidly changing situations during play. Finally, you need a thorough understanding of individual, group and team tactics. The players underwent two days of testing once as part of a control group and subsequently as part of the experimental group. After the first testing opportunity, a crossover design was implemented by subjecting the control group to the treatment and allowing the initial experimental group to form the control group.

KEYWORDS: Flatfoot, speed, Agility and Dribbling.

INTRODUCTION

Hockey is a game of physical and mental challenges. You must execute skilled movements under conditions of restricted space, limited time, physical and mental fatigue, and opposing players. You must be able to run several miles during a game, mostly as like as sprint speed and respond quickly to a variety of rapidly changing situations during play. Finally, you need a thorough understanding of individual, group and team tactics. Your ability to meet all these challenges determines how well you perform on the hockey field (**Joseph, 1996**).

Hockey is a game which calls for strenuous, continuous thrilling action and therefore, appeals to the youth the world over. The skills involved in the game are simple, natural and yet are highly stimulating and satisfying to anyone who participates in the game (**Thomas, 1964**).

Speed defined as the rate at which a person can propel his body or parts of his body through space. (**Frost Reuben, 1911**).

Agility is the ability to perform a series of explosive power movements in rapid succession in opposing directions. (**Barrow Harold, 1973**).

Stick-tapping the ball down the field at top speed with a series of strokes (**LokeshThani, 1995**).

Flatfoot or pesplanus, is caused by hyper mobility resulting from increased ligament laxity and muscle weakness on the plantar surface of the foot. It can also result from trauma such as severe medial ankle and arch sprains. Patients with a pesplanus foot may have greater and more prolonged subtalar pronation during gait secondary to the hyper mobility, resulting in medial stress injuries at the ankle, lower leg, and knee. They may also complain of medial arch pain and fatigue with activity. However, many active athletes with a pesplanus foot have no complaints of pain (**Sandraj. Shultz. Peggy. A. Hougum. David H. Perin, 2005**).

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the Association among Speed, Agility, Dribbling and Flat Foot in School Level Hockey players.

HYPOTHESIS

1. It was hypothesized that there was a significant relationship between the Flatfoot and Speed among School level Hockey Players.
2. It was hypothesized that there was a significant relationship between the Flatfoot and Agility among School level Hockey Players.
3. It was hypothesized that there was a significant relationship between the Flatfoot and Dribbling among School level Hockey Players.

REVIEW OF LITERATURE

Pienaar, C. (2010) The Study was to determine the effect of acute whole body vibration (WBV) training on the speed, agility and explosive power performance measurements of university field hockey players. A two-way randomized, crossover experimental research design was used in the study. Seventeen university field hockey players were randomly chosen from the first hockey teams of the North-West University, South-Africa to participate in the study and were divided into two groups. The players underwent two days of testing once as part of a control group and subsequently as part of the experimental group. After the first testing opportunity, a crossover design was implemented by subjecting the control group to the treatment and allowing the initial

experimental group to form the control group. The results showed that no statistical significance was obtained in any of the measurements from pre to post-testing. ANOVA analysis of the speed, agility and explosive power measurements revealed that the sequence of treatment had no significant effect on any of the variables. Main effect ANOVA analysis of the same variables revealed that none of the measurements were influenced significantly by the acute application of vibration training. The investigation of individual results from pre-to post-testing did however show tendencies towards improvement in the performances of 5m sprint (65%) and agility t-test (ATT) (53%) times. The acute application of WBV did not lead to any significant changes in the speed, agility and explosive power measurements of university field hockey players.

METHODOLOGY

To facilitate the study (N= 40) School Level Hockey Players were randomly selected from Bangalore. The selected ages ranges from 13 to 18 years. The subjects were School Level Hockey Players. Flat Foot depends upon Speed, Agility and Dribbling was tested 50 meters run, 10x4 shuttle run and dribbling given distance. The collected data were analysed statistically by Person product moment.

RESULTS AND DISCUSSION

TABLE – I
PEARSON PRODUCT MOMENT CORRELATIONS BETWEEN THE SELECTED
FLATFOOT AND SPEED, AGILITY AND DRIBBLINGAMONG SCHOOL LEVEL
HOCKEY PLAYERS

Variables	Mean	Standard deviation	Obtained 'r'
Flatfoot Vs	5.03	2.34	
Speed	5.95	0.31	0.09**
Agility	21.24	1.45	0.14**
Dribbling	3.73	0.92	0.20**

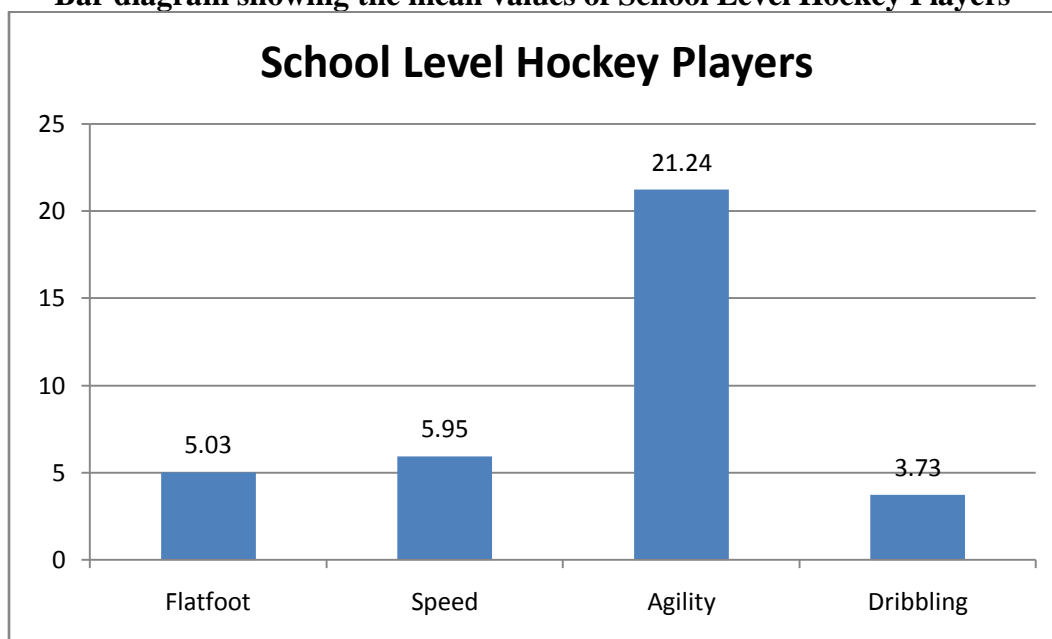
Required 'r' value at 0.05 level 0.304. *significant.

* Significant at 0.05 level. ** Not Significant at 0.05 level.

The result presented in Table I proved that there was no significant relationship between Flatfoot and Speed as the obtained 'r' value of 0.09 was lesser than the table 'r' value of 0.304.

That there was no significant relationship between Flatfoot and Agility as the obtained 'r' value of 0.014 was lesser than the table 'r' value of 0.304.

That there was no significant relationship between Flatfoot and Dribbling as the obtained 'r' value of 0.20 was lesser than the table 'r' value of 0.304.

Figure - 1**Bar diagram showing the mean values of School Level Hockey Players****CONCLUSION**

1. It was concluded that there was no significant relationship between Flatfoot and Speed among School Level hockey Players.
2. It was concluded that there was no significant relationship between Flatfoot and agility among School Level hockey Players.
3. It was concluded that there was no significant relationship between Flatfoot and dribbling among School Level hockey Players.

REFERENCE

Pienaar, C. (2010). The acute effect of whole body vibration (WBV) training on power-related measurements of field hockey players: biokinetics and sport science. African Journal for Physical Health Education, Recreation and Dance, 16(4), 594-604.



ROLE OF PHYSICAL EDUCATION RESEARCH ACTIVITIES AND THEIR IMPACT IN MODERN DAY LIFE

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ABSTRACT

At recent times, with the emergence of sophisticated, luxurious lifestyle, the need to follow a disciplined food habit as well as physical activity has been lost for most of our population. The loss of a disciplined food habits and day to day physical activities have resulted in exponential raise in population with obesity, postural deformities, autoimmune triggers, etc. For many decades Physical Education & Sports is commonly associated with analyzing and improving followers of any exercise, sport or game so that an individual or a team reaches a state of excellence. Subsequently, nutrition has been given equal importance and as the major source for tapping easy, fast and augmented recovery to complement an individual or team's performance. The intense trajectory of the loss of care, importance, urgency in following disciplined life style assisted by healthy food style have paved way for the graduates of sports & physical education to carryout result driven studies to obtain solutions to solve the formerly discussed problem. Loss of a healthy style is due to lack of discipline and care towards one's own anatomy (mind and body). In any academics, physical activity cum counseling on nutritious diet plan is offered so that children, individuals are fit and ready for any challenges. Presently, the importance of physical education that offers physical activity cum counseling on nutritious diet plan is lost in schools leading to unhealthy life style among children as well as parents. These are responsible for the prevalence of obesity, malnutrition etc., among children. The present work summarizes, the role of physical education research activity in identifying postural deformities in children in the age group of 9 to 12 years within Puducherry region. From this research activity, it was found that alarming need for immediate actions by parents and school authorities is very much required for the welfare of children through awareness towards physical education and programmed nutritious diet system.

KEYWORDS: *Obesity, Deformities, Prescribing, Physical Activity, Nutrition.*

INTRODUCTION

Importance of physical activities in day to day life has lost their importance with the emergence of the need for an independent, luxurious, reputed etc., life in the fast moving world. The care that ought to be given towards an individual's body and mind are either lost or missing due to the quest for a pretentious career through education. Children of ages between 8 to 18 years are mentored by their parents, teachers as well as by the society to become a righteous individual to contribute for the welfare of society. Though, the children are mentored in multiple aspects to identify their gifts and talents, very less importance is given towards building a physically fit child to endure setbacks and challenges in life. Parents, teachers and society are playing a stupendous role in sculpting children with extraordinary skills but their negligence towards administering physical education and nutrition have resulted in the loss of healthy life style. Children are not exposed towards physical education and healthy eating habits due to the exaggerated significance of academic excellence resulting out of formal class room education. Apart from these, lack of awareness towards a healthy eating lifestyle among the parents and teachers further aggravates the stressful condition. All these factors create stressful situations for the children and affect their body as well as mind resulting in negligence towards their own fitness. The lack of interest towards their own fitness results in loss of a disciplined life style which includes, waking up early in morning, involving in a physical activity in morning and evening, apart from the 8 hour school time. The children health further deteriorates if the nutrition/diet plans are insufficient to rejuvenate growth hormones. These contribute to drastic changes in the body of children resulting in abnormal whole body weight balancing kinetics. These balancing actions are felt comfortable during initial time periods, when left unnoticed or uncared for, it may lead to severe damage such as postural deformation or injury to a cartilage/tendon/muscle/bone. Anatomically, our body is programmed to repair itself and correct the deformations or injury but only when necessary support from a physical activity cum nutritious diet is provided. It is assumed that the children of age group of 9 to 12 years shall not suffer from any severe deformation or injury in their body as they are constantly monitored and mentored by parents, teachers and other elders. The same has been considered to be the hypothesis for the presented study. The procedures, methodology and outcomes of the study conducted are presented as follows.

Population selection

This present work summarizes the results of pilot study conducted to identify the state of health of 500 school children of age 9 to 12 years. This specific age group was selected in order to analyze the importance shown by parents and teachers towards the children. Also, the scientific fact that, puberty playing a key role in bone development hasn't been ruled out.

OBJECTIVES OF THE STUDY

The primary objective of the study was to identify and compile statistical data on children who are weak and malnourished. The secondary objectives were aimed towards identifying their overall mental health and their confidence levels in approaching outside world without a mentor/adult support.

HYPOTHESIS

It was hypothesized that the children will be physically healthy and will possess sound knowledge on importance of physical activity.

It was hypothesized that the children were offered frequent counseling regarding staying fit through physical education and in practicing a healthy nutrition rich food plan.

It was hypothesized that the children were strong in approaching the outside world as an individual without a mentor/adult support.

It was hypothesized that only 6.5% of a population of 30 nos (i.e. only 2 out of 30) will be physically and mentally unfit.

Procedure and Methodology

School students of age 9 to 12 years were selected randomly from different schools in Puducherry region. After respective authorizations/consent from the school authorities, parents and children themselves, they were subjected to physical examination (no physical contact, unless otherwise mentioned).

The subjects were asked to pose (6 variations) in a closed environment and images were captured. The captured images were analyzed to obtain conclusions on whether the subjects have a postural deformity. Forward head posture, backward head posture, bow leg, knock-knee, lordosis, kyphosis, scoliosis, round shoulder, flat foot, cavus foot, were taken as the orthopedic variables to carry out the present research. Orthopedic variables were preferred as they were easily identifiable and classifiable by visual observation. Furthermore, they act as the frame in which any deformity in anatomy is reflected distinctly.

The above mentioned orthopedic variables are grouped into the following:

- Postural deformity of neck-head
- Postural deformity of shoulder
- Postural deformity of spine
- Postural deformity of leg and
- Postural deformity of foot

The method followed to investigate the prevalence of the orthopedic variables in a subject is summarized in Table.1

S.No.	orthopedic variable	Investigation method	Equipment particulars
1.	Postural deformity of neck-head	Visual/image capturing/image processing	Kinovea software
2.	Postural deformity of spine	Visual/image capturing/image processing & khypholordometer	Kinovea software and khypholordometer – designed and fabricated as per industry standards
3.	Postural deformity of leg	Visual/image capturing/image processing	Kinovea software
4.	Postural deformity of foot	Documenting foot	Pedograph - designed and fabricated

	of foot	prints	as per industry standards
5.	Postural deformity of shoulder	Visual/image capturing/image processing	Kinovea software





Table 1: Variables, methodology and equipments used in the study

Apart from the orthopedic variables, during the data collection process, 10 random questions were asked to the subjects regarding the nutrition content of easily available, affordable food items, followed by the food style their parents follow while in home and outside home. Candidates were awarded one mark for the satisfactory answer provided by them for every question. Finally, a score out of 10 was considered to evaluate their awareness level towards, nutritious diet plan.

RESULTS AND ANALYSIS

The results obtained from the study are summarized in Table: 2. From the study/investigation is concluded that,

Majority of children of age group 9 to 12 were not physically healthy and will possess sound knowledge on importance of physical activity.

S.No	Variables	Percentage of positive result	Sample result	Remarks
1.	Postural deformity of neck-head	30 \pm 3		Backward head posture
2.	Postural deformity of spine	20 \pm 3		Scoliosis
3.	Postural deformity of leg	15 \pm 3		Knock knee
4.	Postural deformity of foot	35 \pm 3		High arch & flat foot


5.	Postural deformity of shoulder	30 \pm 3		Round shoulder
6.	General IQ on food types, nutrition value	10 \pm 3	NA	NA

Table 2: Summary of the study with sample results

The children were not offered any counseling regarding fitness, through physical education and in practicing a healthy nutrition rich food plan.

The children lacked confidence in approaching the outside world as an individual without a mentor/adult support.

Around 30% of a population of 30 nos (i.e. 9 out of 30) were physically and mentally unfit.

DISCUSSIONS AND CONCLUSION

Children are guided by parents, teachers and other elders of society to face their life as an individual. Academic education is offered at all cost and in any situation for most of the children for their betterment but very less thoughts are shared in taking care of their health. Due to lack of awareness, only the fundamental nutrition, importance to physical activity is focused while the rest of the variety of diets rich in nutritious food and various other kinds of physical exercises are neglected. Every single individual is gifted with a unique anatomy making everybody vulnerable to a few factors. All the vulnerability is neutralized only when the body and mind function as one and in a healthy way. The best medicine or treatment to keep body and mind in the pink of health is possible only through physical activity and nutritious diet plan. These when followed together will result in a healthy life style which in turn will improve the day to day quality of life.

From the pilot study presented above, it was evident that as much as 90% of the school children were vulnerable towards many complicated postural deformities, injuries and many other hidden conditions such as autoimmune triggers. Children are the future pillars of our society and they should be offered all the help they require to stand amid all the challenges and prove themselves as a valuable member of human kind. Academically, they are being equipped with knowledge, degrees, experiences but the most required, training to take care of their own body, understanding their unique anatomy, awareness about food habits, nutritious value of any food is absolutely missing, except for the kids with high IQ (just 2% only). This creates a hurdle which they will find difficult to overcome as years passes by. The deformations, stress on the muscles when left unattended would turn into permanent condition where their reversal could become either impossible or highly expensive and painful. The reason for the existence of such conditions can be attributed towards the lack of awareness among parents, family members, teachers especially physical education teachers.

Parents always take good care of their children but their knowledge in the types, classifications, importance of any physical activity is questionable. The same is applicable to the teachers who teach at school. Physical education in school is misunderstood as a full time sport/game that snatches away the focus of a student from academics. A nutritious diet plan is always misunderstood for a luxurious, casual food style. Necessary awareness program to demonstrate the benefits of protein rich diet plan, high carbohydrate, low fat-high protein diet plans have to

be implemented in every school by the respective authorities. Regular health check up camps should be organized to identify weak children in every school and a record should be maintained and they should be given special care by the teachers of physical education department.

Awareness program on balancing body weight, using correct body postures, understanding body anatomy, etc., must be conducted to enlighten parents, teachers and society. Necessary counseling must be offered to the children and their parents regarding the need to follow a healthy life-food style. By doing so, severe damage to the body, mind of the young children can be avoided. By doing so, they can be cent percent equipped to be on their own and grow up as a confident individual.

REFERENCES

1. Postural assessment, Jane Johnson, 2012, 978-1-4504-0096-1
2. <https://www.nhmrc.gov.au/health-topics/nutrition>
3. Nutrition for Serious Athletes Paperback, Benardot Dan Ph.D, 1999
4. Sport, Recovery, and Performance: Interdisciplinary Insights, Michael Kellmann, Jürgen Beckmann, 2017
5. Harman, K., Hubley-Kozey, C. L., & Butler, H. (2005). Effectiveness of an exercise program to improve forward head posture in normal adults: a randomized, controlled 10-week trial. *Journal of Manual & Manipulative Therapy*, 13(3), 163-176.
6. <https://www.kinovea.org/>



EFFECT OF MODERATE INTENSITY ENDURANCE AND HIGH INTENSITY INTERMITTENT TRAINING ON SELECTED EXPLOSIVE POWER OF MEN VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study forty five men Volleyball players were selected as subjects at random from SACS MAVMM College, Madurai Tamilnadu, India. The age of the subjects ranged from 18 to 22 years. The number of groups divided in to three; they were named as experimental group-I (moderate intensity endurance training group), experimental group-II (high intensity intermittent training group) and group-III acted as control. The number of subjects in each group was confined to fifteen only. The study was restricted to endurance training with two variations in intensity. The duration of the training period was restricted to twelve weeks and the number of sessions per week was confined to three, the selected criterion variable is explosive power measured with vertical jump. The collected data pre and post test treated with ANCOVA. If obtained 'F' ratio was significant scheffe's post hoc test used. Level of significant was fixed at 0.05. There was a significance difference among the moderate intensity endurance training group, high intensity intermittent training group and control group on explosive power. The moderate intensity endurance training group and high intensity intermittent training group has significantly improved the explosive power when compared with the control group. It was also concluded that the high intensity intermittent training group has significantly improved explosive power than the moderate intensity endurance training group.

KEYWORDS: *High Intensity Intermittent Training, Moderate Intensity Endurance Training, Explosive Power and ANCOVA*

INTRODUCTION

Sport is all forms of physical activity which, through casual or organized participation, aim to use, maintain or improve physical fitness and provide entertainment to participants. Sports are most often played just for fun or for the simple fact that people need exercise to stay in good physical condition. sports' training is a basic preparation of the sportsmen for better performance through physical Exercise. It is based on scientific principles of aiming at education and performance enchantment. Sports activities consist of motor movement and action and their success depends to a great extent on how correctly they are performed. Techniques of training and improvement of tactical efficiency plays a vital role in training process (**Edge et al., 2005**).

Endurance training also strengthens the immune system, reduces injuries, increases energy, increases efficiency and develops mental focus. All of these directly correspond to the reasons. Training anaerobically, while important, may only be effectively undertaken once an athlete establishes a strong aerobic base. It typically takes a person 8-12 weeks, training aerobically 4-6 times per week for approximately 40 minutes each session (some longer sessions are recommended), to develop a strong aerobic base. (**Wibom et al., 2004**).

Endurance training challenges the mind and the body. Only a conditioned body and a focused mind can create a consistent, steady heart rate, a flowing form and a quiet mind for an extended period of time. Over the course of an endurance training session, a rider's perceived exertion will rise because of their emotional state, focus, form deterioration, and/or the accumulation of metabolic waste products. Therefore, the key to endurance training is to develop an even application of physical energy and mental strength over an extended period of time. Therefore, the key to endurance training is to develop an even application of physical energy and mental strength over an extended period of time (**Acevedo & Goldfarb, 1989**).

METHODOLOGY

The purpose of the study forty five men volleyball players were selected as subjects at random from SACS MAVMM College, Madurai Tamilnadu, India. The age of the subjects ranged from 18 to 28 years. The number of groups divided in to three; they were named as experimental group-I (moderate intensity endurance training group), experimental group-II (high intensity intermittent training group) and group-III acted as control. The number of subjects in each group was confined to fifteen only. The study was restricted to endurance training with two variations in intensity. The duration of the training period was restricted to twelve weeks and the number of sessions per week was confined to three, the selected criterion variable is explosive power measured with vertical jump. The collected data pre and post test treated with ANCOVA. If obtained 'F' ratio was significant scheffe's post hoc test used. Level of significant was fixed at 0.05.

Training Program

In moderate intensity endurance training, the initial intensity was fixed at 65% and it was increased once in two weeks by 5% and in high intensity intermittent training the initial intensity was fixed at 80% and it was increased once in two weeks by 5%.

RESULTS

TABLE-1
ANALYSIS OF COVARIANCE ON EXPLOSIVE POWER OF MODERATE INTENSITY
ENDURANCE TRAINING GROUP HIGH INTENSITY INTERMITTENT TRAINING
GROUP AND CONTROL GROUP

Test	Moderate Intensity Endurance Training Group	High Intensity Intermittent Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean	48.33	48.33	48.80	Between	2.178	2	1.089	0.08
SD	3.44	2.97	4.59	Within	583.067	42	13.883	
Post Test Mean	50.07	53.13	48.40	Between	172.933	2	86.467	4.70*
SD	3.79	4.21	4.81	Within	772.267	42	18.387	
Adjusted Post Test Mean	50.23	53.29	48.08	Between	205.17	2	102.59	25.54*
				Within	164.68	41	4.02	

* Significant at 0.05 level of confidence.

(The table value required for significance at 0.05 level of confidence with df 2 and 42 and 2 and 41 were 3.22 and 3.23 respectively).

TABLE - 2
SCHEFFE'S POST HOC TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED
POST-TEST MEAN OF EXPLOSIVE POWER

S. No.	Adjusted Post-test Means			Mean Difference	Confidence Interval
	Moderate Intensity Endurance Training Group	High Intensity Intermittent Training Group	Control Group		
1.	50.23	53.29	-	3.06*	1.86
2.	50.23	-	48.08	2.15*	1.86
3.	-	53.29	48.08	5.21*	1.86

*Significant at 0.05 level of confidence.

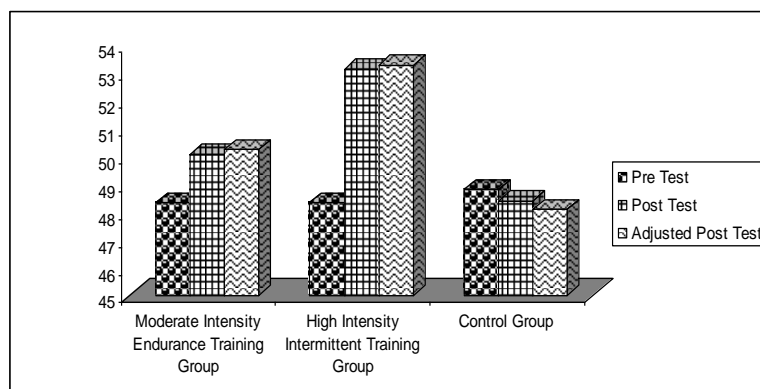


Figure-1 Mean Values of Pre, Post and Adjusted Post Tests of Moderate Intensity Endurance Training Group, High Intensity Intermittent Training Group and Control Group on Explosive power

DISCUSSIONS ON FINDINGS

Our study results supporting previous studies also. The high-intensity interval training (HIT) is a potent time-efficient strategy to induce numerous metabolic adaptations usually associated with traditional endurance training. HIT can increase skeletal muscle oxidative capacity and endurance performance and alter metabolic control during aerobic-based exercise (Laursen et al., 2002). The study showed that the interval training improves the performance rapidly that of continuous running. More over the interval training group showed as significant improvement in developing cardio respiratory endurance and muscular endurance (Chidambara Raja 1992). The study showed that the moderate-intensity aerobic training that improves the maximal aerobic power does not change anaerobic capacity and that adequate high-intensity intermittent training may improve both anaerobic and aerobic energy supplying systems significantly, probably through imposing intensive stimuli on both systems (Tabata et al., 1996). study determined that the conventional circuit-training programme made significant improvement in power, endurance and strength. However, the high-intensity programme of circuit training produced significantly greater improvement than did the conventional programme (Glen Engene Fincher 1990). Study informed that the performance in speed, flexibility and explosive power improved significantly for both progressive and alternate high and low intensity training when compared to the control group, and no significant existed between the training groups (Sebastian 1998).

CONCLUSIONS

It may be concluded from the results of the study that moderate intensity endurance training group and high intensity intermittent training group has significantly improved the explosive power when compared with the control group. Moreover, the high intensity intermittent training group has improved explosive power than the moderate intensity endurance training group.

REFERENCES

1. Acevedo, E. O. and Goldfarb, A. H. (1989). "Increased Training Intensity Effects on Plasma Lactate, Ventilatory Threshold and Endurance", **Medicine and Science in Sports and Exercise**, 21, 563-568.

2. Chidambara Raja S. (1992). "Comparative Analysis of the Effects of Continuous and Interval Running on Selected Physical Fitness Variables", **Unpublished M.Phil., Dissertation**, Annamalai University.
3. Edge, Johann; Bishop, David; Goodman, Carmel; and Dawson, Brian (November 2005). "Effects of High and Moderate-Intensity Training on Metabolism and Repeated Sprints", *Medicine and Science in Sports and Exercise*, 37(11), 1975-1982.
4. Wibom, R., Hultman, M. Johansen, K. Matherei, D. Constantin-Teodosiu, and Schamtz, P. G. (1992). "Adaptation of Mitochondrial ATP Production in Human Skeletal Muscle to Endurance Training and Detraining", *Journal of Applied Physiology*, 73(5), 2004-2010.
5. Laursen P.B., and Jenkins D.G. (2002). "The Scientific Basis for High-Intensity Interval Training: Optimising Training Programmes and Maximising Performance in Highly Trained Endurance Athletes", *Sports Medicine*, 32(1), 53-73.
6. Glen Engene Fincher, (September 1990). "The Effect of High Intensity Strength Training on Anaerobic Power and Endurance", *Dissertation Abstracts International*, 54(3), 88-93.
7. Sanil Sebastian, (1998). "Relative Analysis of Progressive Training and Alternate High and Low Intensity Training on Speed, Flexibility and Explosive Power of Boys", **Unpublished Doctoral Thesis**, Annamalai University.
8. Tabata, I., Atomi, Y., Kanehisa, H., and Miyashita, M. (1990). "Effect of High-Intensity Endurance Training on Isokinetic Muscle Power", *European Journal of Applied Physiology and Occupational Physiology*, 60(4), 254-8



PSYCHOLOGICAL PROBLEMS OF CHILDREN WITH LOCO-MOTOR DISABILITY

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ABSTRACT

Disability is defined as any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being (WHO,1990).The persons with disabilities frequently live in deplorable conditions, facing barriers that prevent their integration and meaningful participation in mainstream society and they are socially, economically and emotionally affected. Psychosocial problem of adolescent children with loco-motor disability has become the most important subject to be discussed and noticed. Psychosocial problems influence the quality of life, such as behavioral, emotional, and educational problems that are highly prevalent among children and adolescents and it may severely interfere with everyday functioning. Adolescents, in this age, they are desirable to involve in physical activities and loco motor disability substantially limiting his/her activity and place him/her under great emotional stress (Ratra, 2007). The effect disability can have on the suffering of an individual depends on the way he/she reacts and adjust to his / her disabled condition and it depends upon their psychosocial health. The present study is to find out the psychosocial problems of adolescent children with loco- motor disability and the factors which affect it and to analyze the coping behavior of them.

KEYWORDS: *Socially, Economically, Substantially*

INTRODUCTION

Disability is defined as any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being (WHO, 1990). The persons with disabilities frequently live in deplorable conditions, facing barriers that prevent their integration and meaningful participation in mainstream society and they are socially, economically and emotionally affected. Psychosocial problem of adolescent children with loco-motor disability has become the most important subject to be discussed and noticed.

Psychosocial problems influence the quality of life, such as behavioral, emotional, and educational problems that are highly prevalent among children and adolescents and it may severely interfere with everyday functioning. Adolescents, in this age, they are desirable to involve in physical activities and loco motor disability substantially limiting his/her activity and place him/her under great emotional stress (Ratra, 2007). The effect disability can have on the suffering of an individual depends on the way he/she reacts and adjust to his / her disabled condition and it depends upon their psychosocial health. The present study is to find out the psychosocial problems of adolescent children with loco- motor disability and the factors which affect it and to analyze the coping behavior of them.

FINDINGS, SUGGESTIONS AND CONCLUSION

This chapter deals with findings of data presented in the previous chapter and attempts to capture the essence of the study. This chapter also consists details on the implication of the present study.

The study on "psychosocial problems of children with loco-motor disability" was under taken with the following objectives:

- To find out the socio-economic status of the children with loco-motor disability
- To find out the psychosocial problems of children with loco-motor disability.
- To analyze the coping behavior among children with loco-motor disability.

The sample drawn for the study was 50, using simple purposive sampling method. Interview schedule method was the tool used for collecting data for the study.

The findings of the study are summarized under the following heads:

- A. General Profile of the Respondents
- B. Occurrence of disability
- C. Special facility
- D. Functional mobility skill training
- E. Benefits received from governments
- F. Psychosocial problems of children with disabilities.

a. Mental health analysis

b. Psychosomatic problems.

c. Self- analysis

G. Coping behavior

General profile of the respondents

- Fifty nine per cent of the boys and 29 per cent of the girls were in the age group of 13-14 years. Twenty eight per cent of the boys and 22 per cent of the girls were in the age group of 15-16 years. Thirteen per cent of the boys and eight per cent of the girls are in the age group of 17-18 years.
- Regarding the occupation 16 per cent of the boy's parents and 6 percent of girls parents are government employees.
- 38 percent of the boys and eleven percent of girls parents annual incom~ is below Rs.50000. And 50 per cent of the boys and 61 per cent of the girls parents earning a income of Rs.50000-100000. And 12 per cent of the boys and 28 percent of the girls parents were earning an income of Rs.100,000 and above.
- Thirty one percent of boys and seventeen percent of girls fathers were educated upto primary level. Forty seven percent of boys and 61 percent of girls parents were educated upto secondary education and 22 percent of boys and girls parents had college education.

Occurrence of disability

100 percent of boys and 94 per cent of girls had the disability from birth itself. Six per cent of girls had the disability after the birth.

Special facility

Fifty three per cent of boys and 28 per cent of girls were receiving special facility in school and 47 per cent of boys and 72 per cent of girls were not receiving special facility in their schools.

Functional mobility skill training

Fifty percent of boys and 72 percent of girls were receiving functional mobility skill training in schools. And 50 per cent of boys and 28 per cent of girls were not receiving functional mobility skill training in schools.

Benefits received from governments

Ninety seven per cent of boys and 94 per cent of girls were receiving benefits from government and three per cent of boys and six per cent of girls were not getting government benefits.

Psychosocial problems of children with loco- motor disability.

Mental health analysis, psychosomatic problems and self- analysis indicates the psychosocial problems. •..

Mental health analysis

Sixty six percent of boys and 78 percent of girls health status was good and 34 per cent of boys and 22 per cent of girls health status was not good. The home atmosphere was favorable for sixty six per cent of boys and 83 percent of girls, and 34 per cent of boys and 17 per cent of girls; the home atmosphere was not favorable. Sixty nine percent of boys and 83 percent of girls were interacting closely with their parents and 31 per cent of boys and 17 percent of girls were not interacting closely with their parents and not sharing their feelings and emotions.

Sixty six percent of boys and 78 per cent of girls were worried about their future and it was found that girls were more worried than boys. Eighty four per cent of boys and 78 per cent of girls had sufficient number of friends. And 16 per cent of boys and nine per cent of girls had no friends. No respondents have had sexual experience with someone against their will, so that they did not take a sedative.

Psychosomatic analysis ~

Fifty nine per cent of boys and 50 per cent of girls often feel listless and fifty percent of boys and 28 per cent of girls feel weary. Fifty six percent of boys and 72 per cent of girls had no headache and three percent of boys and 11 per cent of girls had headache because of stress due to their disability. Forty seven per cent of boys and 44 per cent of girls had no appetite and 16 per cent of boys and 28 per cent of girls had no problem about appetite. Forty seven per cent of boys and 55 per cent of girls were feeling difficult to sleep. Ninety four percent of boys and girls skin was sensitive. Only three per cent of boys and six percent of girls had sensitive skin. Fifty per cent of boys and 55 per cent of girls had stomach ache around navel and 56 per cent of boys and 72 per cent of girls were not able to relax their muscles properly. Forty seven per cent of boys and 22 per cent of girls were used to crying without reason.

Self analysis

Forty four per cent of boys and 72 per cent of girls are feeling good about their self. Fifty per cent of boys and 39 per cent of girls were not rebellious. Thirty eight per cent of boys and 22 per cent of girls are unsure about self. And 28 per cent of boys and 45 per cent of girls feel sure about them. Fifty per cent of boys and 39 per cent of girls worry a lot. And 59 per cent of boys and 61 per cent of girls agreed that they are independent.

Coping behavior

Eighty seven per cent of boys and 89 per cent of girls were good in studies. But thirteen per cent of boys and 11 per cent of girls academic performance were poor.

Seventy two per cent of boys and 78 per cent of girls were attending tuition. 62 percent of boys and 50 per cent of girls were going for remedial classes and only 31 per cent of boys and 33 per cent were doing group study for improving their academic performance.

Only 38 per cent of girls and 44 per cent girls were participating in sports and 62 per cent of girls and 56 percent of girls were not participating in sports. Nineteen percent of boys and 28 per cent of girls had the habit of reading books. Seventy five percent of boys and 83 percent of girls were attending physiotherapy.

Sixty nine per cent of boys and 72 per cent of girls had spend more time with parents and 84 per cent of boys and 83 per cent of girls were liked to spend time with friends.

Sixty nine per cent of boys and 72 per cent of girls had spend more time with parents and 84 per cent of boys and 83 per cent of girls were liked to spend time with friends. Fifty nine per cent of boys and 83 per cent of girls had confidence that the disability will not be a barrier to their future and 87 per cent of boys and 78 per cent of girls accept help from others. Sixty four per cent of boys and 50 per cent of girls do not like to share their feelings with others. Ninety one per cent of boys and 89 per cent of girls spend time for relaxing. And 59 per cent of boys and 67 per cent of girls believe that they will be able to do the same things their non disabled friends do. Fifty nine per cent of boys and 61 per cent of girls are agitated to go in public place. And 84 per cent of boys and 89 per cent of girls spend time to pray and spiritual meditations. Fifty three per cent of boys and 56 per cent of girls were not able to handle difficult situation.

SUGGESTIONS:

- Parents and care-takers of children with loco-motor disabilities should give special care for their children.
- Parents of children with loco-motor disabilities should utilize the government provisions.
- Parents and care-takers of adolescent children with loco-motor disabilities should understand the developmental changes in them and provide good home atmosphere and encourage them.
- Schools should be provided special facilities like slope- way and functional mobility skill training for children with loco-motor disability.
- Children with loco-motor disability should have healthy attitude about themselves.
- Children with loco-motor disability must accept their disability, set realistic goals and interact both with the disabled and non-disabled people.
- Children with loco-motor disability should attend physio-therapy, occupational therapy, self-management and behavioral therapy which help to reduce their psychosocial problems.
- Children with loco-motor disability should attend recreational activities to cope up with their disability and psychosocial problems.
- Children with loco-motor disability and their parents should attend counseling and rehabilitation programs.

CONCLUSION

"If disabled people were truly heard, an explosion of the knowledge of human body and psyche would take place"

-Susan Wendell

Attitude of the family exerts a great influence on the disabled person. For example, some parents regard the disabled child as useless. Consequently, the child develops feelings of worthlessness. Some parents, on the other hand, pamper such a child so much that he / she becomes completely a dependent. The dependence causes frustration and hinders development. Other members of the family turn jealous of the disabled child who then faces isolation.

Change in social attitudes is essential for psycho-social rehabilitation of the disabled. The public should be educated about the abilities and handicaps of the disabled with regard to their contribution to the society. They must be advised to avoid extremes of attitudes, and accept the disabled child as it is. Social workers can play a vital role in easing family tensions, say, by home-visits, as some parents need counseling. Attitude of the society towards the disabled having various ramifications also needs reorientation. Effective propaganda and education through the mass media like T.V., radio, the press could be used to arouse greater sensitivity towards the problems of the disabled. A healthy attitude of the disabled is equally important for social and psychological adjustment.

BIBLIOGRAPHY

1. Abraham S.(2013).Quality of life among adolescents with physical disability undergoing integrated education. International research journal of social science. vol.2(5).pp1-5.
2. Bhattacharjee A and khushochetri.(2014).who is more depressed?: a study among persons with disability. Indian journal of health and well being. Vol.5(11).pp 1339-1341
3. George Henderson, Willie V. Bryan.(2011). Psychosocial Aspects of Disability. Charles C Thomas Publisher.
4. Kundu AK.(2014).Your attitude to my disability is my handicap-the world of adolescents with loco-motor disability in conference adolecon 2005, Kolkata.
5. Laskar A R, Gupta V.K., Kumar D,Singh M.M, Sharma N.(2010).psychosocial effect and economic burdon on parents of children with locomotor disability. Indian journal of pediatrics, vol.77 (5).pp 529-533.
6. Mathew B.(2013).Causes of psychosocial problems] Erikson's stages of psychosocial development & high school students.
7. Pande.N.(2011). Understanding coping with due to distress due to physical disability. Journal of psychology and amp developing societies.vol.23(2).pp177-209.



ASSISTIVE TECHNOLOGY A BOON FOR INCLUSION OF PERSONS WITH VISUAL IMPAIRMENT

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ABSTRACT

Technology has great potential in providing access for all learners, and the ability to access the general education curriculum. Assistive technology has a major role in remediating and compensating the performance deficits experienced by student with special needs. Effective technology integration in education can therefore help in addressing the functional barriers experienced by students with disabilities, providing them with equitable learning opportunities to exhibit their abilities, through provision of necessary support and an equally accessible learning environment to all. Hence an attempt was made to analyze the use of assistive technology by the visually impaired students enrolled in higher education towards academic activities, mobility, print accessibility and in recreation the result revealed that assistive technology was a boon for effective inclusion.

KEYWORDS: Curriculum, Accessibility, Education Irrespective

INTRODUCTION

Education is the most essential ingredient in the development and empowerment of individuals, and inclusion in education irrespective of the varied socio-economic differences and the differences in 'abilities' and 'disabilities' (Praisner, 2003), undoubtedly makes this foundation much stronger (Ahmad, 2014). A school system emphasizing education for all should ensure the right of all children to a meaningful education based on individual needs and abilities (Johnson, 2002). Any child may experience a special need during the course of his educational years (UNESCO, 1994), and as a result, some children feel 'left-outs' and never enter education or enter only for a few years and, as repeaters, or become 'drop-outs' or 'pushed-outs', without their needs have been met out. Inclusive education, more than mainstreaming the learners with special needs, is also concerned with identifying and overcoming all barriers for effective, continuous and quality participation of all in education (Ramchand and Dummugudem, 2014; Ahmad, 2015a), and providing a 'least restrictive environment' (LRE) to satisfactorily afford children with disabilities a meaningful educational benefit, together with others, in an accessible physical and human environment.

Ac- knowing the capabilities or 'differential abilities' of all learners, the education of children with special needs in inclusive schools becomes more of a shared responsibility between the different stakeholders involved (Ahmad, 2015a; Praisner, 2003); demanding a shift in attitude, availability and accessibility of infrastructure, pedagogy, need-based methods and materials for instructional delivery, assessment and evaluation; and the much evident issue of acceptance and accommodation at all levels in the education system (Ahmad, 2014). Addressing the individual learning needs of all children, youth and adults, with a specific focus on those vulnerable to marginalization and exclusion; inclusive education as an approach implies all learners, with or without disabilities, to be able to learn together through access to common educational setting with an appropriate network of support services, which can be possible only in a flexible education system that assimilates the needs of diverse learners and adapts itself to meet these needs, ensuring that all stakeholders in the system are comfortable with diversity and see it as a challenge rather than a Children with disabilities face extreme disparities and daunting challenges to the enjoyment of academic, social, and community participation in low and middle income countries (14). They are subjected to additional discrimination and social exclusion based on age, gender, social status, language, ethnicity, religion. Among the prevalent barriers to the successful implementation of inclusive education like - limited governmental support, ineffective policies and legislation, inadequate funding, insufficient trained teachers and support staff, political instability, and economic crisis; the ineffective and inefficient use of assistive technologies is seen to be a major obstacle hindering inclusion (Chitiyo, 2007; Ellsworth and Zhang, 2007; Gronlund et al., 2010; Singal, 2008).

Students with disabilities are found to be frequently trapped in a vicious cycle of exclusion from education, society and mainstream development programmes due to lack of necessary support and the means for equal participation (Ahmad, 2015a). Effective technology integration can help provide all learners the ability to access the general education curriculum, offering them multiple means to complete their work with greater ease and independence in performing tasks that they were formerly unable to accomplish, or had great difficulty in accomplishing (Roberts et al., 2008;) Hence the investigator made an attempt to investigate the usage of assistive technology by visually impaired with the following objectives:

- identify the visually impaired
- Analyze the usage of assistive technology in education
- Understand the knowledge of visually impaired about the usage of print accessibility
- Study the usage of assistive technology towards mobility
- Find out the use of assistive technology in recreation.

METHODOLOGY

Thirty visually impaired students enrolled in higher education were selected by using purposive sampling method. Using assistive technology was the criteria followed for selecting the sample. A checklist was framed and used to analyze the usage of assistive technology in their learning process. The data was collected by means of personal interview

RESULTS AND DISCUSSION

TABLE 1
USE OF ASSISTIVE TECHNOLOGY IN ACADEMIC ACTIVITIES

S.No.	ITEM	FREQUENTLY		SOMETIMES		NEVER	
		NO	%	NO	%	NO	%
1	Flextalk- Pocket PTP-1	30	100				
2	Large Type Keyboard	25	83	5	17		
3	Screen Reader(JAWS,NVDA)	23	77	7	23		
4	Kurzwell reading Software & ABBYY Fine Reading (Open Source)	20	87	10	13		
5	Read It Wand	22	73	8	27		
6	Read Easy Move	16	53	9	47	5	
7	Seika Braille Display	10	10	7	10		

It was surprise to note that cent percent of the visually impaired were able to use Plectalk- pocket PTP-1 to record and read their study materials. Seventy seven percent of them frequently use Screen Reader and Seika Braille display for reading purposes. Whereas 87% of them use Kurzwell reading software for the voracious reading. On the whole the assistive technology was a boon for their academic performance.

TABLE 2
USE OF ASSISTIVE TECHNOLOGY TOWARDS MOBILITY

S.No.	ITEM	FREQUENTLY		SOMETIMES		NEVER	
		NO	%	NO	%	NO	%
1	Elevators with Braille Inscriptions	30	100				

2	Telephones in Elevators with Braille Inscriptions	30	100				
3	Voice in the elevators	30	100				
4	Audio	30	100				

This table stands evident that the assistive technology meant for movement made the visually impaired to move independently which aids for inclusive growth.

TABLE 3
USE OF ASSISTIVE TECHNOLOGY IN PRINT ACCESSIBILITY

S.No.	ITEM	FREQUENTLY		SOMETIMES		NEVER	
		NO	%	NO	%	NO	%
1	Win Braille Software (English)	23	77	7	23		
2	Shree- lipi Software (Tamil)	28	93	2	7		
3	Braille embosser	24	80	6	20		

This table reflects that 77% of the visually impaired were frequently using the win Braille software which enabled them to convert to English and 93% of them were using the Shree-Lipi software to convert the content into Tamil when they browse the content for reference and assignment. Eighty percent of them were using the Braille embosser to browse the content independently. Hence we can conclude that assistive technology reduced their dependency and increased their independency which is very much vital for inclusive growth.

TABLE 4
USE OF ASSISTIVE TECHNOLOGY IN RECREATION

S.No.	ITEM	FREQUENTLY		SOMETIMES		NEVER	
		NO	%	NO	%	NO	%
1	Chess board	20	80	10	20		
2	Draught board	28	93	2	7		
3	Puzzle games	27	90	3	10		
4	Recreation kit	30	100				
5	Playing card	29	97	1	3		
6	Braille cross word game	23	77	7	23		
7	Sudoku puzzle game	22	73	8	27		
8	Dominoes double six	21	70	9	30		
9	Little cube	26	87	4	13		

Cent percent of the visually impaired were using the recreational kit frequently. Above ninety percent of them were frequently using playing cards ,draught board, and puzzle games to engage themselves during their free hours. it was surprise to note that above seventy percent play Braille cross word game ,Sudoku puzzle game and dominoes double six. Eighty percent of them play cards frequently. This table stands evident that none of them were left them selves free when they were free. This would have raised their self esteem which is otherwise not possible.

CONCLUSION

Assistive technology should not be viewed by educators within a 'rehabilitative' or 'remediative' context, but as a tool for accessing curriculum, and exploring out means to help students achieve positive outcomes (Warger, 1998). For the proper and optimum use of assistive devices, it is essential to ensure *need-based assessment* - considering the applicability of the technology and its effectiveness; *a sound development plan* - ensuring student centered goals and proper identification in the plan of the devices needed; *successful implementation* - through action oriented approach to check the feasibility and effectiveness of the technology, with *effective monitoring and periodic review*. There is a distinct need for researchers, practitioners, and other stakeholders in the system to identify ways to encourage the development of tools and strategies for technology integration, and strive to work together on issues surrounding the use of technology, for effective inclusion of students with disabilities within the general education environment, ensuring that they are entitled to the same high standards and effective instruction that is available to the non-disabled students. It is essential to focus and build on the strengths and capabilities of the students, with the necessary support and assistance, to give more room to their abilities in order to address their 'disabilities'.

Interventions, to be inclusive, should therefore not only be at the individual level, like medical rehabilitation, but also at the societal level, with provision of necessary support services, a universal design to make infrastructure more accessible, and a change in attitude and perception regarding disability; promoting 'Assistive Technology' broadly spells out a continuum of tools, strategies, and services that match a person's needs, abilities and tasks, and includes evaluation of the needs of an individual with a disability, a functional evaluation of the individual in the individual's customary environment, and the selection, designing, fitting, customization, adaption, application, maintenance, repair, and replacement of assistive technology services, and their coordination with the existing education and rehabilitation plans and programs for inclusive development.

REFERENCE

- Ahmad, Fouzia Khursheed (2014): "Assistive Provisions for the Education of Students with Learning Disabilities in Delhi Schools." *International Journal of Fundamental and Applied Research*, vol.2, no 9. pp.9-16.
- Ahmad, Fouzia Khursheed (2015a): "Challenging Exclusion: Issues and Concerns in Inclusive Education in India." *Researchpaedia*, vol.2, no.1, pp.15-32.
- Chitiyo, M. (2007): "Special education in Zimbabwe: Issues and trends" *The Journal of the International Association of Special Education*, vol. 7, no. 1, pp. 22-27.
- Ellsworth, N. J. and Zhang, C. 2007. "Progress and challenges in China's special education development" *Remedial and Special Education*, vol. 28, no. 1, pp. 58 - 64.



EFFECT OF AEROBIC EXERCISE ON SELECTED PHYSIOLOGICAL VARIABLES AMONG FEMALE STUDENTS

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ABSTRACT

The aim of this study is to find out the effect of aerobic exercises on selected physiological variables in Pondicherry female students. Thirty female students were selected randomly from the Pondicherry University Hostels. For this research, the subjects were divided randomly into two groups namely one control and one experimental group consisting of fifteen girls in each group. The subject's age ranged between 20 to 25 years. Experimental groups were given 8 weeks aerobic exercise training and the control group were not allowed to participate in any of the training programmes. The training programme was given six days in a week. Pre-test and Post-test was conducted for both the groups on heart rate and their BMI before and after the training. The data pertaining to the variables under the study had been statistically analyzed by using analysis of covariance in order to determine the difference among the control and experimental group in pre and post-tests. The obtained 'F' ratio was tested for significance at 0.05 level of confidence.

KEYWORDS: *Experimental, Physiology, Biking, Rowing, Skating, Cycling,*

INTRODUCTION

Over the past three decades the fitness activity known as aerobics has evolved from its rough and ready beginnings into one of the most popular and widely used forms of exercise in the world. Once taught by anyone with enough enthusiasm and a loud voice, it is now a skilled science taught by specifically trained fitness professionals with high levels of knowledge in the fields of human kinesiology, physiology, anatomy and exercise theory. Participating in regular aerobic exercise is important to our health. With all the technology around to make our lives easier, it is easy to forget that our bodies are designed to move. In times gone by, our daily lives were full of exercise and fitness and was less about running a race or swimming laps and more about working outside. Aerobic exercise is an important aspect of living a healthy lifestyle. Running, biking, swimming, and even walking can provide people with a host of health benefits that can last their entire lives. Consistent aerobic exercise not only improves cardiovascular health and performance, but can help build stronger bones, improve your sleep, and even extend your life.

The old saying ‘use it or lose it’ is particularly important these days. In order for our muscles and bones to stay strong, and our bodies to stay healthy, we need to perform some sort of aerobic exercise each day. The current physical activity guidelines recommend that adults enjoy some aerobic exercise for a minimum of 30 minutes most days of the week but every day is best. This can be any exercise that raises your heart rate and breathing such as walking, jogging, swimming, rowing, skating, cycling, and dancing. Physical fitness is described by the World Health Organization as “the ability to carry out daily tasks with vigour and alertness, without undue fatigue, and with ample reserve energy to enjoy leisure pursuits and meet unforeseen emergencies”. It is essential that everyone should try to maintain their health and fitness through regular exercise and a reasonably sensible diet. Aerobic Dance Exercise provides one of the most comprehensive, safe and time-efficient means of achieving overall fitness.

Heart rate is normally 60 to 80 beats per minute but is often lower in trained athletes. Heart rate increases as you exercise to deliver more blood and oxygen to your working muscles. Intense exercise causes a steeper increase in your heart rate than moderate exercise. People who don't exercise regularly tend to have higher heart rates with physical exertion than those who are fit. Being in the heat, feeling dehydrated, having a high body mass index and getting up in years also tend to cause your heart to beat faster during exercise. After finish exercising, our heart rate remains high for a few minutes as you recover.

Health Effects of Aerobic Activity

Those are just a few of the noticeable benefits of aerobic activity. Some are more subtle and can be counted by what doesn't happen or what it prevents.

- Aerobic activity can lower the incidence of high blood pressure and high cholesterol.
- It can increase the amount of high-density lipoprotein (HDL) - which is the good cholesterol that your body wants and uses.
- It can decrease triglyceride levels.
- It can help you lose, control or maintain your weight.
- It can help to alleviate muscle pain and soreness.
- Regular aerobic activity may be effective at lowering your risks of certain types of cancers.

- Getting regular aerobic exercise increases bone density, which helps to prevent the loss in bone mineralization that leads to osteoporosis.
- It strengthens your immune system.
- Aerobic exercise can help prevent and control type 2 diabetes by decreasing your body's insulin requirements and controlling blood glucose.
- It increases your energy levels.
- Aerobic activity strengthens muscles, joints, ligaments and tendons.

METHODOLOGY

The study was designed to find out the effect of aerobic exercises on selected physiological variables in Pondicherry university female students.

Sample

The sample includes thirty female students from the hostels of Pondicherry University. All of the subjects are in the age group of 20 to 25 years from Pondicherry University.

Procedure

A total of 30 Participants were randomly selected for the study and are randomly assigned to control and experimental groups with 15 members in each group. They were divided into two groups experimental and control and the control group was not involved in any training programme other than their routine work. Heart rate and BMI was measured for both the control and experimental group. The results of pre-test and post-test were compared by using analysis of covariance (ANCOVA). Resting heart rate and BMI was measured for both the control and experimental group. The training period was limited to 8 weeks.

Result and Discussion

It is observed from table I that the pre-test means on pulse rate of the experimental and control groups are 77.87 and 78.60 respectively. The obtained 'F' ratio value 1.13 for the pre-test mean was lesser than the required table value 4.20 for 1 & 28 degrees of freedom at 0.05 level of confidence. This results reveals that there was no significance difference between control and experimental groups on heart rate before the commencement of the training. The post-test means on heart rate of the control and experimental groups are 79.20 and 73.20 respectively. The obtained 'F' ratio value 31.14 for the post-test data was greater than the required table value 4.20 for 1 & 28 degrees of freedom at 0.05 levels of confidence. It discloses that there was a statistically significance difference between the control and experimental groups on heart rate after the training.

Table II shows the pre-test means of BMI of experimental and control groups are 25.64 and 26.03 respectively. The obtained 'F' ratio value 1.048 for the pre-test was lesser than the required table value 4.20 for 1 & 28 degrees of freedom at 0.05 level of confidence. This results reveals that there was no significance difference between control and experimental groups on BMI before the commencement of training. The post-test means on BMI of the control and experimental groups are 26.64 and 23.80. The obtained 'F' ratio value 80.365 for the post-test data was greater than the required table value 4.20 for 1 & 28 degrees of freedom at 0.05 levels

of confidence. It reveals that there was a statistically significance difference between the control and experimental groups on BMI after the training.

This study contributes to the literature by showing that there may need to be more exercise, communication about the priority to the benefits of exercise to students. Future research should be conducted on finding the optimal combination of the type of exercise and duration of exercise to help students to improve their overall health. It is suggested that colleges and universities may try to find more time for structured physical activity for the students.

TABLE 1
PRE, POST AND ADJUSTED POST TEST SCORES OF HEART RATE IN
EXPERIMENTAL AND CONTROL GROUP

Significant at 0.05 level

Required table value at 0.05 level of significance for 1 & 28 degrees of freedom =4.20,

		Experimen tal Group	Control Group	sov	Sum of Squares	d. f.	Mean Squares	'F' ratio	Sig.
Pre	Mean	77.87	78.60	B	4.03	1	4.03	1.13	.295
	S.D	2.13	1.59	W	99.33	28	3.55		
Post	Mean	73.20	79.20	B	270	1	270.0	31.14	.000*
	S.D	1.90	3.71	W	242.80	28	8.67		
Adjusted Mean		73.49	78.91	B	212.28	1	212.28	31.46	.000*
				W	182.178	27	6.75		

1 & 27 degrees of freedom= 4.21

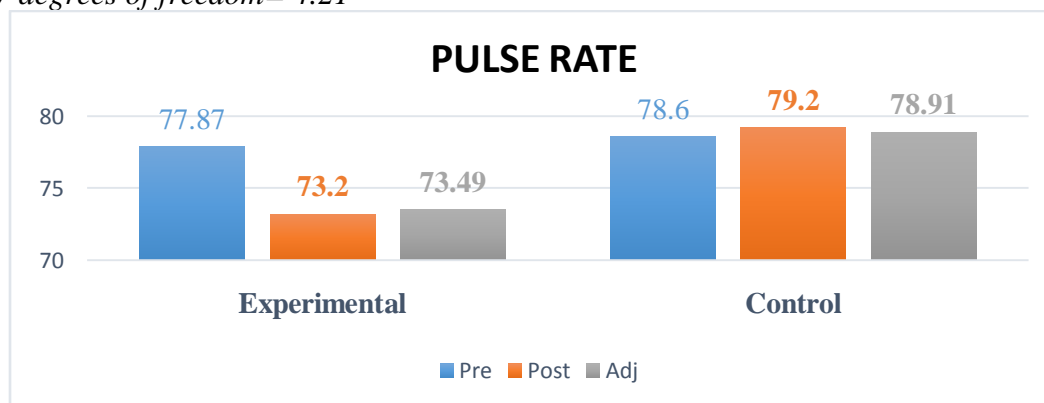
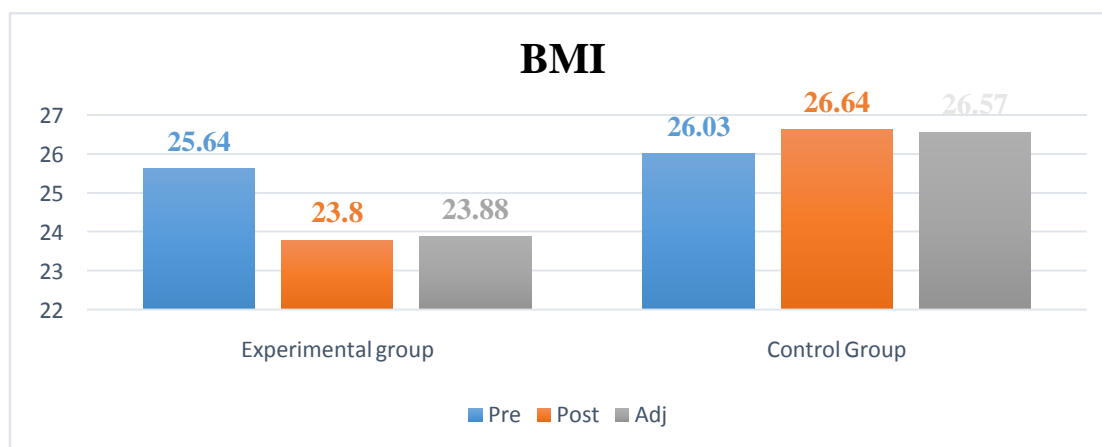


TABLE 1
PRE, POST AND ADJUSTED POST TEST SCORES OF BMI IN EXPERIMENTAL
AND CONTROL GROUP

BMI		Experiment al Group	Control Group	sov	Sum of Squares	d. f.	Mean Squares	'F' ratio	Sig.
Pre	Mean	25.64	26.03	B	1.121	1	1.12	1.048	.315
	S.D	0.84	1.19	W	29.971	28	1.07		
Post	Mean	23.80	26.64	B	60.492	1	60.49	80.36 5	.000*
	S.D	0.85	0.88	W	21.076	28	.75		
Adjusted Mean		23.88	26.57	B	52.332	1	52.33	85.14 9	.000*
				W	16.594	27	.62		

Significant at 0.05 level

*Required table value at 0.05 level of significance for 1 & 28 degrees of freedom =4.20,
1 & 27 degrees of freedom= 4.21*



CONCLUSION AND RECOMMENDATIONS

On the basis of findings and within the limitations of the study the researcher came into the conclusion that the heart rate and BMI for the experimental group has decreased due to aerobic exercise programme. Various studies shows that the aerobic exercise programme will help the female students to improve their heart rate and BMI. It is recommend to inculcate more aerobic activity programmes in colleges and universities for both sex to improve the overall healthof the students.

REFERENCE

1. ChingLan, et. al., “Cardiorespiratory function, flexibility, and body composition among geriatric Tai Chi Chuan practitioners” *Archives of Physical Medicine and Rehabilitation*, (77)6, (1996): 612-616.
2. Jill May AReference Manual for Teachers of Dance Exercise, WFoulsham&Co. Ltd., 1988.
3. John P. Porcari, et. al., “Effects of a 10-week step aerobics training program on the aerobic power and body composition of college-age women” *Research in Sports Medicine*, 5 (4), (1995); 321 – 329.
4. Kenneth H Cooper&Mildred Cooper, “*TheNewAerobics for Women*” Bantam Books: New York, 1988.
5. Zivkovic, “The effects of the regular forms of recreational activities of women aged 19 to 25.” *Journal of Strength & Conditioning Research*: (2005).



INTERNET–AN INNOVATIVE TOOL FOR PERSONS WITH HEARING IMPAIRMENT

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ABSTRACT

Usage of Internet is increasing day by day. Persons with Hearing Impairment are also using Internet for various reasons. In this study an analysis was made to find out the Usage of Internet among Persons with Hearing Impairment. The present study adopted descriptive survey method and a survey has been employed for the data collection. The sample comprised of 300 Persons with Hearing Impairment eighteen and above years of age. The results revealed that Internet as an innovative and empowering agent for the Persons with Hearing Impairment. This scale with five points indicated the ratings as 'Strongly Agree', 'Agree', 'Neutral', 'Disagree' and 'Strongly Disagree'. In addition, there were two multiple choice questions to find out the impact of Internet in terms of 'increase', 'decrease' or 'stable' in the usage in a period of one year and also find out the entry time into Internet in terms of 'minimum Six months to maximum more than Three Years'. Barak and Sadovsky suggest that the internet serves as an empowering agent for Persons with hearing impairment. Their finding is particularly significant because previous work indicates that adults with hearing impairment have lower self-esteem than their hearing peers, even when their educational backgrounds are comparable (Weisel&Kamara, 2005).

KEYWORDS: *Hearing Impairment, Descriptive, Psychological*

INTRODUCTION

Internet offers a variety of avenues through which we can communicate with people. In fact, Internet is known to have been used widely in educational field also. Over the last 30 years the nature of communication has undergone a substantial change and it is still changing. Online communication tools also have the potential to increase awareness of the movements of professional or social contacts. According to Pew Research Results (2017), the total Population of the globe is 7.436 billion and 3.77 billion global internet users in 2017. More than half of the world's population now uses the internet.

NEED FOR THE STUDY

Communication technologies do not only confer practical benefits, but may also contribute to overarching psychological empowerment for Persons with hearing impairment (Barak & Sadovsky, 2008). Hearing impaired adolescents who use the internet more extensively exhibited less loneliness and higher self-esteem than those who were not intensive users, and overall well-being that were comparable to their hearing peers (Barak & Sadovsky, 2008). Barak and Sadovsky suggest that the internet serves as an empowering agent for Persons with hearing impairment. Their finding is particularly significant because previous work indicates that adults with hearing impairment have lower self-esteem than their hearing peers, even when their educational backgrounds are comparable (Weisel & Kamara, 2005). Internet may contribute to practical and psychological outcomes for persons with hearing impairment.

METHODOLOGY

The present study adopted Descriptive survey method and a survey has been employed for the data collection. The sample comprised of 300 Persons with Hearing Impairment eighteen and above years of age. Purposive sampling technique was used to select the sample. The investigator prepared a rating scale for assessing the usage of internet.

The scale consisted of three questions. The first question has eight sub questions based on purpose for which internet was used. The purposes included in the tool were Playing Games, Collecting information about current events, Social Networking, Online purchase, Creating journals/blogs, Sharing own creations like photos, Videos and stories, Downloading online materials & remixing and Video calls & chat. This scale with five points indicated the ratings as 'Strongly agree', 'agree', 'Neutral', 'Disagree' and 'Strongly Disagree'. In addition, there were two multiple choice questions to find out the impact of Internet in terms of 'increase', 'decrease' or 'stable' in the usage in a period of one year and also find out the entry time into Internet in terms of 'minimum Six months to maximum more than Three Years'.

RESULTS AND DISCUSSIONS

An analysis was made to find out the Usage of Internet among Persons with Hearing Impairment. The following are the results. The effectiveness of Internet Usage depends on the purposes for which it was being used. Various purposes have been included and the results are tabled below.

TABLE 1
PURPOSE OF INTERNET USAGE

Purpose of Internet Usage		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Games	No.	139	59	29	49	24	300
	%	46.3	19.7	9.7	16.3	8.0	100.0
News / information about current events /politics	No.	118	76	35	54	17	300
	%	39.3	25.3	11.7	18.0	5.7	100.0
Social networking	No.	165	62	23	31	19	300
	%	55.0	20.7	7.7	10.3	6.3	100.0
Online purchase	No.	107	72	35	62	24	300
	%	35.7	24.0	11.7	20.7	8.0	100.0
Create or work on your own online journal or blog	No.	105	74	37	63	21	300
	%	35.0	24.7	12.3	21.0	7.0	100.0
Share own creation online	No.	141	84	25	37	13	300
	%	47.0	28.0	8.3	12.3	4.3	100.0
Take material you find online	No.	120	62	35	73	10	300
	%	40.0	20.7	11.7	24.3	3.3	100.0
Video call or chat	No.	124	74	19	61	22	300
	%	41.3	24.7	6.3	20.3	7.3	100.0

The results revealed that more than fifty percent of the participants were agreed and strongly agreed stating they used internet for various purposes mentioned in the table. Among the respondents, 55% of them used Internet for Social networking followed by sharing own creation online, above 46% used for Games and above 35% used for online purchase.

Extent of using Internet: Comparison by Year

The change in the usage of Internet was compared for the period of one year and the following table shows the result.

TABLE 2
EXTENT OF USING INTERNET: COMPARISON BY YEAR

Extent of Usage	No.	Percent
Significantly Increased	133	44.3
Increased	105	35.0
No Change	37	12.3
Decreased	14	4.7

Significantly Decreased	11	3.7
Total	300	100.0

Most of the participants responded that their internet use was significantly increased (44%) or somewhat (35%) increased. About 4% expressed their usage decreased.

Becoming Internet User

An analysis was done to find out when they become Internet user. The following table reveals the outcome of the analysis.

TABLE 3
BECOMING INTERNET USER

Time at which respondent becomes the Internet user	No.	Percent
Six months or less	72	24.0
A year	133	44.3
Two years	26	8.7
Three years	18	6.0
More than 3 years	51	17.0
Total	300	100.0

Among the participants it shows 44% was using internet from a year ago at the maximum and 24% using it for six months or less. This shows the internet usage was being popularized among the persons with hearing impairment recently.

CONCLUSION

The practical and psychological benefits of internet may play a role in a variety of settings for persons with hearing impairment; not only contributing to positive outcomes in like settings, but also spilling over to other settings.

REFERENCES

Akamatsu, C., Mayer, C and Farrelly, S (2005). An investigation of two-way text messaging use with deaf students at the secondary level. *Journal of Deaf Studies and Deaf Education*, 10, 120-131.

Pew Internet & American Life Project (2009a). *Demographics of teen internet users*.

Pilling, Doria, Paul Barrett and Michael Floyd (2004) *Disabled People and the Internet: Experiences, Barriers and Opportunities*. York: The Joseph Rowntree Foundation. (<http://www.jrf.org.uk/knowledge/findings/socialcare/524.asp>)

Retrieved June 21, 2011, from <http://www.Pewinternet.org/Static-Pages/Trend-Data-for-Teens/Whos-Online.aspx>

Valentine, G., & Skelton, T. (2009). An umbilical cord to the world: the role of the internet in D/deaf people's information and communication practices. *Information, Communication & Society*, (12) 1, 44-65.



ENHANCEMENT OF ACADEMIC PERFORMANCE OF SCHOLARS THROUGH SPORTS AND PHYSICAL ACTIVITY

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ABSTRACT

"A sound mind resides only in a sound body" is an English Proverb. This quality is nurtured by parents, coaches and spectators. Playing fair, following the rules of the game, respecting the officials and treating the opponents with respect are the skills acquired by the scholars involved in sports. In spite of giving much importance to collection, development and provision of enhanced library services, the number of turnout to the library is decreasing. A user study is conducted to identify the information needs of scholars. This has been measured in terms of getting degrees, publication of papers and participating and attending conferences, seminars and workshops by the scholars. The respondents are asked to state about their research productivity in terms of research paper published. Sports and games stimulate cooperation, sharing and compassion in scholars. Playing games regularly is helpful to maintain physical stamina and raise the habit of obedience, discipline, determination and willpower. Hence it is the need of the hour to introduce innovative services, document delivery system and disseminate information to quicken the retrieval of information. The significant role of librarian is to provide efficient and effective service to the user at the right time by reducing the real time by facilitating the services as user friendly. Let us walk towards the digitized world with innovative library services.

KEYWORDS: Recognized, Leadership, Sharing, Obedience, Discipline,

INTRODUCTION

Information is recognized as a vital source indispensable for the development of an individual and the society. It regulates creative thoughts, sharpens the outlook and making man fit for survival in the world. Advent of computer and communication technology brings changes in the learning process of scholars in the academic institutions, load more stress and with no physical activities. "A sound mind resides only in a sound body" is an English Proverb. This proverb elucidates the importance of sports in student life. Academic learning and sports education are the two sides of a coin. This sports education enriches overall personality of the student to a great extent. Sports instill the qualities of leadership, sharing, team spirit and tolerance.

Sports and games stimulate cooperation, sharing and compassion in scholars. Playing games regularly is helpful to maintain physical stamina and raise the habit of obedience, discipline, determination and willpower. Sportsmanship is the character, practice and skill to be practiced and nurtured. This quality is nurtured by parents, coaches and spectators. Playing fair, following the rules of the game, respecting the officials and treating the opponents with respect are the skills acquired by the scholars involved in sports. Team spirit is also another character of the sports personnel it can be nurtured. In games the players must cooperate with one another, without cooperation, success is impossible. Cooperation among the players indeed lays strength. True sportsmanship binds number of people together and they work harmoniously without frictions and mutual jealousy. This character demands cheerfulness even in the face of a defeat.

The present study was confined to the sports provoke academic performance of scholars of Avinashilingam Institute for Home Science and Higher Education for Women. Established in 1957, this Institute plays a vital role in increasing female literacy rate in and around Coimbatore city. Introduced innovative methods in teaching, evaluation, research, outreach programme and provides an environment conducive to learning and development. The central library houses 2,10,340 volumes comprising of Books, Journals, Thesis, Back volumes, Non-book materials, etc. It also provides access to more than 20,684 electronic journals, 2470 e-Books and SCOPUS, EBSCO databases. The users of this library system constitute faculty, research scholars, scholars, and educational administrators.

NEED FOR THE STUDY

The development of a nation depends upon the quality of education imparted to its citizen. The motivation to acquire knowledge through open reading is highly anticipated among university scholars because academic performances of the scholars depend not only on the teaching methods, curriculum but also on the knowledge gained by them through extra reading. In spite of giving much importance to collection, development and provision of enhanced library services, the number of turnout to the library is decreasing. A user study is conducted to identify the information needs of scholars. This is done by identifying the strengths and weaknesses of library resources and the retrieval techniques.

STATEMENT OF THE PROBLEM

Due to the information deluge, the scholars face difficulty in locating and making use of the information in print as well as in e-form. Accessing resources offer opportunities to retrieve accurate and relevant information from wide range of literature. The library of Avinashilingam Institute for Home Science and Higher Education for Women is dated back to 1958. It is constantly shaping up to accommodate the information explosion. It is imperative to know the

accessible resources in the field of physical education and the retrieval techniques followed by the scholars. Hence a study is planned to enhance the resources and improve the searching techniques.

OBJECTIVES OF THE STUDY

Following are the objectives framed in the study:

- extent of use of library by the sample
- information needs of the sample
- various sources and channels of information used by the sample
- use of library by the users for their professional growth
- extent of use of library services by the sample and
- extent of use of information technology by the library users
-

HYPOTHESES

The following hypotheses were formulated in relation to the problem:

- There is no significant relationship between sports participation and academic performance of scholars of various faculties and
- information sources used

REVIEW OF LITERATURE

Scholars are interested in updating their knowledge, spending more time on the internet for browsing electronic resources than the printed resources. **Wang (2011)** exposed that the major Information seeking activities were handled in both traditional and diverse new ways in the Internet environment. **Haines et al (2010)** recommended maximizing the use of library resources and services by the researchers, the library resources must be accessible via departmental websites. **Vezzosi (2009)** highlighted that doctoral scholars rely heavily on the internet for their research work. With the advent of computers and communication technologies, libraries can provide access to these resources through personal computers and laptops to the scholars within the Library and remote. This study intended to assess the academic achievement of scholars of Avinashilingam Institute for Home Science and Higher Education for Women library and to determine the extent of use of library resources by them.

METHODOLOGY

The focus of this study is the extent of sports and academic performance of scholars of various faculties of Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore. The sample size is about 166 consisting of academic researchers from approximately 41 different departments. The investigator consulted a group of experts and modified drafted questionnaire based on their comments. A questionnaire containing both open-ended and closed questions was prepared and distributed to one hundred and sixty six research scholars. The respondents were requested to fill in the questionnaire given to them. The responses received from the research scholars were tabulated and subjected to further statistical analysis.

ACADEMIC PERFORMANCE

Academic performance refers to how successfully one achieves the educational goal by utilizing the resources and services of the library. This has been measured in terms of getting degrees, publication of papers and participating and attending conferences, seminars and workshops by the scholars. The respondents are asked to state about their research productivity in terms of research paper published. The analyses of the academic performance of the scholars have been done on their information seeking behaviour, retention and exhibition of acquired knowledge through various achievements in their field and profession. The results are as follows:

ACADEMIC PERFORMANCE OF SCHOLARS

The obtained data from the scholars on academic performance were scored and the maximum score possible was 75. Samples' scores were ranging from 21 to 50. Table 1 shows the distribution of scores on academic performance of scholars different faculties of the university:

TABLE 1
ACADEMIC PERFORMANCE SCORES OF SCHOLARS

Academic Performance Scores of Researchers (N=166)							
Name of the Faculty	21 to 30		31 to 40		41 to 50		Total
	No. of Researchers	%	No. of Researchers	%	No. of Researchers	%	No. of Researchers
Business Administration	4	36	7	64	-	-	11
Community Education	-	-	2	100	-	-	2
Education	-	-	12	100	-	-	12
Engineering	-	-	5	100	-	-	5
Home Science	2	4	46	87	5	9	53
Humanities	22	81	5	19			27
Science					56	100	56
Total	28	17	77	46	61	37	166

The results presented in Table 1 proved that out of 166 researchers, 17 percent have scored 21 to 30, 46 percent scored 31 to 40 and remaining 37 percent scored 41 to 50. Thus, the researchers' academic performance is low compared to the Faculty Members of the same faculty.

The obtained scores were further analysed using descriptive statistics and the results obtained for mean, standard deviation, minimum and maximum scores for the academic performance of researchers are presented in Table 2:

TABLE 2
DESCRIPTIVE ANALYSIS OF ACADEMIC PERFORMANCE OF RESEARCHERS
OF VARIOUS FACULTIES

Name of the Faculty	N	Mean	Std. Deviation	Minimum Score	Maximum Score
Business Administration	11	31.36	1.501	30	34
Community Education	2	39.5	0.707	39	40
Education	12	35.25	2.340	32	39
Engineering	5	37.4	0.547	37	38
Home Science	53	34.21	3.381	30	43
Humanities	27	28.88	1.671	27	33
Science	56	45.18	2.643	41	50
Total	166	35.96	1.881	27	50

The results presented in Table 2 proved that the range of scores were from 27 to 50. The lowest mean score was 28.88 of Researchers in Humanities faculty and the highest mean score was 45.18 of Researchers in Science faculty. The overall mean score of the researchers was 35.96 with standard deviation ± 1.881 .

The obtained mean values on achievement performance of the researchers are presented as a bar diagram in Fig: 1:

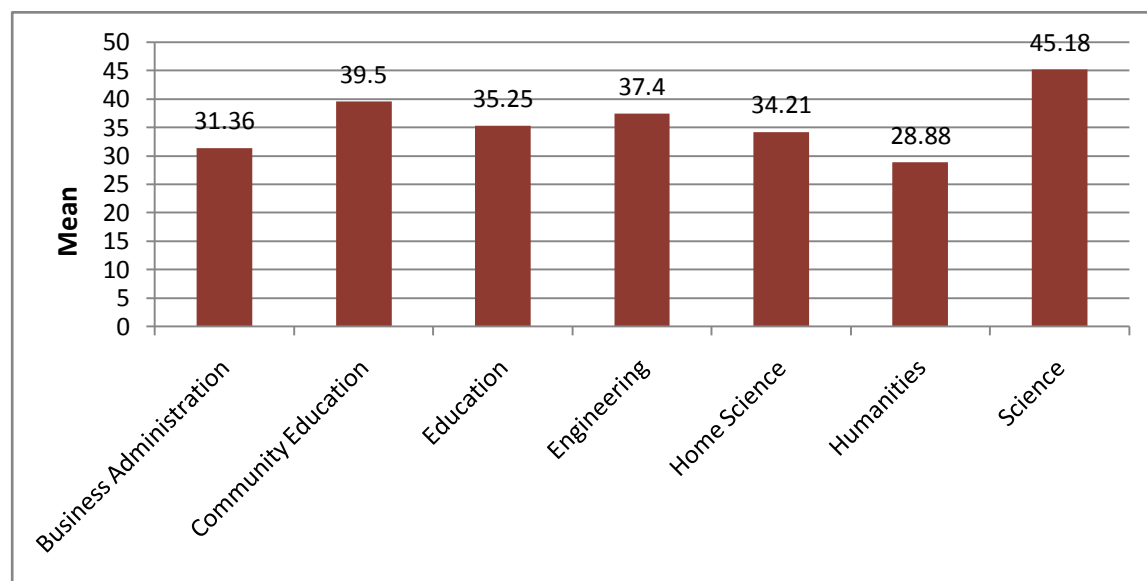


Figure 1 Mean Values on Academic Performance of Researchers of Various Faculties

Since there were differences in the mean scores of the researchers on academic performance levels, the obtained data were further subjected to Analysis of Variance to test the statistical significance of the differences that existed and the results obtained are presented in Table 3:

TABLE 3
ANOVA RESULTS OF THE DIFFERENCES IN ACADEMIC PERFORMANCE
AMONG RESEARCHERS

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between Groups	6333.551	6	1055.592	147.734**
Within Groups	1136.093	159	7.145	
Total	7469.645	165		

****Significant at 0.01 level {Required table F df (1,159) at 0.01 level 2.8020}**

The results presented in Table 3 proved that there were significant differences on means of academic performance of the researchers as the obtained F-value of 147.734 is greater than the table value of 2.8020 and is significant at 0.01 level.

Since significant F-value was obtained the results were further subjected to statistical treatment using multiple paired mean comparisons and the results obtained shows that the researchers of Science Faculty have scored higher in academic performance (45.18/75) than the researchers of other six faculties namely, Community Education (39.5), Engineering (37.4), Education (35.25), Home Science (34.21), Business Administration (31.36) and Humanities (28.88). Hence it is concluded that the researchers of Science faculty is better in academic performance than the researchers of other six faculties.

Hence the null hypothesis Ho1 stated as that, **“There is no significant relationship among the sports participation and scores of academic performance obtained by researchers of various faculties”** is rejected.

MAJOR FINDINGS

The major findings of the study are as follows:

- Majority (67.46) of the researchers has high information needs very often
- From the analysis, it is clear that 35 percent of the research scholars utilize electronic resources
- The findings indicate that the research scholars (46 percent) are involved in publishing papers and participating in conferences more, 37 percent of them have good academic records with SLET or NET and 17 percent of them are less interested in attending conferences than the other faculty researchers.

CONCLUSION

Knowledge society has gained prominence due to the advances in technology and its applications. This society has to address issues about how information and ideas are to be created and adopted at an accelerating speed. Involvement of users in the development plan of library infrastructure and services would certainly enhance the utilization of the library resources. User-centered libraries are greater blessings than system-centered ones. Resources and services of the library must cater to the users requirements so that complete satisfaction as per research is achieved. Hence it is the need of the hour to introduce innovative services, document delivery system and disseminate information to quicken the retrieval of information. The significant role of librarian is to provide efficient and effective service to the user at the right

time by reducing the real time by facilitating the services as user friendly. Let us walk towards the digitized world with innovative library services.

REFERENCES

1. **Haines, L., Light, J., O'Malley, D. and Delwiche, F. (2010).** Information-seeking behavior of basic science researchers: implications for library services. Journal of the Medical Library Association, Vol.98, No.1, pp.73-81.
2. **Vezzosi, Monica. (2009).** Doctoral students' information behaviour: an exploratory study at the University of Parma (Italy).New Library World, Vol. 110, No.1-2, pp.65-80.
3. **Wang, Peiling (2011).** Information Behavior and Seeking. In Diane Kelly and Ian Ruthven edited Information Retrieve Interaction. Interactive Information Seeking and Retrieval. ISBN: 978-1-85604-707-4 London: Facet Publishing. pp. 15-42.



CHIPPING OF DISABLED CHILDREN IN CORPOREAL MOTION

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ABSTRACT

The primary objective of this study was to examine the use of this term in reference to active, health-associated levels of PA. The primary inclusion criterion was the use of the key terms “physical activity, sport, active, or recreation” in combination with “participation” as a measurable construct. Three trained research assistants independently screened titles and abstracts using this primary inclusion criterion. Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) standard guidelines were followed, as per recommended practice. The final data set was reviewed for emergent themes in the guiding framework, definition of key terms and assessment measures. Assessments used included the Children’s Activity, Participation and Enjoyment (CAPE) measure, the Child Behavior Checklist (CBCL), and the Participation and Activity Limitation Survey (PALS). There are challenges, however, with translating this to a scale of health, because we know little about the children’s physical and psychosocial experiences while engaged in sport. Similarly, differences in frequency or intensity between age groups, gender, or disability status.

KEYWORDS: *Physical Activity, Sport, PRISMA, CAPE And PALS.*

INTRODUCTION

Participation in PA opportunities is a fundamental childhood experience that fosters the psychosocial development of interpersonal skills, self-confidence, and self-efficacy (**Fowler EG 2007**) Increased PA participation is a primary goal expressed by parents and professionals for disabled children. *Participation* is broadly conceptualized as “involvement in life situations” within psychology and disability related literature, but ambiguity surrounds the intended meaning of the term (**Rimmer JH**) as a measurable index of health relative to being physically active.

Kang et al. cautions against inferring *poor* health from observed *differences* in frequency and intensity of PA participation between disabled and non-disabled children, without consideration for quality of children’s experiences. For children who experience physical disabilities, they define optimal recreation and leisure participation as the quality of child–environment interactions reflected in individualized (objective and subjective) physical, social, and self-engagement outcome measures.

Framing corporeal motion Chipping

Reduced opportunities may limit a child’s exposure to fundamentally important physical, social, and personal experiences for health development. From an equity standpoint, additional qualifiers are needed to describe and appropriately measure PA patterns as a health index across disabled and non-disabled children. This requires a comprehensive discussion of both physical performance and psychosocial aspects of inclusion.

Subsequent attention has been given to identifying key activity restrictions or anatomical impairments, such as muscle weakness or low motor skill proficiency, to explain the limited PA engagement of disabled children. The term participation gained hold as a health indicator following the introduction of the International Classification of Functioning, Disability and Health (ICF) framework from the World Health Organization (WHO) in 2001.

A systematic review of contemporary literature (published between 2000 and 2016), explicitly investigating PA participation as a health construct for disabled children, was conducted. The operationalized definition of this key construct and implemented measurement practices were evaluated to support our understanding of this phenomenon and inform future research efforts.

METHODS

Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) standard guidelines were followed, as per recommended practice. An electronic database search was conducted in February 2016 and detailed in Appendix A in Supplementary Material.

Initial Screening and Inclusion

The primary objective of this study was to examine the use of this term in reference to active, health-associated levels of PA. The primary inclusion criterion was the use of the key terms “physical activity, sport, active, or recreation” in combination with “participation” as a measurable construct.

Three trained research assistants independently screened titles and abstracts using this primary inclusion criteria, in addition to the following: (a) target population included children or youth, mean age ≤ 18 years, (b) must have included primary data other than case reports, (c) available in

English, and (d) published in a peer-review journal. Exclusion criterion included (a) absence of the key words from the title, abstract, or the text body, (b) participants' mean age was outside the target age range, (c) disabled children were not included as participants, or (d) the term "PA participation" was not used as a measurable outcome.

DATA ANALYSIS

Articles retained after the initial screening underwent full review by three independent researchers. Data on study characteristics, key term definitions, and related measurement and methodology characteristics were extracted and synthesized. Any ambiguity around how the key term was used in an article was discussed among primary authors. The final data set was reviewed for emergent themes in the guiding framework, definition of key terms and assessment measures. A summary of the search and screening process can be found in Appendix A in Supplementary Material.

RESULTS

Physical activity was measured along an alternative involvement dimension of participation within 8 studies (62%). Assessments used included the Children's Activity, Participation and Enjoyment (CAPE) measure, the Child Behavior Checklist [CBCL; (35, and the Participation and Activity Limitation Survey [PALS; Emergent themes from questionnaires and interviews included questions of children's experiences during PA (e.g., where, why, and with whom; 19% of studies), the number of different types of PA opportunities they attended (i.e., diversity; 19% of studies), and their attitudes or opinions about personal PA (10% of studies) and their perceptions or level of enjoyment during PA (2% of studies). Of the 13 studies that used an involvement-oriented measure of PA participation, seven (31%) concurrently assessed PA participation with a performance-oriented measure and either referred to the ICF/ICF-CY or explicitly defined participation as a health construct.

DISCUSSION

The primary objective of this mini-review is to critically examine current conceptual and methodological approaches to examining PA participation as an index of health among disabled children. The spike in publications inclusive of this term in 2015 indicates a growing interest in this phenomenon. As anticipated, discussion of PA participation is predominately occurring within fields of psychology and medical rehabilitation research. The descriptive nature of the included studies, aimed at identifying what PA participation looks like and what it means to disabled children, indicates our understanding of this construct as an index of health is still in its early stages.

CONCLUSION

While it provides a descriptive profile of what, where, with whom, and how often children engage in PA, it does not directly map these behaviors onto health outcomes. The number of sports disabled children attended was associated with their degree of functional impairment. There are challenges, however, with translating this to a scale of health, because we know little about the children's physical and psychosocial experiences while engaged in sport. Similarly, *differences in* frequency or intensity between age groups, gender, or disability are difficult to use as a direct *comparison* of health status across groups.

REFERENCES

1. U.S. Department of Health and Human Services. The Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020: Phase 1 Report Recommendation for the Framework and Format of Healthy People 2020 [Internet]. U.S. Department of Health and Human Services; (2008).
2. Fowler EG, Kolobe TH, Damiano DL, Thorpe DE, Morgan DW, Brunstrom JE, et al. Promotion of physical fitness and prevention of secondary conditions for children with cerebral palsy: section on pediatrics research summit proceedings. *Phys Ther* (2007) 87(11):1495–510.10.2522/ptj.20060116
3. Rimmer JH. Health promotion for people with disabilities: the emerging paradigm shift from disability prevention to prevention of secondary conditions. *Phys Ther* (1999) 79(5):495–502



EFFECT OF CROSS TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG MEN FOOTBALL PLAYERS

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ABSTRACT

The purpose of this study was to find out the effect of cross training on selected physical variables among Men Football players. To achieve the purpose of these study 20 football players from YMCA College of physical education Chennai were selected. The subjects were randomly selected among the players who represented the college at inter college level tournaments. The subjects were in the age group of 18 to 25. The subjects were given training programme for three days per week for six weeks. Equated group random pre and posttest research design was followed by the investigator. After the Cross training for six weeks, the subjects were measured. The difference between the initial and final score was the effect of cross training. The obtained data were subjected to statistical treatment using 't' test. In all cases 0.05 levels was fixed to test the hypothesis of this study.

KEYWORDS: Capacity, Irrelevant, Depression,

INTRODUCTION

Exercise and physical activity benefit every area of our life. It helps to maintain and improve your physical strength and fitness, helps to improve your ability to do the things you want to do, helps to improve your balance, helps to manage and prevent diseases like diabetes, heart disease, osteoporosis, helps to reduce feelings of depression, may improve mood and overall well-being, and may improve or maintain some aspects of cognitive function, such as your ability to shift quickly between tasks, plan an activity, and ignore irrelevant information

DEFINITION OF THE TERMS

Physical Fitness

Physical fitness refers to the organic capacity of the individual to perform the normal task of daily living without undue tiredness or fatigue having reserves of strength and energy available to meet satisfactorily any emergency demands suddenly placed upon him.

Cross-Training

Cross training is not really a particular activity, it's just a technique that involves using different types of exercise to provide variety, train for sports and/or reduce the risk of repetitive injuries.

Cross training is training or competing in several different sports at the same time. It is a method of exercise training that includes a variety of different athletic activities to improve your level of fitness or performance in a particular sport. Cross training benefits include injury prevention, improved fitness, reduced boredom, and weight loss.

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of cross training on selected physical fitness variables of men football players.

HYPOTHESIS

It was hypothesized that the cross training improves the physical fitness variables of men football players with in a period of 6 weeks.

SELECTION OF SUBJECTS

20 men football players from YMCA College of Physical Education in the age group of 18 to 25 years were selected at random for this study. They were divided into two groups, namely experimental group and control group.

TABLE 1
TABLE SHOWING DESCRIPTIVE STATISTICS AND OBTAINED
'T' VALUE ON SPEED DUE TO CROSS TRAINING.

Group	Mean	MD	SD	SDM	't'
Pre Test	7.94	-0.44	0.31	0.11	3.05*
Post Test	7.50		0.31		
Control group pre	7.87	-	0.17	0.23	1.98

Control group post	8.01	0.31	0.17		
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Required table value df (2,28), 2.43 Significant at 0.05 level

The results presented in Table I showed that the pre test mean value of speed (M: 7.94) was improved to 7.50 after six weeks cross training with mean difference of 0.44. The obtained 't' value of 3.05 was greater than the required 't' value of 2.43. Hence, it was proved that there was significant improvement in speed among men football players due to cross training.

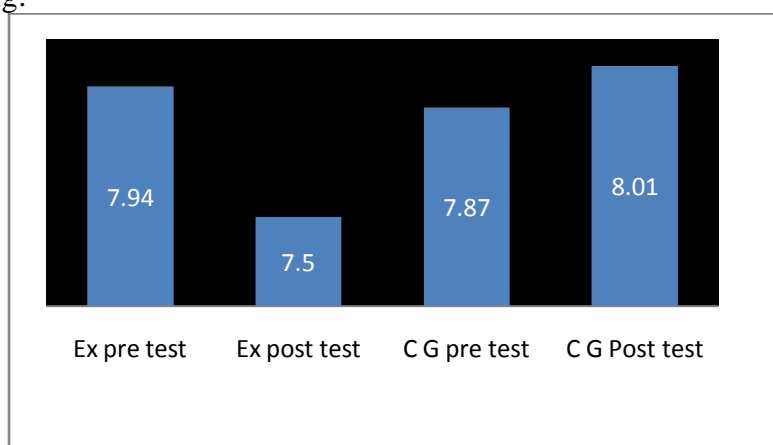


Figure-1

Bar Diagram Showing Mean Value Of Speed Due To Cross Training Among Men Football Players

TABLE 2

TABLE SHOWING DESCRIPTIVE STATISTICS AND OBTAINED 'T' VALUE ON STRENGTH DUE TO CROSS TRAINING

Group	Mean	MD	SD	SDM	't'
Pre Test	5.5	0.78	0.12	0.28	2.98*
Post Test	7.0		0.12		
Control group pre	5.25	0.23	0.91	0.81	1.05
Control group post	5.50		0.91		

Required table value df (2,28), 2.43 Significant at 0.05 level

The results presented in Table II showed that the pre test mean value of strength M: 5.5 was improved to 7.0 after six weeks cross training with mean difference of 0.78. The obtained 't' value of 2.98 was greater than the required 't' value of 2.43. Hence, it was proved that there was significant improvement in strength among men football players due to cross training.

Figure 2
Bar Diagram Showing Mean Value of Strength Due to Cross Training among Men Football Players

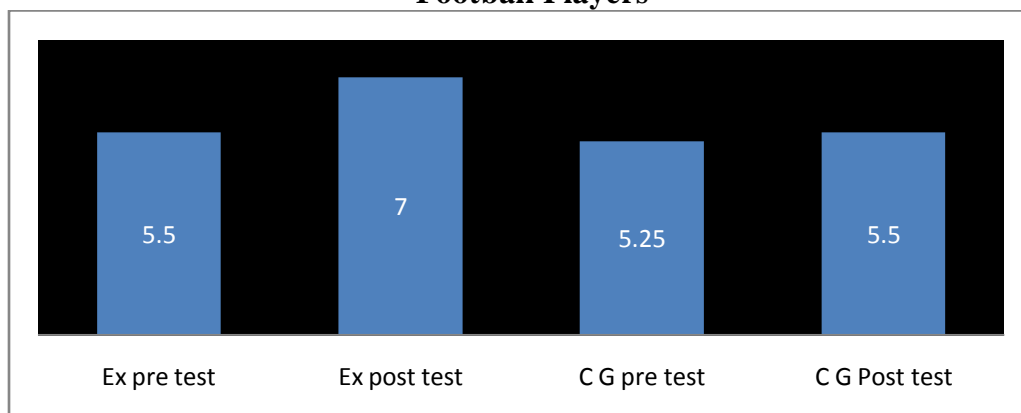


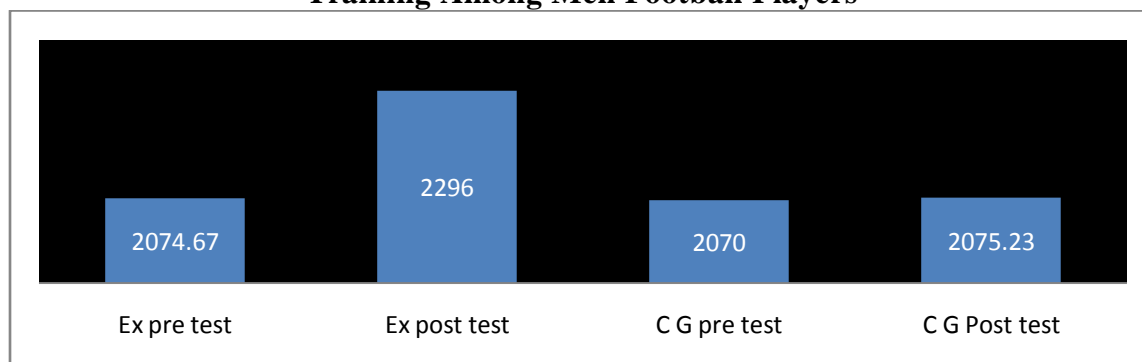
TABLE 3
TABLE SHOWING DESCRIPTIVE STATISTICS AND OBTAINED 'T' VALUE ON ENDURANCE DUE TO CROSS TRAINING

Group	Mean	MD	SD	SDM	't'
Pre Test	2074.67	0.52	0.78	0.11	3.52*
Post Test	2296		0.78		
Control group pre	2070	0.11	0.71	0.23	1.25
Control group post	2075.23		0.71		

Required table value df (2,28), 2.43 Significant at 0.05 level

The results presented in Table III showed that the pre test mean value of Endurance (M: 2074.67) was improved to 2296 after six weeks cross training with mean difference of 0.52. The obtained 't' value of 3.52 was greater than the required 't' value of 2.43. Hence, it was proved that there was significant improvement in endurance among men football players due to cross training.

Figure-3
Bar Diagram Showing Mean Value Of Speed Due To Cross
Training Among Men Football Players



CONCLUSIONS

1. It was concluded that six weeks Cross training significantly improved speed among Men Football players.
2. It was concluded that six weeks Cross training significantly improved Strength among Men Football players.
3. It was concluded that six weeks Cross training significantly improved cardio vascular endurance among Men Football players

REFERENCES

Books

Baid, D.W.E. Controlled Exercise for Physical Fitness, Washington: The Executive 1998

Barrow, Harold M. and Rosemary McGee, A Practical Approach to Measurement in Physical Education, Philadelphia: Febiger and Febiger Ltd., p-22.,1976.

Journals

Cadore, E.L. R.S. Pinto, S.S. Pinto, C.L. Alberton, C.S. Correa, M.P. Tartaruga, E.M.

Silva, A.P.V. Almeida, G.T. Trindade and L.F.M. Kruel, "Effects of Strength, Endurance, and Concurrent Training on Aerobic Power and Dynamic Neuromuscular Economy in Elderly Men", J Strength Cond Res, 25:3, (2011), p.758-766.



IMPACT OF ENDURANCE TRAINING AND CONCURRENT STRENGTH TRAINING AND DETRAINING ON CARDIO RESPIRATORY ENDURANCE OF BASKETBALL PLAYERS

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ABSTRACT

The purpose of this study was to examine the effect of endurance training and concurrent strength and endurance training and detraining on cardio respiratory endurance. Forty five basketball players were selected from Virudhunagar district and they were divided into three equal groups of fifteen each. The first group performed concurrent strength and endurance training and the second group performed endurance training and third group acted as control. After the completion of twelve-weeks training period the subjects of group I and II were physically detrained for forty days. The pre and posttest data on cardio respiratory endurance was statistically analyzed by applying the analysis of covariance (ANCOVA). The data collected on post experimentation and during detraining were statistically analyzed by using two way (3 x 5) factorial ANOVA with last factor repeated measures. Statistical analysis found significant improving in cardio respiratory endurance and significant decline during detraining period.

KEYWORDS: *Concurrent strength and endurance training, Detraining, Cardio respiratory*

INTRODUCTION

Sportsmen in predominately strength and endurance sports are frequently given training programs designed to induce positive changes in both endurance and strength attributes, particularly during the off-season. Strength and conditioning professionals prescribing aerobic exercise for their strength and endurance athletes often cite the benefit of enhanced recovery during the limited rest periods which intersperse the supra maximal work efforts. Recovery from anaerobic exercise is highly dependent upon aerobic metabolism. Thus, aerobic endurance training may help athletes recover more quickly between anaerobic work intervals, such as multiple sets in resistance training or repeated sprints. Strength and endurance athletes may perform endurance exercise in order to maintain an optimal body weight or to reduce body fat levels. Aerobic endurance exercises are an effective and efficient method of reducing body fat. Another possible benefit of aerobic training for strength and endurance athletes is the increased tolerance for exercise in the heat and during hyperthermia in aerobically trained individuals. In extreme heat, 15 to 20% of the cardiac output may be distributed to the skin for heat dissipation (Mcardle *et al.*, 2001). This limits the blood flow to the working muscles. Aerobically-trained individuals have an increased sensitivity and capacity of the sweating response so that they are better able to regulate their body temperatures (Mcardle *et al.*, 2001).

Concurrent training can also yield benefits to those individuals who want to improve their endurance as athletes. The benefits aren't quite as drastic as those seen by untrained individuals, but if we have primarily focused on endurance training, adding strength training can yield some great benefits. Primarily, individuals would be able to put on some lean muscle mass and increase strength. And athletes are able to do this without much of a loss in endurance capacity and often an increase.

Detraining is equally important but that has been given considerably less attention by the athletes and the coaches and practically ignored by the research scholars in exercise and sports sciences. Detraining induces a partial or complete loss of training induced adaptations in response to insufficient training stimuli. The influence of detraining on cardio respiratory endurance has received little attention and not completely understood. The aim of the present study was to assess the effect of endurance training and concurrent strength and endurance training and detraining on cardio respiratory endurance.

METHODOLOGY

To achieve the purpose of the study, Forty five basketball players were selected from Virudhunagar district, were selected as subjects at random. The age of the subjects ranged from 20 to 23 years. The selected subjects were randomly assigned to one of the three groups. The experimental group-I underwent concurrent strength and endurance training and experimental group-II underwent endurance training and group-III acted as control. Further, the researcher was interested in finding out the detraining impact on cardio respiratory endurance. The data on cardio respiratory endurance was collected by administering Cooper's twelve minutes run or walk test. Pretest data were collected prior to the training programme and posttest data were collected immediately after the twelve-weeks of training programme from both the experimental groups and control group.

During the detraining period the data were collected once in ten days for 40 days from both the experimental groups and control group.

Training protocol

The experimental groups underwent their respective training programme three days per week (alternate days) for twelve weeks. The first group performed concurrent strength and endurance training and the second group utilized endurance training only. The endurance training consists of 20-40 minutes running with 65- 80% HRR. The running intensity was determined by a percentage of heart rate reserve (HRR). The strength training program was a total body workout consisting of 3 sets of 6-10 repetitions on 8 exercises that trained all the major muscle groups. Concurrent strength and endurance training group performed every odd numbered week strength training in the morning session and endurance training in the evening session. Every even numbered week they performed endurance training in the morning session and strength training in the evening session. After the completion of twelve-weeks training period the subjects of group I and II were physically detrained for forty days.

Statistical Technique

The data collected from the three groups prior to and post experimentation on cardio respiratory endurance was statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA). Whenever the obtained F ratio value was found to be significant for adjusted posttest means, the Scheffe's test was applied as post hoc test. The data collected on post experimentation and during detraining were statistically analysed by using two way (3 x 5) factorial ANOVA with last factor repeated measures. The simple effect and the Scheffe's test were used as follow up and post hoc test. The analysis of data on cardio respiratory endurance was presented in table-I to V.

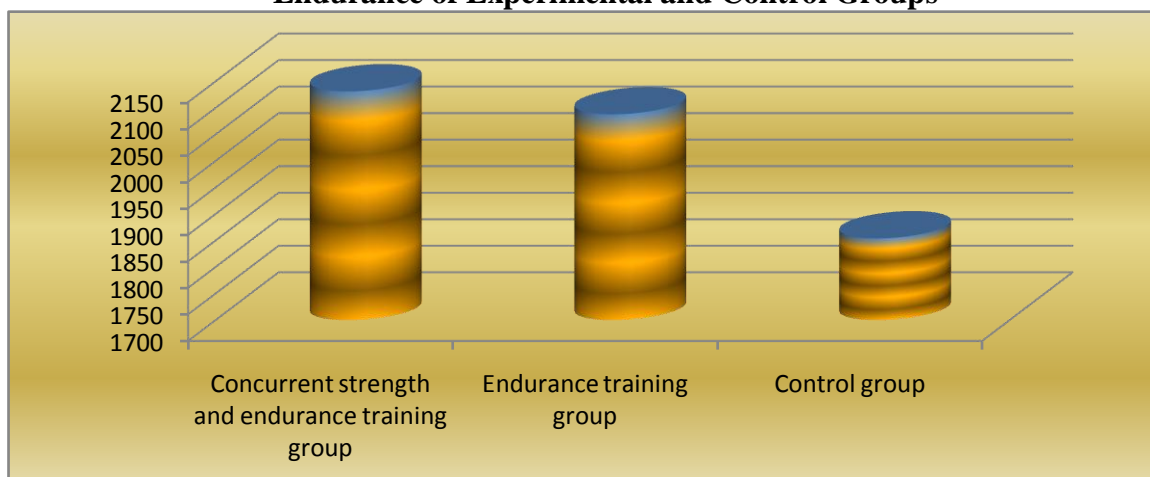
TABLE-1
ANALYSIS OF COVARIANCE ON CARDIO RESPIRATORY ENDURANCE

	Concurrent Training	Endurance Training	Control Group	S o V	SS	df	MS	'F' ratio
Adjusted Post test Mean	2131.42	2088.08	1854.32	B	482451.69	2	211225.85	24.97*
				W	346813.78	41	8458.87	

The required table value for significance at 0.05 level of confidence with degrees of freedom 2 and 41 is 3.226.

The result of the study shows that, significant differences exist among the adjusted post-test means of experimental and control groups on cardio respiratory endurance. Since the 'F' ratio is found to be significant, the Scheffe's post hoc test has been applied, which shows that both the experimental groups contributed to the significant improvement on cardio respiratory endurance. However, concurrent strength and endurance training is better than endurance training alone in improving cardio respiratory endurance.

Figure-1
Diagram Showing the Adjusted Post Test Mean Values on Cardio Respiratory
Endurance of Experimental and Control Groups



To determine the detraining impact on cardio respiratory endurance two-way factorial ANOVA (3x5) with repeated measures on last factor was applied and it has been found that the interaction effect was significant. Hence, simple effect test was used as a follow up test.

TABLE – 2
SIMPLE EFFECT SCORES OF GROUPS AT FIVE DIFFERENT STAGES
OF TESTS ON CARDIO RESPIRATORY ENDURANCE

Source of Variance	Sum of Squares	df	Mean Squares	Obtained “F” ratio
Groups at Post test	981555.5	2	490777.8	221.92*
Groups at First Cessation	766055.6	2	383027.8	173.197*
Groups at Second Cessation	378166.8	2	189083.4	85.499*
Groups at Third Cessation	241722.1	2	120861.1	54.650*
Groups at Fourth Cessation	184888.8	2	92444.42	41.801*
Tests of Group I	266200	4	66550.01	30.092*
Tests of Group II	85050.01	4	21262.5	9.614*
Tests of Group III	5616.673	4	1404.168	0.634
Error	371533.3	168	2211.508	

**Significant at .05 level of confidence*

(Table values required for significance at .05 level with df 2 and 168, & 4 and 168 are 3.053 and 2.423 respectively.)

The result of the study indicates that significant difference exists between groups during posttest and all four cessation periods on cardio respiratory endurance. The result of the study also

indicates that significant difference exists among tests of group-I and tests of group-II on cardio respiratory endurance. Since, 'F' ratio is found to be significant, the Scheffe's post hoc test was applied and the result obtained for groups at posttest, first, second, third and fourth cessation periods shows that significant differences exist among the three groups during posttest period. During first, second, third and fourth cessation periods, no significant difference exists between experimental groups, but experimental groups maintained significant difference with the control group.

TABLE – 3
SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN PAIRED MEANS OF
EXPERIMENTAL GROUPS AT DIFFERENT STAGES OF TESTING ON CARDIO
RESPIRATORY ENDURANCE

Groups	Mean Differences	First cessation	Second cessation	Third cessation	Fourth cessation
Concurrent Training	Post test	76.67	110.00*	170.00*	186.67*
	First cessation		33.33	93.33*	110.00*
	Second cessation			60.00	76.67
	Third cessation				16.67*
Endurance Training	Post test	87.65	198.04*	286.67*	326.67*
	First cessation		93.33*	180.00*	220.00*
	Second cessation			86.67	126.67*
	Third cessation				40.00

*Significant at .05 level of confidence

The confidence interval required for significance at 0.05 level is 0.90.

From the above table, it is inferred that the cardio respiratory endurance of endurance training and concurrent strength and endurance training groups deteriorated significantly during second cessation.

DISCUSSION

The results of the study showed significant improvement on cardio respiratory endurance due to endurance training and concurrent strength and endurance training. As previously stated, increases in endurance capabilities most commonly measured by increases in VO_{2max} , are accomplished by performing repeated sub-maximal contractions with loads of low resistance (Dudley *et al.*, 1985; Sale *et al.*, 1990). Many studies have examined the possible interference of strength training on endurance improvements. To maintain cardio-respiratory endurance, training must be conducted at least three times per week and training intensity should be 70% VO_{2max} (Wilmore & Costill, 1999).

These results are conformity with the following findings. Concurrent training improves endurance performance, both with trained cyclists (Paton & Hopkins, 2005) and other trained athletes (Hoff *et al.*, 1999; Johnston *et al.*, 1997; Millet *et al.*, 2002; Paavolainen *et al.*, 1999). Paton and Hopkins (2005) found that 1- and 4-km time trial performance increased could have also been a result of high intensity interval training being employed in addition to resistance

training. It has been well documented by Senthil and others (2011) that the effects of concurrent strength and endurance training significantly improved the Cardio-respiratory endurance when compared with control group.

The results of the study also indicated that the cardio respiratory endurance of concurrent strength and endurance training group and endurance training group decreased significantly due to detraining. But the significant decrease started after the second cessation toward the base line. These results of the study are in conformity with the finding of Nageswaran (1997) and Nugroho (2005) that the detraining losses of cardiorespiratory endurance are much greater than losses of muscle strength and power.

CONCLUSION

The results of the study showed significant improvement on cardio respiratory endurance due to endurance and concurrent strength and endurance training. However, concurrent strength and endurance training is better than endurance training alone in improving cardio respiratory endurance. It is also observed in the present study that throughout the detraining period, the gradual decline of cardiorespiratory endurance for concurrent strength and endurance training group is similar to that of endurance training group. Since gradual loss of training induced adaptations on cardio respiratory endurance within two weeks of detraining were found, it is suggested that the athlete must resume training within ten days of detraining.

REFERENCES

Journal of Strength and Conditioning Research, 19(4), 826-830.

1. Sale, D. G., MacDougall, J. D., Jacobs, I., Garner, S., (1990). Interaction between concurrent strength and endurance training. *Journal of Applied Physiology*: 68, Issue: 1, Pages: 260-270.
2. Wilmore, Jack H., and Costill, David L., (1999). *Physiology of Sports and Exercise*, Champaign: Human Kinetics, Dudley, G. A., and Djamil, R., (1985). Incompatibility of Endurance- and Strength-Training Modes of Exercise. *J Appl Physiol* 59: 1446-1451.
3. Hoff, J., Helgerud, J., & Wisloff, U., (1999). Maximal strength training improves work economy in trained female cross-country skiers. *Medicine and Science in Sports and Exercise*, 31(6), 870-877.
4. Johnston, R. E., Quinn, T. J., Kertzer, R., & Vroman, N. B. (1997). Strength training in female distance runners: Impact on running economy. *Journal of Strength and Conditioning Research*, 11(4), 224-229.
5. Mcardle, W. D., Katch, F. I. and Katch, V. L., (2001). Exercise physiology : energy, nutrition, and human performance. 5th ed. Philadelphia: Lippincott Williams & Wilkins, lxii, 1158.
6. Millet, G. P., Jaouen, B., Borrani, F., & Candau, R. (2002). Effects of concurrent endurance and strength training on running economy and VO₂ kinetics. *Medicine and Science in Sports and Exercise*, 34(8), 1351-1359.
7. Paavolainen, L., Hakkinen, K., Hamalainen, I., Nummela, A., & Rusko, H. (1999). Explosive-strength training improves 5-km running time by improving running economy and muscle power. *Journal of Applied Physiology*, 86(5), 1527-1533.
8. Paton, C. D., Hopkins, W. G., (2005). Combining explosive and high-resistance training improves performance in competitive cyclist



EFFECTS OF LOW INTENSITY PLYOMETRIC TRAINING COMBINED WITH AEROBIC TRAINING ON SPEED PERFORMANCE

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ABSTRACT

The purpose of the study was to find out the effects of low Intensity plyometric training combined with aerobic training on speed performance. To achieve the purpose of the study, thirty school level Kabaddi players in, in and around karaikudi were selected as subject at random and their age group range between 13 to 15 years. The study was formulated as pre and post test random group design, in which thirty players were divided into three equal groups. The experimental group-1 (n=10, LI-PT) underwent low intensity plyometric training, experimental group-2 (n=10, LI- PT-AT) underwent low intensity plyometric training combined with aerobic training and group 3 served as control group (n=10, CG) did not undergo any specific training. In this study, two training programme were adopted as independent variable, i.e., low intensity plyometric training, and low intensity plyometric training combined with aerobic training. The speed was selected as dependent variable, it was measured by 50 meters run and performance was recorded in seconds. The selected two treatment group's was performed low intensity plyometric training and low intensity plyometric training combined with aerobic training three days in a week for the period of eight weeks, as per the stipulated training program. The performance of speed was tested before and after the training period. The collected pre and post data was critically analyzed with apt statistical tool of analysis of covariance (ANCOVA), for observed the significant adjusted post-test mean difference of three groups. The Scheffe's post hoc test was used to find out pair-wise comparisons between groups. To test the hypothesis 0.05 level of significant was fixed in this study. The results proved that the selected training produced significant improvement on the performance of speed rather than the control group.

KEYWORDS: 1. Plyometric training, 2. Aerobic training, 3. Low intensity, 4. ANCOVA, 5. Speed

INTRODUCTION

The term plyometrics has had few meaning and interpretations over the years depending on whether once IS describing plyometrics classic plyometric or modern plyometrics. Plyometric exercise translates into more length as loaded or explosive eccentric (ECC) muscle action with no reversible, e.g., concentric (CON), muscle actions are used. **Zatsiorsky.V(2006)**. Aerobic metabolism plays a vital role in human performance and is basic to all sports, if for no other reason than recovery. Metabolically, the Krebs cycle and electron transport chain are the main pathways in energy production. Aerobic metabolism produces far more ATP energy than anaerobic metabolism and uses fats, carbohydrates and proteins (**Dudley, 1985**). Kabaddi is basically a combative sport, with seven players on each side; played for a period of 40 minutes with a 5 minutes break (20-5-20). The core idea of the game is to score points by raiding into the opponent's court and touching as many defense players as possible without getting caught on a single breath. Hence the researcher made an attempt to find out the effects of low Intensity plyometric training combined with aerobic training on speed performance.

METHODOLOGY

The study was formulated as pre and post test random group design, in which thirty subject were divided into three equal groups. The experimental group-1 (n=10, LI-PT) underwent low intensity plyometric Training, experimental group-2 (n=10, LI- PT-AT) underwent low intensity plyometric training combined with aerobic training and group 3 served as control group (n=10, CG) did not undergo any specific training. The selected two treatment group's was performed three days in a week for the period of eight weeks, as per the stipulated training program.

TRAINING APPROACHES

Experimental Group I: Low intensity plyometric training (LI-PT)

Exercise	Repetition	Set	Recovery in between exercise	Recovery in between sets
1-2 Weeks				
1. Squad jump 2. Vertical jump 3. Standing broad jump 4. Standing triple jump 5. Bike jump	Each 6	2	1 minute	3 minutes
3-4 Weeks				
1. Squad jump 2. Vertical jump 3. Standing broad jump 4. Standing triple jump 5. Bike jump	Each 8	2	1 minute	3 minutes
5-6 Weeks				
1. Squad jump 2. Vertical jump	Each 10	2	1 minute	3 minutes

3. Standing broad jump				
4. Standing triple jump				
5. Bike jump				
7-8 weeks				
1. Squad jump	Each 12	2	1 minute	3 minutes
2. Vertical jump				
3. Standing broad jump				
4. Standing triple jump				
5. Bike jump				

Experimental Group II**Low intensity Plyometric training combined with aerobic training (LI-PT-AT)**

Low intensity Plyometric training combined with aerobic training (2 x 1 x 1 x 1)				
Exercise	Repetition	Set	Recovery in between exercise	Recovery in between sets
1-2 Weeks				
Plyometric training 1. Squad jump 2. Vertical jump 3. Standing broad jump 4. Standing triple jump 5. Bike jump	Each 6	2	1 minute	3 minutes
Aerobic training 1 minute jog and 1 minute walk	5	2	2	3 minutes
3-4 Weeks				
Plyometric training 1. Squad jump 2. Vertical jump 3. Standing broad jump 4. Standing triple jump 5. Bike jump	Each 8	2	1 minute	3 minutes
Aerobic training 1.5 minute jog and 1.5 minute walk	5	2	2	3 minutes
5-6 Weeks				

Plyometric training 1. Squad jump 2. Vertical jump 3. Standing broad jump 4. Standing triple jump 5. Bike jump	Each 10	2	1 minute	3 minutes
Aerobic training 2 minute jog and 2 minute walk	5	2	2	3 minutes
7-8 Weeks				
Plyometric training 1. Squad jump 2. Vertical jump 3. Standing broad jump 4. Standing triple jump 5. Bike jump	Each 12	2	1 minute	3 minutes
Aerobic training 2. 5 minutes jog and 2.5 minutes walk	5	2	2	3 minutes

TABLE 1
THE RESULTS OF ANALYSIS OF COVARIANCE ON SPEED OF DIFFERENT GROUPS (SCORES IN SECONDS)

Test Conditions		G- 1 LI-PT	G- 2 LI-PTAT	G- 3 CG	SV	SS	Df	MS	'F' Ratio
Pre test	Mean	6.10	6.11	6.11	Between	0.1	2	0.01	0.001
	S.D.	0. 2	0.24	0.71	Within	5.45	27	0.20	
Post test	Mean	5.67	5.66	6.16	Between	1.62	2	0.78	7.10*
	S.D.	0.27	0.42	0.30	Within	3.12	27	0.12	
Adjusted post test	Mean	5.68	5.66	6.20	Between	1.62	2	0.81	6.96*
					Within	3.00	26	0.11	

Significant at .05 level of confidence. The required table value for test the significance was 3.35, and 3.37, with the DF of 2 and 27, 2 and 26

RESULTS OF SPEED

The pre test mean and standard deviation on speed scores G1, G2, and G3 were 6.10+0.20, 6.11+ 0.24 and 6.11 + 0.71 respectively. The obtained pre test F value of 0.001 was lesser than the required table F value 3.35. Hence the pre test means value of low intensity plyometric training, low intensity plyometric training combined with aerobic training and control group on the performance of speed before start of the respective treatments were found to be insignificant at 0.05 level of confidence for the degrees of freedom 2 and 27. Thus this analysis confirmed that the random assignment of subjects into three groups were successful.

The post test mean and standard deviation on speed of G1, G2 and G3 were 5.67+ 0.27, 5.66+ 0.42 and 6.16+ 0.3 respectively. The obtained post test F value of 7.1 was higher than the required table F value of 3.37. Hence the post test means value of low intensity plyometric training, low intensity plyometric training combined with aerobic training on the performance of speed were found to be significant at 0.05 level of confidence for the degrees of freedom 2 and 27. The results prove that selected two training interventions were produced significant improvement rather than the control group.

The adjusted post test means on speed scores of G1, G2 and G3 were 5.68, 5.66 and 6.20 respectively. The obtained adjusted post test F value of 6.96 was higher than the required table F value of 3.35. Hence the adjusted post test means value of low intensity plyometric training, low intensity plyometric training combined with aerobic training on the performance of speed were found to be significant at 0.05 level of confidence for the degrees of freedom 2 and 26. The results confirm that the selected two training interventions were produced significant difference among the groups.

In order to find out the superiority effects among the treatment and control groups the Scheffe's post hoc test were administered. The outcomes of the same are presented in the table I (a).

TABLE - I (A)
SCHEFFE'S POST HOC TEST MEAN DIFFERENCES ON SPEED
AMONG THREE GROUPS (SCORES IN SECONDS)

G-1 LI-PT	G- 2 LI-PT-AT	G- 3 C G	Mean Differences	Confidence Interval Value
5.68	5.66	-	0.006	0.48
5.68	-	6.2	0.49*	0.48
	5.66	6.2	0.496*	0.48

* Significant at .05 level of confidence.

Result of Scheffe's Post Hoc test on Speed.

Table I (a) shows the paired mean differences of low intensity plyometric training, low intensity plyometric training combined with aerobic training and control group on speed. The paired wise comparisons results as follows. First comparison: Group1 and 2: The pair wise mean difference of group 1 and group 2 values 0.006 was lesser than the confidential value of 0.48 Hence the first comparison was insignificant. The results of this comparison clearly proved that both training have produced similar effects on speed. Second comparison: Group 1 and 3: The pair wise mean difference of group 1 and group 3 values 0.49 was higher than the confidential value of 0.48. Hence the second comparison was significant. The results of this comparison clearly proved that low intensity plyometric training, have produced greater improvements on speed than the control group. Third comparison: Group 2 and 3: The pair wise mean difference of group 2 and group 3 values 0.496 was higher than the confidential value of 0.48. Hence the third comparison was significant. The results of this clearly proved that low intensity plyometric training combined with aerobic training have produced greater improvements on speed than the control group.

DISCUSSION ON FINDINGS

The results of the present study were demonstrated positive effect of the performance of speed. This findings support, in line with the result of the following study findings. **Hammami, Negra, Aouadi (2016)** conducted a study on effects of an in-season plyometric training program on repeated change of direction and sprint performance in the junior soccer player. They concluded that PTP can be commended to junior soccer players as a means of improving important components of their physical performance. **Ahmed Fadhil Farhan (2014)** conducted a study on impact of plyometric training program on physical performance in girl's age 12 to 15 years. Thus 6-weeks performing the plyometric training program can enhance physical performance in experimental group, while generally no effect was observed on a series of performance tests in a control group of adolescent female using the usual training program. **Young, Warren, McDowell, Mark, Scarlett, Bentley (2001)** conducted a study on the effect of agility, plyometric, and sprint training on the speed, endurance and power of High School Soccer Players. They concluded that straight speed and agility training methods are specific and produce limited transfer to the other. These findings have implications for the design of speed and agility training and testing protocols. **Hemambraeeddy and Maniazhagu (2017)** conducted study on low intensity of aquatic and land plyometric training on speed performance of school children. Their findings have revealed that low intensity of aquatic and land plyometric training would prove the significant development on the speed performance of the school children. Hence the results of the present study in line with the mentioned earlier studies findings.

CONCLUSIONS

The nature of the speed better in low intensity plyometric training and low intensity plyometric training combined with aerobic training than the control group. Further both the experimental groups were produced similar improvement on speed. The control participants did not prove any significant development of the performance of speed of school going kabaddi players.

REFERENCES

1. Ahmed Fadhil Farhan(2014) Impact of Plyometric Training Program on Physical Performance in Girls Age 12 to 15 Years. International Journal of Advanced Sport Sciences Research Vol.2 No.1, March, 39-49.
2. Chaouachi, Anis; Hammami, Raouf; Kaabi, Sofiene[2014] Olympic Weightlifting and Plyometric Training With Children Provides Similar or Greater Performance Improvements Than Traditional Resistance Training Journal of Strength & Conditioning Research. 28(6):1483-149
3. Dudley GA, Djamil R. (1985) Incompatibility of endurance- and strength-training modes of exercise. J Appl Physiol. 59(5):1446-51.
4. Young, Warren B.; McDowell, Mark H.; Scarlett, Bentley J (2001) The Effect of Agility, Plyometric, and Sprint Training on the Speed, Endurance and Power of High School Soccer Players Journal of Strength & Conditioning Research. 15(3):315- 319
5. Zatsiorsky V, Kraemer WJ. Science and Practice of Strength Training. 2nd ed. Champaign (IL): Human Kinetics; 2006. pp. 1-35.



EFFECT OF YOGA PRACTICE INVOLVEMENT FOR JAFFNA HINDU LADIES COLLEGE STUDENTS IN NORTH REGION, SRI LANKA.

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ABSTRACT

The purpose of the study was to find out the effect of yoga practice for Jaffna hindu ladies college students. For the purpose of the study 150 yoga students from Jaffna hindu ladies college, yoga training was given to the eight standard College Student for 12 weeks. The data obtained were Statistical Analyzed to find out the knowledge of yoga, self discipline, concentration, Breathing exercise (pranayama) and Asanas. Five point rating scale was used to Evaluate the questionnaires and percentage was calculated. The Jaffna hindu Ladies college Female Students above 85.3 percentage on the Knowledge of yoga, self-discipline, Concentration, Breathing Exercises and Asana. Mostly all the students were Involvement and Improvement of particular Area.

KEYWORDS: *Yoga, Self- Discipline, Concentration, Pranayama, Asana.*

INTRODUCTION

Yoga is an ancient science. Yoga is proven to improve self-Esteem, physical and mental health. A Change in behavior and life style is important to help the individual to come out from these happy minds. Yoga offers many possibilities to exchange wisdom share good times and lay the foundation for a Life Long practice that will continue to deepen.

The mental techniques include breathing exercises of “Pranayama” and Meditation of “dhyana” to discipline the mind. As the Bhagavad-gita says, “A person is said to have achieved yoga, the union with the self, when the perfectly disciplined mind gets freedom from all desires, and becomes absorbed in the self alone” Yoga is not a religion: it is a way of living that aims towards a healthy mind in a healthy body.

METHODOLOGY

To achieve the aim, purpose sampling method was used to select the subject Hundred and fifty Jaffna hindu ladies College Students in north region, Sri Lanka. The age of the subject ranged from 12-13 years as per the college records. A panel of experts prepared a questionnaire and was administered to assess the knowledge of yoga, self discipline, concentration, breathing Exercises and Asanas. Five point rating scale was used to evaluate the questionnaires and percentage was calculated:

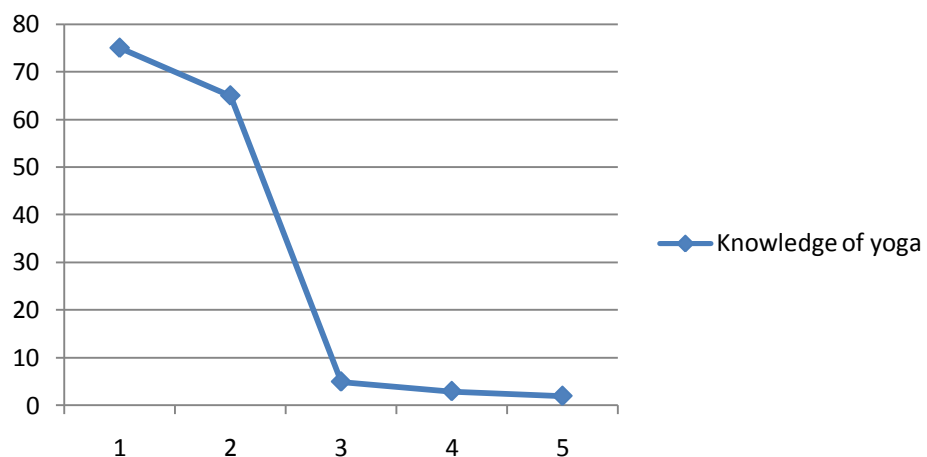
RESULTS

The purpose of present study was to find out the effect of yoga practice involvement among Jaffna hindu ladies college Students. The data obtained were statistically analyzed to find out the knowledge of yoga, self-discipline, concentration, breathing exercises, and Asanas. The Findings show that there was a difference among Jaffna hindu ladies College Students were given in table.

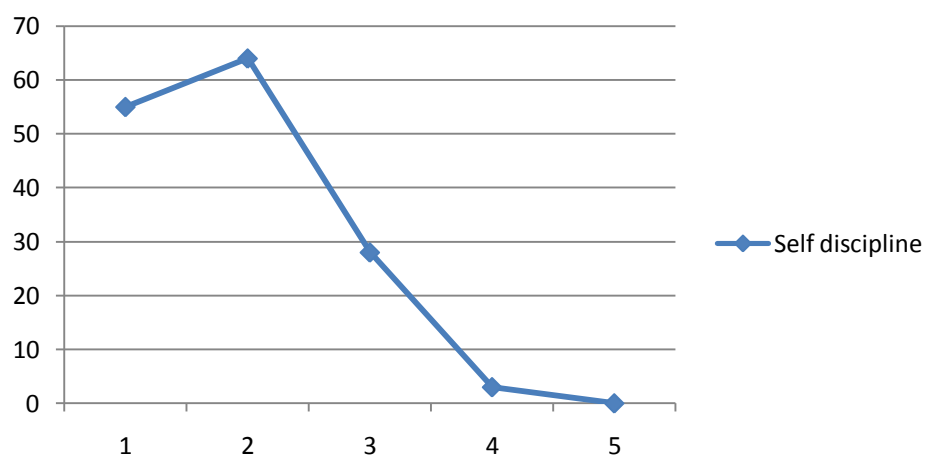
TABLE-1

Rating Scale	Knowledge of yoga	Self discipline	Breathing Exercises	Concentration	Asanas
Very Excellent	75	55	90	75	60
Excellent	65	64	40	45	45
Average	05	28	18	08	34
Poor	03	03	01	18	08
Very Poor	02	-	01	02	03
Total	150	150	150	150	150

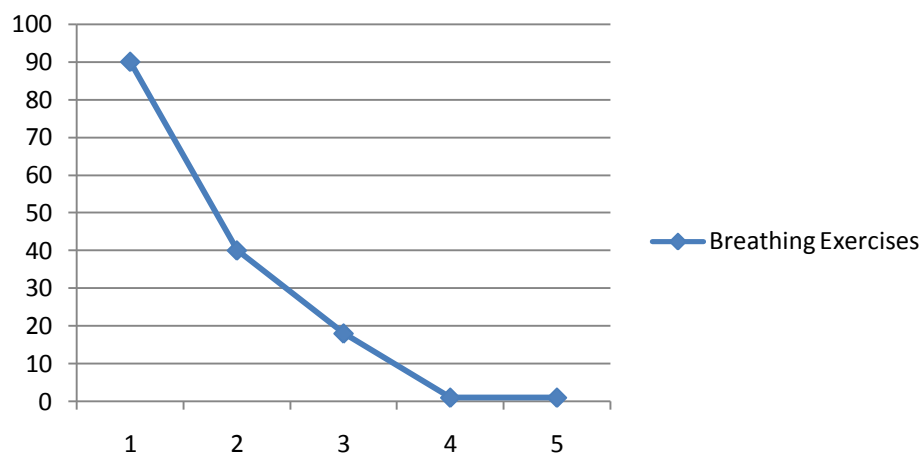
Knowledge of yoga



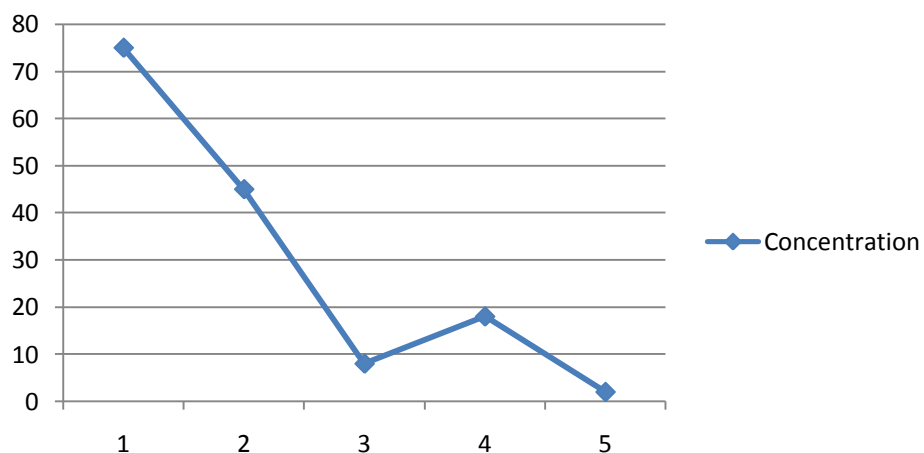
Self discipline



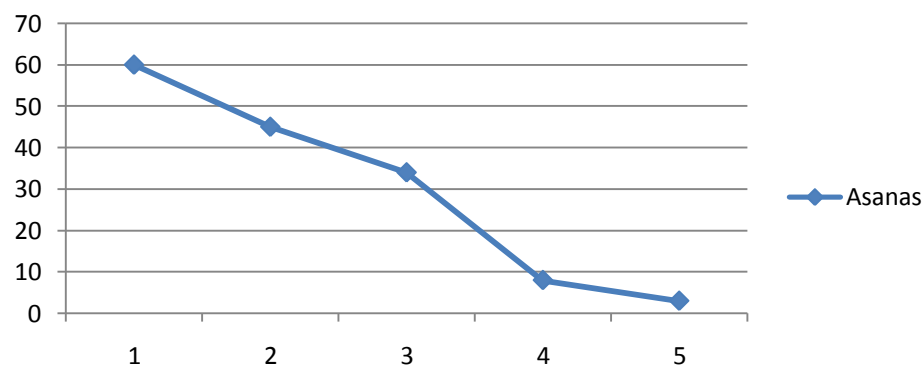
Breathing Exercises



Concentration



Asanas



CONCLUSION

From the results it was concluded that,

- 96.6% of Jaffna hindu ladies College Students were lies average and above on knowledge of yoga.
- .98% of Jaffna hindu ladies College Students were lies average and above on self-discipline.
- 98.6% of Jaffna hindu ladies College Students were lies average and above on Breathing exercises.
- 85.3% of Jaffna hindu ladies College Students were lies average and above on concentration.
- 92.6% of Jaffna hindu ladies College students were lies average and above on asanas.

REFERENCES

Asana Andiyappa, “Scientific Approach of yoga “ M.S. University,2000.

Iyengar B. K.S,(2001), Yoga- The path to Holistic Health, Dorling Kindersley limited, Great Britain.

Iyengar B.K.S. Light on the yoga Sutras of patanjali, New Delhi: Indus, An imprint of Harper Collin Publisher pvt.Ltd.1993.

Meditation and mantras by swami Vishnu devananda.

The book of yoga, the complete step by stepguide- Thesivananda yogacentre.



BRIDGING THE COGNITIVE DISSONANCE AMONG ADOLESCENTS THROUGH YOGA AND SURYA NAMASKAR

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ABSTRACT

*Human beings are unique social animals who throughout their lives develop and build varied beliefs and viewpoints in order to have a satisfactory life for themselves. Even though this is the case many times it comes into practise that one of the belief make a conflict with the already acquired earlier belief. This is where one has to realise the importance of cognitive dissonance. The complex term **cognitive dissonance** is often used to describe the feelings of discomfort that result from holding two conflicting beliefs. Hence in order to bring in consonance, the conflict between beliefs and practises must be resolved thus ruling out the dissonance between them. The paper examines the importance of yoga in reducing cognitive dissonance in our behaviour pattern and the thinking pattern. In the case of the first option, his dissonance could be further minimized by engaging in actions that reduce the impact of frustrations and dissatisfaction arising from his change of job, such as utilizing the extra hours of his existing job to match with the high paid salary. In order to avoid the conflicting beliefs one needs to eliminate, modify or change his choices or beliefs accordingly. Then only he can make an effective decision making in his life situations. This improves his ability to make apt and correct choices. By practicing yoga and exercises it is easy to manage all our mental conflicts and hence lead a calm, relaxed and useful life.*

KEYWORDS: Cognitive Dissonance, Surya Namaskar

INTRODUCTION

COGNITIVE DISSONANCE

Psychologist Leon Festinger put forward the theory of cognitive dissonance which tells actually by what manner humans focus in reaching self satisfaction and hence emotional stability. He suggested that all human beings have an inner urge to make their beliefs and behaviours consistent. If there exists any conflicts or inconsistency in their beliefs and behaviours, then a dissonance arises within them which everyone tend to avoid in their life. In his book *A Theory of Cognitive Dissonance*, Festinger explained, "Cognitive dissonance can be seen as an antecedent condition which leads to activity oriented toward dissonance reduction just as hunger leads toward activity oriented toward hunger reduction. It is a very different motivation from what psychologists are used to dealing with but, as we shall see, nonetheless powerful."

The amount of dissonance people experience can depend on a few different factors, including how highly we value a particular belief and the degree to which our beliefs are inconsistent. The dissonance can be influenced by several factors like more personal cognition, such as beliefs about the self, tends to result in greater dissonance. The importance of the cognition also plays a great role. Things that are highly valued typically results in stronger dissonance.

If we find the amount of dissonant thoughts and consonant thoughts and find out its ratio, we can see that greater the strength of the dissonance, the more pressure there is to relieve the feelings of discomfort. It is a fact that Cognitive dissonance can have a great impact in our behaviour and actions. We can explain this based on the following examples.

Examples of Cognitive Dissonance

Cognitive dissonance can occur in many areas of life, but it is particularly evident in situations where an individual's behaviour conflicts with beliefs that are integral to his or her self-identity. For example, consider a situation in which a man who places a value on being homely and family bonded just got a new highly paid job far away from his friends and family that he later discovers does not get enough vacations and off days.

The conflict:

- It is important for the man to take care of his family and friends.
- He is shifting to the highly paid job that is far away from friends and family.

In order to reduce this dissonance between belief and behaviour, he has a few different choices. He can quit the idea of job changing and get happiness from the close knit bond of family and friends or he can reduce his emphasis on being a family oriented man. In the case of the first option, his dissonance could be further minimized by engaging in actions that reduce the impact of frustrations and dissatisfaction arising from his change of job, such as utilizing the extra hours of his existing job to match with the high paid salary.

Another common example of cognitive dissonance could be seen when we are taking some purchasing decisions. Most people want to hold the belief that they make good choices. When a product or item we purchased turns out badly, it conflicts with our previously existing belief about our decision-making abilities.

Strategies to avoid cognitive dissonance and achieve consonance

According to Festinger's theory of cognitive dissonance, humans always strive to maintain consistency in their opinions, beliefs, and behaviours. So when there are conflicts arising between their beliefs and practises, they will take necessary actions in order to decrease the dissonance and disharmony in their feelings.

They can acquire this through different ways. There are three key strategies to reduce or minimize cognitive dissonance:

- **Shifting towards more supportive beliefs that reduce dissonance and help achieve consonance.**

For example, people who learn that greenhouse emissions result in global warming might experience feelings of dissonance if they drive a gas-guzzling vehicle. To reduce this dissonance, they might seek out new information that disputes the connection between greenhouse gases and global warming. This new information might serve to reduce the discomfort and dissonance that the person experiences.

- **Try to decrease the importance of the conflicting belief.**

A man who is much careful about his health will be disturbed when he learns that sitting for long periods of time during the day are linked to a shortened lifespan. Since he has to work all day in an office and spends a great deal of time sitting, it is difficult to change his behaviour in order to reduce his feelings of dissonance. To deal with the feelings of discomfort, he might instead find some way to justify his behaviour by believing that his other healthy behaviours make up for his largely sedentary lifestyle.

- **Try to modify the conflicting belief so that it is adaptable with the already existing beliefs and behavioural patterns.**

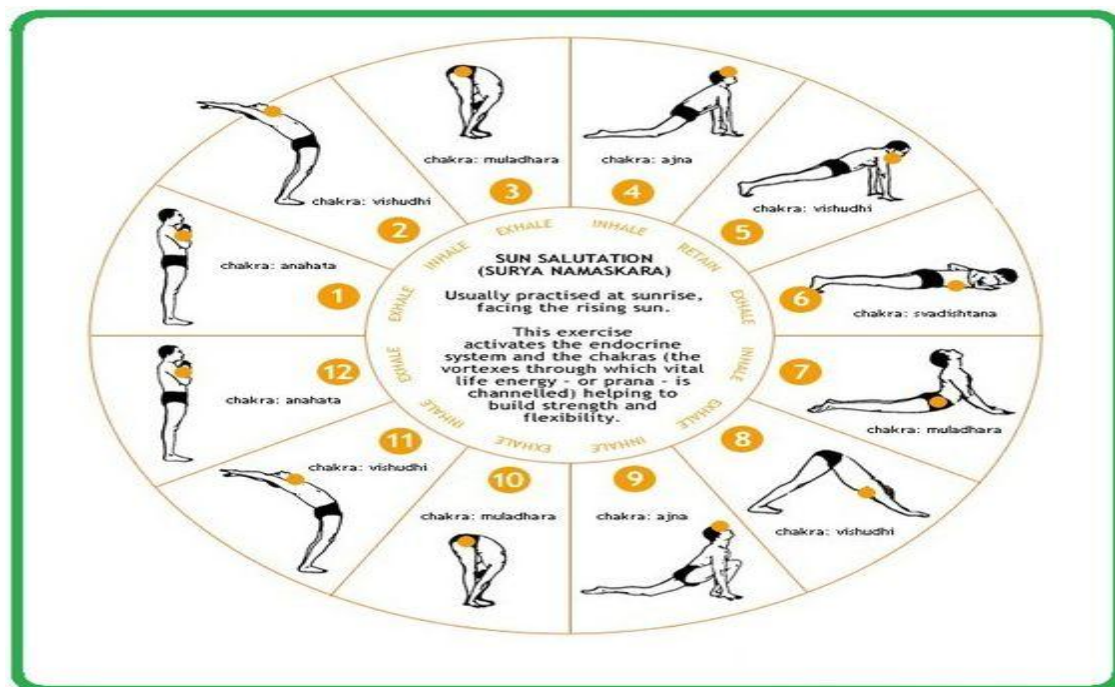
Another important way of dealing with dissonance is to change the conflicting cognition, which is a little bit difficult, particularly in the case of deeply held values and beliefs, change can be exceedingly difficult. But to live without tension this has to be practices.

Bridging a new strategy to reduce cognitive dissonance through sun salutation or “Surya Namaskar”

Yoga the ancient tradition of our mother nation India, accounts for enhancing the positive energy and vigour in our mind and body. In Sanskrit, the word yoga comes from the root “yuj” which means "to add", "to join", "to unite", or "to attach" in its most common senses. The yoga has potential benefits in wide varied areas. It helps to increase and enhance human concentration, attention, health and many more. Realising the importance of yoga, now in every schools and colleges there has a special time allotted for yoga and meditation. It is made a part of the school and college curriculum. There are a lot of yogasanas and kriyas which help for the well being of the humans. Of all Surya namaskar is considered to be the best and easy yogasana which needs to be practices by every Indian.

Surya Namaskar or Sun Salutation

Surya Namaskara literally means salute to the sun. It finds its roots in worship of Surya, the sun (considered to be a God by Indians). This sequence of activities and poses can be practiced as a physical exercise or a complete “sadhana” which incorporates exercise postures, breathing exercises, and profound meditation. A full round of these poses (asanas) are completed with two sets of the twelve postures comprising of forward and backward stretch of the spine. The orthodox time preference for practicing this routine is sunrise when optimum benefits for the spirit and the body can be reaped. The rewards of Surya Namaskara are many. It is the best exercise for achieving fitness. It includes a warm up session as well as the main exercise. In this present day and time, as every individual faces a time-crunch it is difficult to exercise regularly, but with just fifteen minutes of this yoga, maximum results and infinite benefits can be obtained. Surya Namaskar helps to cleanse the whole human body and thus activates our inner strength, vigour and vitality of human beings. Through that practice it is possible to attain mental stability and a mind which is free from conflicts. When the mental conflicts are solved it means cognitive dissonance is minimised and consonance can be attained easily.



Benefits of Surya Namaskar or Sun Salutation

- The most important benefit of Surya Namaskar is that it strengthens the entire body, Stimulates the nervous system including the brain, lower plexus, spinal cord, etc.
- Surya Namaskar Yoga strongly aids in preventing memory loss, builds focus and concentration, improves the functioning of the brain by activating the brain cells in the body.
- It is a well known remedy to cure blood pressure and strengthens heart muscles. It also cures and act as a remedy in correcting the irregular heart beat.
- Improves the capacity of the lungs, stimulates oxygen supply and regulates it to all the vital organs in the human body.

- Promotes weight loss and activates basal metabolic rate of a person's body.
- Reduces strained joints problems. Lubricates sore muscles and joints and promotes their healthy functioning. Highly beneficial in managing arthritis, sciatica, other joint related ailments.
- Improves mental and physical balance of the person's body. It helps to enhance patience and builds stamina by increasing the mental capacity of the brain and the body.
- Improves flexibility of the body and releases stiffness. Most of all, it fills you up with magnanimous positive energy. You feel rejuvenated and alive.

Surya Namaskar Yoga comes with numerous benefits. It helps us to live a healthy life – preserve the beautiful gift of nature by taking care of it.

Influence of yoga and surya namaskar in reducing cognitive dissonance

The idea behind clubbing the yogic effects in reducing cognitive dissonance is that the yoga helps improve human mind and body through a series of mental and physical exercise programs. Mind becomes powerful and body remains physically fit and agile through this practice. Hence the regular practice of yoga and the teaching of yoga especially to adolescent children can help reduce the mental conflicts within them and achieve consonance in their mental status.

The importance of cognitive dissonance

It is very important that one needs to be well balanced and maintained in their emotions. Here cognitive dissonance plays a major role that one needs to be consistent in his beliefs and practices in order to rule out cognitive dissonance and hence maintain emotional stability. In order to avoid the conflicting beliefs one needs to eliminate, modify or change his choices or beliefs accordingly. Then only he can make an effective decision making in his life situations. This improves his ability to make apt and correct choices. By practicing yoga and exercises it is easy to manage all our mental conflicts and hence lead a calm, relaxed and useful life.

REFERENCES

- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. California: Stanford University Press.
- Stuart Ray Sarbacker, *Samādhi: The Numinous and Cessative in Indo-Tibetan Yoga*. SUNY Press, 2005, pp. 1–2.
- <https://www.simplypsychology.org/cognitive-dissonance.html>



INVOLVEMENT OF THE PRE-SERVICE TEACHER TOWARDS PE PROFESSION– A FACT FINDING STUDY

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ABSTRACT

The purpose of the study was to appraise the involvement of the pre-service teachers towards the physical education studies, physical infra-structure, social behaviour, value based education and learning environment to become a successful teacher and their involvement towards the profession in their near future. And how all the said factors influence them solely and in combination in moulding her as a holistic PE teacher. The subjects of this study includes 120 pre-service female teachers who have taken physical education as a profession and pursuing their degree in Under graduation and Post-graduation (level 1) in Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore. The age ranged from 18 – 24, originated mainly from rural background and from different parts of Tamilnadu and nearby states. Ten subject's data was not considered as they are found to be incomplete. The researcher constructed questionnaire which was validated earlier was used in the study and the data collected were statistically calculated by the percentile statistical design. Research evidence also states physical education profession as a whole develops the student's cognitive, affective and psychomotor domains to have more involvement. On the whole, Eight one percent felt that the profession creates opportunities for developing the skills in all walk of their life. Teachers, curricula, physical facilities and peer group support are considered as the core components and plays a vital role in shaping to have meaningful relation and involvement towards the PE profession.

KEYWORDS: Pre-Service Teachers, Involvement, Physical Education Profession

INTRODUCTION

Physical Education, proudly abbreviated as PE, PET and PT is primarily concerned with maintaining human body through physical exercise. The ultimate aim of Physical education is to evolve somatic literate human beings who have the mastery, skills and courage to relish a lifespan of beneficial physical activity. Physical Education is considered as such a noble profession that teaches the child to set a good base for “Man of Eminence”. The action of the young one cast back the eminence. The goal of education is to revamp the actions and attitudes of the individual. Hence it is vital for a teacher to know the actions and attitudes of the every child or individual in a school or college . Therefore the aim of the physical education teacher is to be a good and great role model to the children in all walks of life. Hence the students of physical education should have a passion and belongingness towards their own profession. The curricula of physical education to be constructed in such a way that the students of BSc Physical Education, BPED, MPED and other related degrees for all round development of personality than any other curricula.

The educational process includes the core components like teacher, student and educational structure. In this process, the teacher might be seen an only core component important for enhancing students and to bring out desired outcomes. **Demirtaş, Comert and Ozer (2011)** indicated that the teaching profession has decisive and directive roles beyond the other factors such as physical environment and other components in the educational process. The scheme and curriculum of physical education is based on the context of *sport*. Most commonly, a PE teacher or a pre service teacher with sports background would possess basically good exposure and outreach experiences. And this will in turn help them to have more affinity towards the profession. As the sport that itself teaches dedication, motivation and team work and moreover all head and heart qualities.

As per literature, the involvement towards PE profession is based on many factors like choice profession as Pre-service teachers, nature and effectiveness of the training program and their views towards their profession (**Sisman 1999**). The literature also stated that the involvement towards the profession are based on their teaching experiences, life experiences and their experiences as pre-service teacher in the PE teacher education program (Pajeres, 1992)

Thus, it was hypothesized that:

1. there will be no significant difference between the involvement of teachers and their life experiences
2. there are significant difference between pre-service teachers involvement and role of their teachers to have positive view towards the profession
3. There are significant differences among the involvement and the structure of the curricula.

OBJECTIVES OF THE STUDY

1. To evolve the attitude of the pre-service teacher towards the physical education profession.
2. To know-how the involvement towards the profession developed through strong curricula.
3. To identify how the values are imbibed by the courses to develop as a great teacher.

The purpose of the study was to appraise the involvement of the pre-service teachers towards the physical education studies, physical infra-structure, social behaviour, value based education and learning environment to become a successful teacher and their involvement towards the

profession in their near future. And how all the said factors influence them solely and in combination in moulding her as a holistic PE teacher.

RELATED LITERATURES

The study aims to identify levels of the students' attitude towards Physical Education. The respondents included one hundred and sixty- two physical education students enrolled in the first semester of school year 2008-2009 in the seven colleges and one school of La Salle University. A researcher-constructed questionnaire was administered and data gathered were statistically treated using the Statistical Package for Social Sciences. Furthermore, T-Test was used in finding out difference in attitude towards PE between the male and female respondents. *GunayYildizer and Caner Ozboke (2017)*, Research was conducted on 469 pre-service physical education teachers students from five different universities in Turkey. In this study the “Attitude Scale for the Profession of Physical Education Teaching” was used. It has two factors: “concern for profession” (CP) and “affection for profession” (AP). Independent science and Higher sample t-test results indicated that there were no significant differences with respect to gender or having a teacher-parent in both factors and total attitude points ($p > 0.05$). Pre-service physical education teachers who participate in physical activity had higher points in AP and the total scale in comparison to those who do not participate in physical activity ($p < 0.05$).

Fernando Mufloz and Maria J Sanchez (2016), analysed the effect of participating in extracurricular sporting activities has on academic performances among students of higher education. The academic performances of sports participant are compared with the non participants in terms of outcome in the form of grades.

*NatalijaSpehar, e.tal., (2014)*conducted a study to establish preferences toward sports of students in three Zagreb's institutions of higher education with majors in humanities and social sciences, and natural sciences and engineering. Noticeable difference based on gender was established in preferences toward sports. Male students prefer football, table tennis and similar so-called “adrenalin” sports, while they tend to avoid so-called “feminine” sports with emphasis on an esthetic component of activity. Female students on the contrary, prefer aerobics, dance, ice-skating and roller-skating. Badminton and individual sports such as cycling and swimming is equally appealing to both female and male students.

METHODS OF THE STUDY

Participants

The subjects of this study includes 120 pre-service female teachers who have taken physical education as a profession and pursuing their degree in Under graduation and Post-graduation (level 1) in Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore. The age ranged from 18 – 24, originated mainly from rural background and from different parts of Tamilnadu and nearby states. Ten subject's data was not considered as they are found to be incomplete.

Design of the Study

The researcher constructed questionnaire which was validated earlier was used in the study and the data collected were statistically calculated by the percentile statistical design. The subjects were properly oriented about the study and consent form from the subjects was acquired. The ethical consent from the human ethical committee of the university was also obtained.

Instruments

The demographic components were also acquired viz. age, grade, activity participation, social behaviour, Infrastructure etc. It was advocated to all the subjects. It consists of 27 questions that helped to draw the views of the physical education students towards their profession.

Analysis and Discussion

Involvement of the pre-service teachers were assessed using 27 item and by using five point Likert scale was validated with pilot study done with 20 students. The scale consists of two auxiliary scales. Involvement towards the profession is validated by 17 questions with positive items and 9 questions to evolve the negative items. Both confirmatory and exploratory analyses were used to evaluate the satisfactory values.

- Seventy two percent of students stated that the literal knowledge towards each core and elective course method of teaching helps to foresee challenges and solutions.
- Eighty seven percent believed that they have established adherence towards learning about new actions, instructional assests, physical infrastructure and technology assist them and involving them towards their profession.
- Seventy five percent of pre-service teachers considered that participation in intramural and extramural sports and games initiated them to pose and solve problems in life and game situations through its multiple path of apprehensions
- Eighty nine percent are confident about that the structured PE program(two years) definitely develop the pre service teachers to enhance fitness and constructive choices and in attaining the goal to become the efficient teacher
- Ninety percent felt that the professional ethics and value based education taught them systematics through theoretical and practical exposure. The teacher preparation programme is doing justice and it is very evident during their pre-service training itself. The experience of their teachers also plays an important role moulding such students.
- Seventy one believed that the support rendered to the pre-service teachers by the stakeholders (during their practice teaching) enriched their involvement towards PE profession.
- Seventy five percent revealed that constant conduct of workshops/seminar/guest lectures oriented them about the current trends and rule changes in all the field of sports.
- Ninety four percent of pre-service teachers ensured that there are ample opportunities to be a triumphant in developing the health and motor related performances and raised the belief to understand their own ability.
- Eighty eight percent students admired the field because of its Professionalism. The student of PE naturally develops punctuality, follows professional dress code, being responsible, provides sense of individuality and group behaviour.

In the study, the involvement towards PE profession were surveyed with respect pre-service teachers, to know-how the effectiveness developed through strong curricula and how the values are imbibed by the courses to develop them as great teacher. The first hypothesis was rejected as there was significant difference between the involvement of teachers and their life experiences. Most of the PE pre-service teachers are from sports background and Pajares (1992) pointed that the involvement and role of their teachers have played a positive view towards the profession. Based on the obtained results it was very clear that the extramural and intramural participation

created more involvement towards the profession to have the oneness feeling among the students and the teams.

CONCLUSION

Pre service teacher face any situations with positive and motivational way of approach in near future or during their service periods. Teachers need to make the connection between success and failures in sports and common life as a means of developing a positive attitude towards any situations. Maintaining healthy lifestyles should be planned as an important outcome for them in near future. Developed qualities need to be retained during their life span as many of the aspects they come across provides positive outlook. Research evidence also states physical education develops the student's cognitive, affective and psychomotor domains to have more involvement. On the whole, Eight one percent on the average felt that the profession creates opportunities for developing the skills in all walk of their life. Teachers, curricula, physical facilities and peer group support are considered as the core components and plays a vital role in shaping to have meaningful relation and involvement towards the PE profession. Hence it was concluded that the accomplished teachers utilize the depth and breadth of their content knowledge to develop them as physically educated learners.

Recommendations

The study can be done for

- Other teacher education programs to know the effectiveness and interest of the student teachers.
- Pre-service teachers based on their grades and level of education programs
- Accomplished PE teachers after their five of ten years of experiences as teacher.

REFERENCES

1. Cooper, C. (1988). Implications of the absence of black teachers and administrators to black youth. *Journal of Negro Education*, 57, 123-124.
2. Ferguson, K.J., Yesalis, C.E., Pomrehn, P.R., & Kirkpatrick, M.B. (1989). Attitudes, knowledge, and beliefs as predictors of exercise intent and behavior in schoolchildren. *Journal of School Health*, 59(3), 112-115.
3. Greendorfer, S. (1983). A challenge for sociocultural sport studies. *Journal of Physical Education, Recreation and Dance*, 54(3), 18-20.
4. Siedentop, D., Mand, C., & Taggart, A. (1986). *Physical education: Teaching and curriculum strategies for grades 5-12*. Palo Alto, CA: Mayfield.
5. Simons-Morton, B.G., O'Hara, N.M., Simons-Morton, D.G., & Parcel, G.S. (1987). Children and fitness: A public health perspective. *Research Quarterly for Exercise and Sport*, 58, 295-302.



DIGITAL LEARNING PLATFORMS FOR INNOVATIVE AND TECHNOLOGICAL EDUCATION

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ABSTRACT

Education is the foundation of our economy. What we learn in school determines who we become as individuals and our success throughout our lives. It informs how we solve problems, how we work with others, and how we look at the world around us. In today's innovation economy, education becomes even more important for developing the next generation of innovators and creative thinkers. Teachers are implementing effective and interesting measures to evaluate student's learning outcomes. Technology in education gets plenty of hype. Digital learning is replacing traditional educational methods more and more each day. Many digital technologies are arising to make the education innovative and efficient. Some of them are smart class rooms, flipped class room and peer teaching. E-learning platforms like Massive Online Open Courses (MOOC), seesaw, epatasala, Modular Object-Oriented Dynamic Learning Environment (Moodle) are useful for innovation in distance education. since these plays a major role in the country's development our government has introduced a e-learning platform of MOOC known as Study Webs of Active-learning for Young Aspiring Minds(SWAYAM).IT platform that facilitates hosting of all the courses, taught in classrooms from 9th class till post-graduation to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers

in the country and are available at affordable cost to the residents in India. More than 1,000 specially chosen faculty and teachers from across the Country have participated in preparing these courses. The techniques and platforms make education to be in the door step of the student community. This study provides an overview about the e-learning platforms, technological innovations in education (Interactive whiteboards, Flip classrooms, Digital library) and focus on the one of the MOOC Platforms known as SWAYAM program offered by the government of India.

KEYWORDS: Mooc, Swayam, Seesaw, Edmodo, Moodle, Flipped Classroom And Interactive White Boards.

INTRODUCTION

A massive open online course is an online course aimed at unlimited participation and open access via the web. Its services are described in the diagram (figure1.1). In addition to traditional course materials such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions among students, professors, and teaching assistants (TAs) [1]. MOOCs are a recent and widely researched development in distance education which were first introduced in 2006 and emerged as a popular mode of learning in 2012. Early MOOCs often emphasized open-access features, such as open licensing of content, structure and learning goals, to promote the reuse and remixing of resources. Some later MOOCs use closed licenses for their course materials while maintaining free access for students.

In 2013 the range of students registered in MOOC appears to be broad, diverse and non-traditional, but concentrated among English-speakers in rich countries. Both the developed and developing countries started using MOOC. The chart below decrypts the student enrollers in different countries for MOOC (figure1.1).

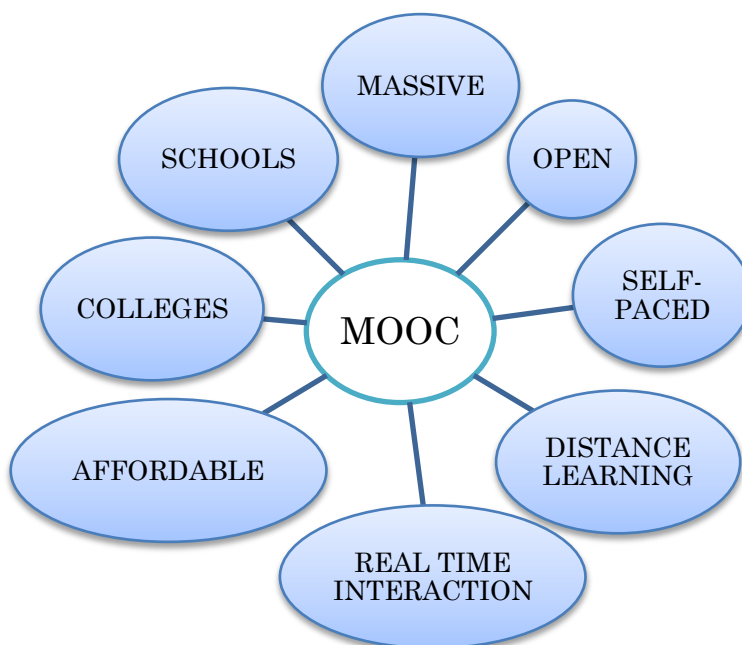


Figure 1.1 MOOC services

The quality of education in India is challenge to the nation. The MOOC is the modern day quality education tool to educate the mass at minimum cost and efforts. Government of India (MHRD) is making an effort to develop online national portal for quality education called SWAYAM [2]. It offers online courses to any learner of the nation at free/minimum cost with the help of ICT based on edX platform. The quality of SWAYAM is based on the quality of the course content, content creators and the learners. It will help the nation in skill development program thorough which the employment and skilled manpower is created. The success of SWAYAM is depending on the government, national agencies like UGC, NPTEL, IGNOU and CBSE NCERT & NIOS, and the topmost institutions in the country.

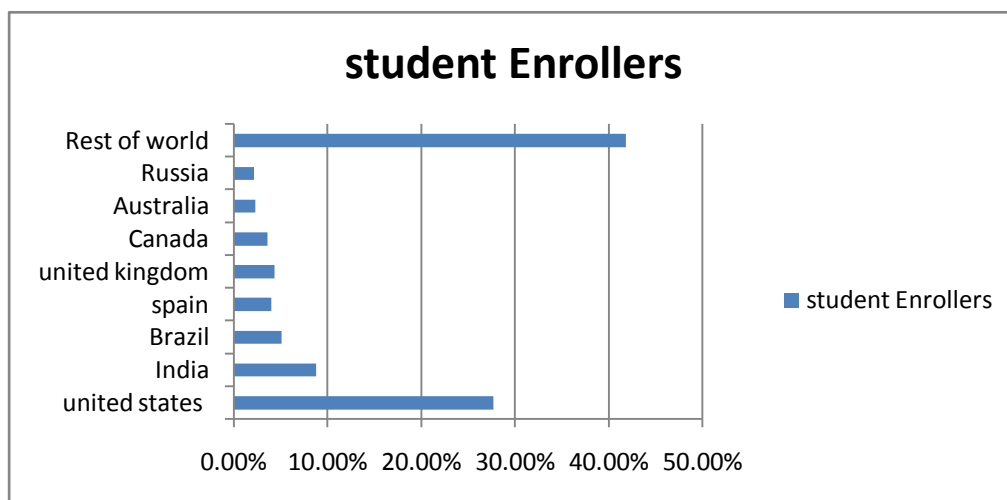


Figure 1.2 Survey on MOOC courses

Education System from Ancient to Modern Era in India

Education in India has many facets, starting from historic times to the present day[3]. The roots of the system starts from vedic education in which gurukula system (figure 2.1) is followed. Vedic age downwards the central conception of education of the Indians has been that it is a source of illumination giving us a correct lead in the various spheres of life. Next Buddhism Education System (figure 2.2) originated in India has made a tremendous movement which played a valuable role in the development of Education System and it is well-known that with the rise of Buddhism in India there dawned the golden age of India's culture and civilization. Then in medieval period Mughal rulers came to India and established their rule, Education developed with a fresh aspect during that period as there was an excellent interaction between Indian and Islamic traditions (figure 2.3) in all fields of knowledge like theology, religion, philosophy, fine arts, painting, architecture, mathematics, medicine and astronomy. After that the British rule came. They regularize the education system from primary to university level. In many places universities were established. From 1947 the government of India also appointed three important commissions for suggesting educational reforms. The University Education Commission of 1949 made valuable recommendations regarding the reorganization of courses, techniques of evaluation, media of instruction, student services, and the recruitment of teachers. The Secondary Education Commission of focused mainly on secondary education. The diagram below shows the education system in India from ancient to modern (figure 2.4).

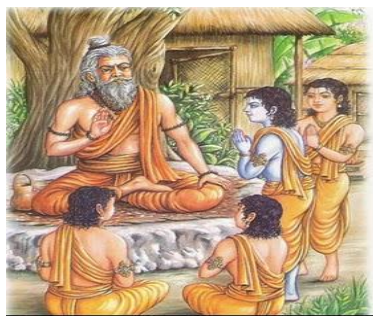


Figure2.1 Gurukula system



Figure2.2 Buddhism Education System

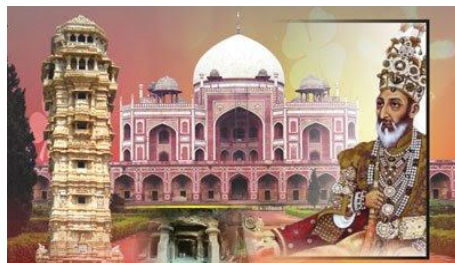


Figure 2.3 Mughal era

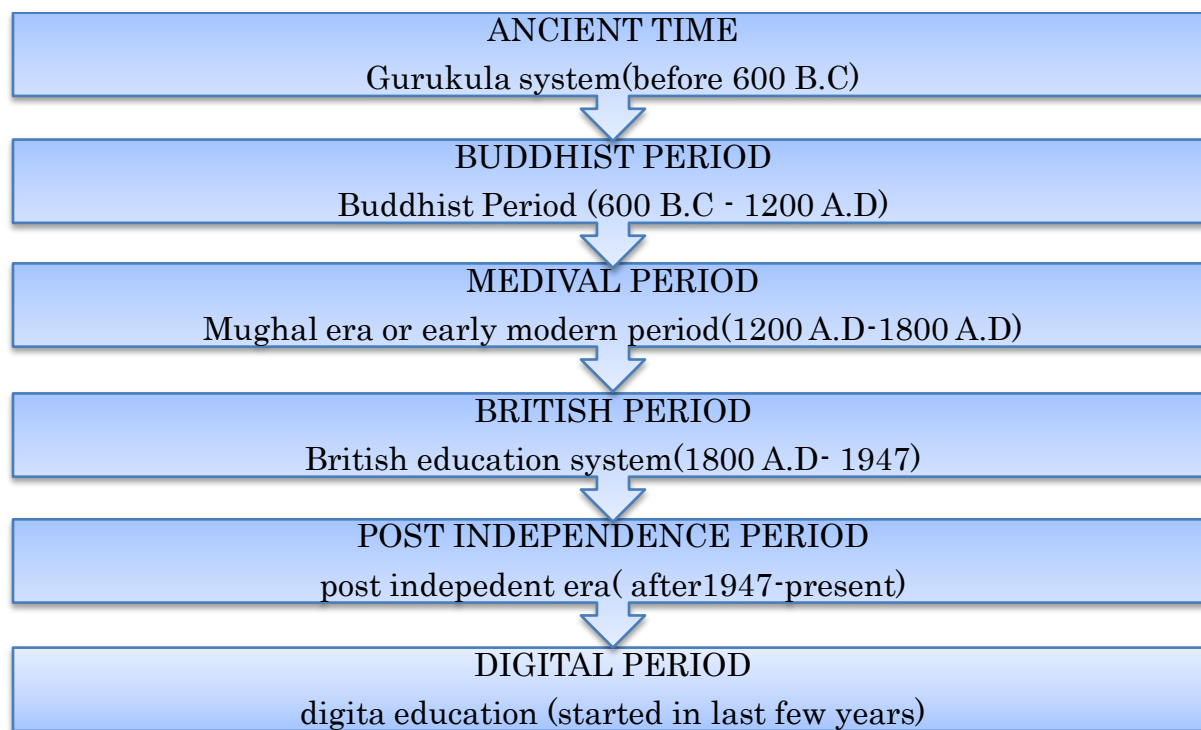


Figure 2.4 Education systems from Ancient to Modern Era

3. Swayam

SWAYAM is a program initiated by Government of India (figure3.1) and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched

by the digital revolution and have not been able to join the mainstream of the knowledge economy [4]. The courses hosted on SWAYAM will be in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts. Steps have been taken to enrich the learning experience by using audio-video and multi-media and state of the art pedagogy / technology. In order to ensure best quality content are produced and delivered, seven National Coordinators have been appointed. Courses delivered through SWAYAM are available free of cost to the learners, however students wanting certifications shall be registered, shall be offered a certificate on successful completion of the course, with a little fee. At the end of each course, there will be an assessment of the student through proctored examination and the marks/grades secured in this exam could be transferred to the academic record of the students [5]. UGC has already issued the UGC (Credit Framework for online learning courses through SWAYAM) Regulation 2016 advising the Universities to identify courses where credits can be transferred on to the academic record of the students for courses done on SWAYAM. SWAYAM platform is indigenously developed by Ministry of Human Resource Development (MHRD) and All India Council for Technical Education (AICTE) with the help of Microsoft and would be ultimately capable of hosting 2000 courses and 80000 hours of learning covering school, under-graduate, post-graduate, engineering, law and other professional courses (Table 3.1).

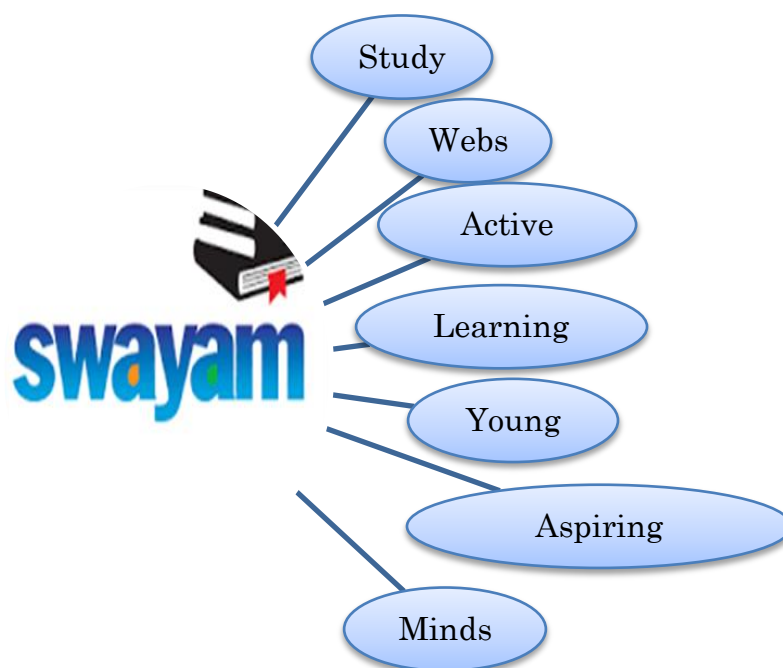


Figure3.1 SWAYAM

TABLE 3.1 COURSES AND INSTITUTIONS OF SWAYAM

CATEGORY / LEARNING PATH	NO. OF COURSES	COURSES	INSTITUTIONS
Courses for School (9th - 12th)	10	NCERT Chemistry 01&02, NCERT Biology 01&02, NCERT Geography 01&02 ,etc.	DESM, NCERT, etc.
Certificate & Diploma Courses	11	Introduction to Poultry Farming, Document Processing and Organization, Database and Content Organization, etc.	SOA, IGNOU, etc.
UG Courses (Non Engineering)	62	Making of Modern India, Atomic structure and chemical bonding-an introductory course, Data Structure And File Processing etc.	Punjabi University, Patiala, IGNOU, New Delhi, IGNOU, New Delhi, etc.
PG Courses (Non Engineering)	63	Informatics and Scientometrics, Information Sources, Systems and Services , Bioorganic and Biophysical Chemistry, etc.	INFLIBNET Centre, IN-FLIBNET Centre, Delhi University
PG & UG Courses (Engineering)	155	Engineering Thermodynamics, Forest Biometry, Laser Fundamentals and Applications, etc.	IITK, IIRT, IITKGP, etc.
PG & UG Courses (Management)	10	Management Accounting for Decision-making, Introduction to Marketing Essentials, Introduction to Corporate Finance, etc.	IIM Bangalore, etc.

E -LEARNING PLATFORMS

Seesaw

Seesaw is a multimedia journal that empowers students to showcase what they're learning at school. Throughout the school year, Seesaw builds an organized, digital portfolio of each student's learning, accessible by teacher, student and parent. Seesaw also keeps parents in the loop by giving them a real-time, personalized glimpse into their child's school day, via automatic OS or Android app notifications, text message or email. Students are eager to capture their learning and share what excites them[6]. Parents can be more connected to the classroom and receive personalized communication about their child, all without adding more work to their already busy day.

Edmodo

Edmodo was founded six years ago to provide K-12 teachers, school officials, students, and parents with a closed, private learning network that they could use to connect and collaborate with each other. Today, educators, students, and parents from around the world have signed up to use Edmodo as their preferred learning platform[6]. Edmodo is different from many other education technology companies. Students cannot create an account by themselves; they can only do so if they're invited by their teacher and given a unique Group Code (figure 4.1). The only personally identifiable information that students need to provide to create an account is their first and last name.

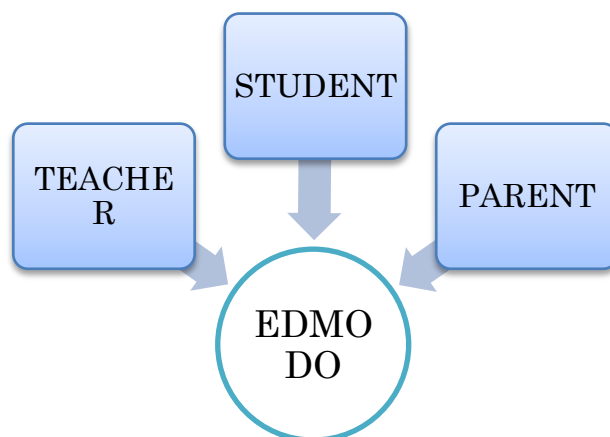


Figure 4.1 Users of EDMODO

Moodle

Traditionally open source software used by education institutions to provide distance learning for students. MOODLE is now used by enterprises around the world for online training and learning. As a highly flexible LMS, MOODLE can be used to conduct courses online or to support face-to-face teaching, learning and training [7]. It can also be extended with over 500 plug-in for assignments, quizzes, grading, certification, and social and collaborative learning. As an open source platform, MOODLE users benefit from a global community of developers who are actively engaged in improving the user experience.

Some digital innovations in education

Flipped Classroom: It is an instructional strategy and a type of blended learning that reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom, carry out research at home and engage them in concepts in the classroom with the guidance of a mentor[8]. Flipped classrooms make use of Interactive whiteboard which acts as an instructional tool. This tool allows computer images to be displayed onto a board using a digital projector instead of using contact time for knowledge transmission, the students or pupils acquire the needed information before the session. The F2F time is then used for such expert-like (“mind-teaching”[19]) activities as solving collaboratively complex problems, getting repeated feedback from teachers and tutors, investing deliberate efforts for recovering failures and improving performance, and engaging in joint elaboration, discussion and creation of knowledge.

Children with Special Needs: The impact of technology to provide alternative ways of learning for students with special needs has been profound. Assistive technology has benefited students with physical, sensory or cognitive disabilities to learn and communicate better. Examples of some of them are: Text-to-Speech software that helps students with reading issues, Seat Cushions – for kids with sensory processing and attention issues, Word prediction software, Speech recognition software, etc.

CONCLUSION

This paper focused on the different digital platforms which act as an extensively supportive tool for transformation of work towards teaching and learning process in classrooms. To meet with digital era, emerging innovation-driven knowledge society, both student community and teachers should involve into functioning as knowledge based creative community. We need to bring learning to people instead of people to learning. Technology will never replace great teachers, but technology in the hands of great teachers is transformational. New measurements have to be taken in fixing new pedagogies and thus transforming our work, our organisations and day to day to routines. All the e-learning platforms and digital educational techniques are available to make the students to learn the courses at affordable cost and to get more exposure.

REFERENCES

1. Mr. Rahul Hiremath SWAYAM: The dream of Indian MOOC NSS College of Commerce & Economics, Tardeo, Mumbai.
2. Department of Higher Education, Ministry of Human Resource Development. (2015). Guidelines for Development and Implementation of MOOCs. New Delhi: Government of India.
3. Ritu Sharma, third edition, 4 April 2007, Development of Education System in India.
4. Beetham, H. and Sharpe, R. (2007) Rethinking Pedagogy for a Digital Age: Designing and Delivering E-Learning. London: Routledge.
5. Dr. Kirti Matliwala, SWAYAM- A Way of Learning, Assistant Professor Department of Education.
6. George Stanley, fourth edition, 12 Feb 2015, *Using Evidence of Student Learning to Improve Higher Education*
7. Ken Robinson, Third edition, 7 May 2015, *Creative Schools: The Grassroots Revolution that's Transforming Education*.
8. Daniel T. Willingham, first edition, 1 April 2015, *Raising Kids Who Read: What Parents and Teachers Can Do*.



TEACHER TRAINEES' AWARENESS: A KEY FACTOR FOR INCLUSION OF CHILDREN WITH LEARNING DISABILITIES

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ABSTRACT

Inclusive education is a flexible educational system provides opportunities for Special need Children to educate in a regular classroom with their normal peers. Teachers play a vital role in moulding their students. Regular classroom teachers' awareness about various types of disabilities and their educational need is a significant factor which determines the success of inclusion. The present study tries to find out the awareness of teacher trainees' awareness about learning disability. It is imperative because they are future teachers and they have to handle such children in their classrooms. A descriptive survey method was used. A closed ended questionnaire consisting 30 items was used for data collection. 33 B.Ed. trainees studying in different B.Ed. training collages in Kerala was the participants of the study. From the study it was found out that majority of the teacher trainees have an average level of awareness about learning disability. This is the need of the hour to find out how much the teacher trainees are aware about learning disabilities. It is imperative since the teacher trainees are the future teachers and they have to handle children with learning disabilities in their classrooms. So it is very essential to take action to improve the awareness of teachers, teacher educators and teacher trainees about learning disability. Otherwise such children are ignored in our mainstream classrooms.

KEYWORDS: *Flexible, Questionnaire, Disabilities,*

INTRODUCTION

Every child including children with special needs have the right to get appropriate and quality education in a mainstream school in his/ her locality. The Salamanca Statement and frame work for Action stated that those children with special needs must have the access to regular school (UNESCO, 1994). The Article 24 of UNCRPD state that all children with disabilities have the right for education without any discrimination (UNCRPD, 2006). In addition to this, in our country all educational policies and laws emphasize the inclusive education of children with special needs. Inclusive education is the philosophy and practice of educating special at in their locality. According to the Salamanca Statement and frame work for Action inclusive education is the only means to brush off the discriminatory attitude, thus for building an inclusive society and achieving education for all.

The present mainstream classrooms are pools of diverse learners. In which the major group is children with learning disabilities. Learning disabilities are conditions in which the children have neurologically based processing problems. These problems intrude the learning process of the child especially in basic academic skills like reading, writing and maths and higher level skills like organization, abstract reasoning and problem solving.

Learning disabilities is a hidden handicap (Hallahan& Kauffman, 2015). The children with learning disabilities have average or above average intelligence. The needs of children with disabilities are not met due to the lack of awareness of the regular classroom teachers. Low awareness is definitely a barrier for successful inclusion of special need children. Research conducted in different parts of the country indicated that general education teachers possess a low to moderate level of awareness (Agarwal, 2015., Sawhney 2014., Gandhimathi & Eljo, 2010) . The present study is an attempt to assess the level of awareness of teacher trainees about learning disability. This is the need of the hour to find out how much the teacher trainees are aware about learning disabilities. It is imperative since the teacher trainees are the future teachers and they have to handle children with learning disabilities in their classrooms.

OBJECTIVES

The major objectives of the study are to:

- Study the level of awareness of teacher trainees about the characteristics of learning disability.
- Determine the level of awareness of teacher trainees about the causes of learning disability.
- identify the level of awareness of teacher trainees about the existing educational facilities for children with learning disabilities in mainstream schools
- analyze the level of awareness of teacher trainees about learning disabilities with respect to their educational qualification

METHODOLOGY

In order to achieve the objectives of the study descriptive research method was used. The study was conducted on a sample of 33 teacher trainees, who were studying in various teacher training institutes in Muvattupuzha taluk, Ernakulam District, Kerala. A closed ended questionnaire consisting of 30 questions was used for data collection. The questionnaire is divided into three sections constituting 10 questions in each section. Each section carries a maximum mark of 20 and a minimum of 0.

RESULT AND DISCUSSION

The mean, standard deviation, frequencies and percentages of mean scores were computed.

TABLE 1. MEAN, STANDARD DEVIATION AND PERCENTAGE OF AWARENESS OF TEACHER TRAINEES ABOUT LEARNING DISABILITIES IN GENERAL

N	Mean	SD	Percentage
33	41.97	4.05	69.95

Table 1 shows that the mean, standard deviation and percentage of awareness of teacher trainees about learning disability. The mean value of total score is 41.97. The percentage of mean value is 69.95. From the table it is clear that the teacher trainees possess an average level of awareness on learning disability.

TABLE 2. FREQUENCIES AND PERCENTAGES OF TEACHER TRAINEES WITH RESPECT TO THEIR LEVEL OF AWARENESS ABOUT LEARNING DISABILITIES

Sl.No.	Level of Awareness	N	Percentage
1	Very low (0-15)	0	0
2	Low(16-30)	0	0
3	Average(31-45)	23	69.69
4	High(46-60)	10	30.3

Table 2 shows frequencies and percentages of teacher trainees with respect to their level of awareness of learning disabilities. From the total sample studied 69.69% of trainees are having average level of awareness, 30.3% of trainees having high awareness level. None of the trainees studied was found to be in the very low and low level. Hence it is concluded that majority of the trainees included in the study possess an average awareness level about learning disability.

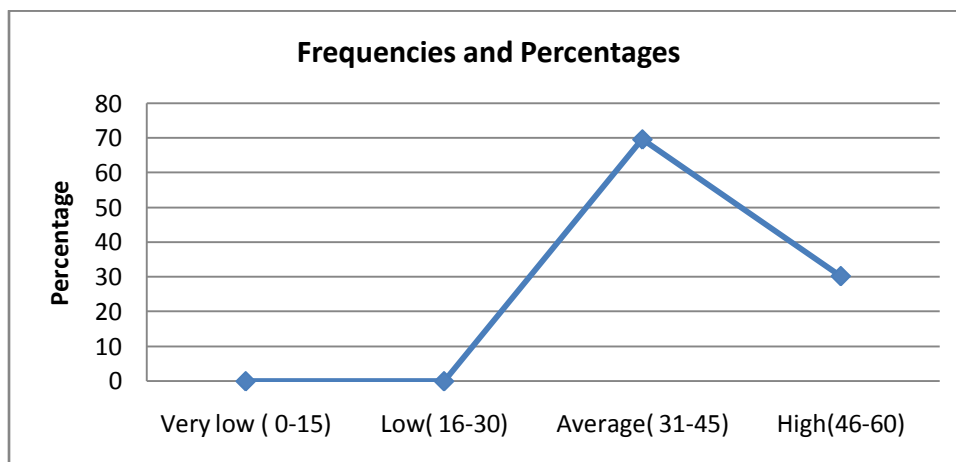


Figure 1. Frequencies and percentages of teacher trainees with respect to their level of awareness about learning disabilities

Figure 1. compare the frequencies and percentages of teacher trainees with respect to their level of awareness of learning disabilities. From the figure it is clear that majority of the trainees included in the average awareness level group.

TABLE 3. MEAN, STANDARD DEVIATION AND PERCENTAGE OF AWARENESS OF TEACHER TRAINEES ABOUT THE CHARACTERISTICS, CAUSES AND EXISTING FACILITIES

N	Area	Mean	SD	Percentage
33	Characteristics	12.42	1.94	62.1
	Causes	13.9	2.15	69.5
	Existing facilities	15.6	2.3	7.8

The above table shows the mean, standard deviation and percentage of awareness of teacher trainees about the characteristics, causes of learning disabilities and facilities existing in schools for those children. From the table it is understood that the teacher trainees' awareness about the causes of learning disability is slightly high when compared to the other two areas.

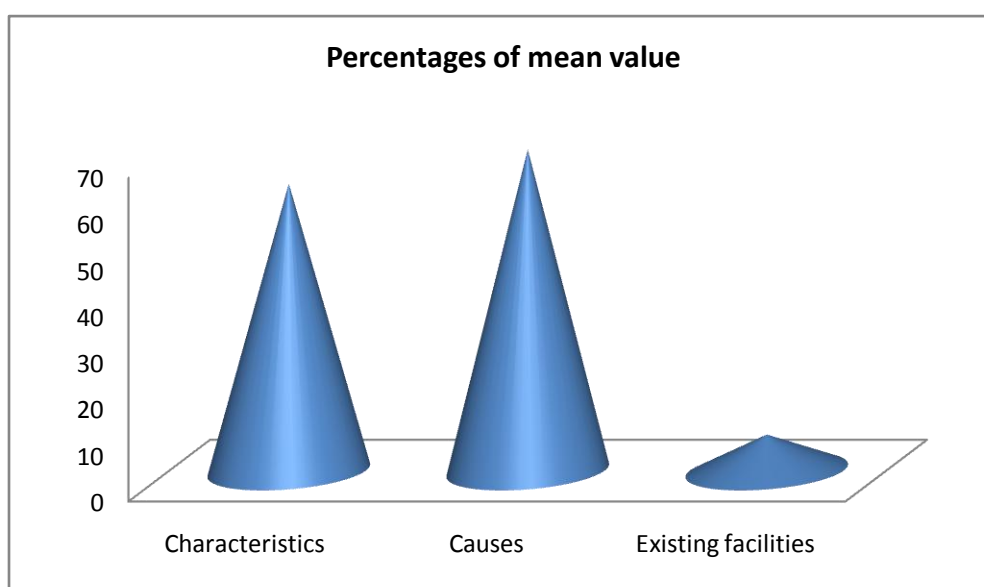


Figure 2. comparing the percentages of mean value of scores on characteristics and causes of learning disabilities and existing facilities in schools

Figure 2. comparing the percentages of mean value of teacher trainees awareness about the scores on characteristics and causes of learning disabilities and existing facilities for such children in schools. From the figure it is clear that the awareness level of teacher trainees about the characteristics and causes of learning disabilities is almost same but the awareness level about the causes of learning disability is slightly higher than characteristics.

TABLE 4. STANDARD DEVIATION AND PERCENTAGE OF AWARENESS OF TEACHER TRAINEES ABOUT LEARNING DISABILITIES WITH RESPECT TO THEIR EDUCATIONAL QUALIFICATION

Educational Qualification	N	Mean	SD	Percentage
Degree	19	41.47	4.43	69.1
PG	23	42.64	3.35	72.06

Table 4 shows the awareness of learning disability with respect to the educational background of teacher trainees. The mean value obtained is 41.47 and 42.64 for trainees have qualification of Degree and Post-graduation. The percentages of mean values obtained are 69.1 and 71.06 respectively. From the table it is clear that there is slight difference in the awareness of two groups.

CONCLUSION

The result of the study revealed that the teacher trainees possessed an average level of awareness about learning disability. This might be due to the teacher education curriculum adopted in India. In which the special education is included as an optional subject in general teacher education curriculum and not as a compulsory subject (Agarwal, 2014).

Various research studies conducted on the awareness of school teachers and teacher educators about learning disability are also indicated their lack of awareness. They have possessed a low to moderate level of awareness (Agarwal, 2015., Sawhney 2014., Gandhimathi & Eljo, 2010). So it is very essential to take action to improve the awareness of teachers, teacher educators and teacher trainees about learning disability. Otherwise such children are ignored in our mainstream classrooms.

REFERENCE

- (1) Agarwal, G. (2015).Awareness of Learning Disabilities among Teachers of Primary Schools. <https://www.researchgate.net/publication/283574444>
- (2) Gandhimathi U. & Eljo, G.J.(2010).Awareness about learning disabilities among the primary school teachers. Cauvery Research Journal, vol. 3, 1&2(2010), 71-72.
- (3) Hallahan, D. P., Kauffman, J. M., & Pullen, P. C. (2015). Exceptional learners: An introduction to special education, 13th Edition. <https://www.researchgate.net/pub>
- (4) Sawhney, N.(2014). Study Of Awareness Of Learning Disabilities Among Elementary School Teachers. <https://www.researchgate.net/publication/278029676>.
- (5) Shari M1, & Vranda, N.(2015) Knowledge of Primary School Teachers in Identifying Children with Learning Disabilities. www.dcidj.org .Vol. 26, No.3, 2015; doi 10.5463/DCID.v26i3.443.
- (6) UNESCO. (1994). The Salamanca Statement and Frame Work for Action. Retrieved from www.unesco.org.
- (7) UNCRPD. (2006). Article 24. Retrieved from www.un.org.



PERFORMANCE CAPABILITIES OF COLLEGE FEMALE ATHLETES

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ABSTRACT

Globally sports and athletics receive much attention today. The sports industry is growing by leaps and bounds. India is making rapid strides in the field of sports. Indian athletes are endeavouring their best to top in the national and international arena. Their performance is often obstructed by lack of stamina and poor health due to nutritional deficiencies and disorders. Moreover lack of grass root level sports and training, poor stature, poor sub optimal diet, poor knowledge and understanding about sports nutrition are the causes of poor performance. Physical fitness is one of the richest possessions. It cannot be purchased and has to be earned through a daily routine of right diet and physical exercise. Optimal physical fitness aids to look better, feel better and experience good health, leading to high quality of life. It is an inseparable part of sports performance and achievement. It brings success, helps to withstand stress and strain caused by sports and prevents injuries. Physical fitness is associated with a person's ability to work effectively, enjoy leisure time, be healthy, resist hypokinetic diseases or conditions. Hence the present study was undertaken to study the performance capabilities of College Female athletes. The results revealed the need for dietary improvement to enhance performance capabilities.

KEYWORDS: Globally, Hypokinetic,

INTRODUCTION

The performance capability of an individual can be assessed by measuring the performance related fitness attributes. Performance capability or physical fitness comprised of two components namely health related components and skill related components. The health-related components of physical fitness are directly associated with good health. The five components of health related physical fitness are body composition, cardio-respiratory endurance, flexibility, muscular endurance and strength. Each health related fitness characteristic has a direct relationship to good health and reduced risk for hypokinetic disease. High levels of health related fitness relate more to performance than to health benefits (Chanda and Mathur, 2005).

The skill related components of physical fitness are associated more with performance than with good health. The components of skill related physical fitness are agility, balance, co-ordination, power, reaction time and speed. They are called skill-related because people who possess them find it easy to achieve high levels of performance in motor skills, such as those required in sports and in specific types of jobs. For excellence in performance in sports and games both health related and skill related physical fitness are essential (Asis Goswami, 2011).

OBJECTIVE

To study the performance capabilities of College Female athletes.

METHODOLOGY

The present research was carried out in Chennai city in Tamilnadu, India. As the study involved female athletes participating in sports and games, institutions which had well established sports and games departments were identified. Thus three colleges namely Queen Mary's college (QMC), Quaid-e-millath Government college for women (QMGCW) and Ethiraj college for women (ECW) were selected for the study.

Study sample for the present research included 530 female athletes in the age group of 18 to 24 years, who were young adults, in their prime productive stage. Complete enumeration was used in the selection of subjects. Socio- economic status and nutritional status were assessed for all the selected 530 athletes. From this 530 athletes a subsample of 100 athletes were selected by judgment sampling method for evaluating the endurance capabilities

RESULTS AND DISCUSSION

Collection of socio-economic and athletic profile of the selected athletes revealed domination of nuclear families (77%) with three to five members (63%). The educational, occupational and income status of the parents were very low. Seventy two percent of the selected athletes belonged to low income group with the family income of Rs 33001 to 55000 per annum. The selected athletes were in the age group of 18 to 24 years. Maximum number of 189 athletes (36%) were in the age group of 18. Most of the athletes were either first(38%) or second born(44%). Greater (88%) participation was noted in team events than track events.

1. Health related fitness tests

The results of the health related fitness namely cardio-respiratory endurance by Harvard step test, treadmill test, electronic bicycling, 2000 meters brisk walking and 1500 meters middle distance running; muscular endurance by floor push- ups test, flexibility by modified sit and reach test are presented and discussed in the following Tables.

a. Cardio-respiratory endurance tests**i. Harvard step test**

Cardio - respiratory fitness level as evaluated by Harvard step test which is expressed as Physical Efficiency Index (PEI) is shown in Table 1

Table 1
PHYSICAL EFFICIENCY INDEX OF THE SELECTED SUBJECTS
(Harvard step test)

Category	PEI	Percent
Excellent	90 and above	41
Good	80 to 89	38
High average	65 to 79	21
Low average	55 to 64	Nil
Total		100

The physical efficiency index of the selected athletes shown in Table 30 reveal that 41 percent of the subjects had secured scores above 90 and thus they were classified as excellent category. The heart is a powerful organ that pumps blood throughout the body. The results indicate that athletes in the “excellent” category have a strong and fit heart and ability to pump adequate blood even during heavy performance levels. Thirty eight percent of athletes had scored between 80 to 89 moving out of the high fitness zone to a low performance zone. Twenty one percent of the selected athletes were in the high average zone indicating reduction in performance capability. None of the athletes were in low average category. Since the subjects were already in athletic training and practice, the cardiac endurance of these subjects very high. They had the stamina to with stand stress

ii. Tread mill test

The results of the treadmill test conducted at a speed of 10km/hour with four percent inclination for 12 minutes are given in Table 2.

Table 2
DISTANCE COVERED BY THE ATHLETES IN TREADMILL TEST

Distance (kms)	Per cent
1.58-1.53	27
1.52-1.47	31
1.46-1.41	13
1.40-1.32	29
TOTAL	100

Treadmill is the most commonly used cardiovascular exercise machine. Treadmill and electronic bicycling tests utilize a series of rising exercise intensities. These tests are called as

incremental or graded exercise tests whereby treadmill speed, gradient or load applied are increased every two to three minutes, depending upon the protocol chosen. The health status of the athletes determines the choice of the protocol chosen.

The data on treadmill test presented in Table 2 show a maximum distance coverage of 1.58 km/12 minutes and a minimum distance of 1.32 kms by the selected athletes. Data from Cooper, Charles (2009) the distance covered in 12 minutes by the athlete is less than 1.70 km that would indicate low fitness zone, whereas the elite athletes cover present research the selected athletes fell under low fitness zone. This could be attributed to their low endurance level. Moreover the inclination (4%) provided in the treadmill produced stressful situation on the athletes cardiac and pulmonary system. This result brings to light the need for improving the health and stamina of the athletes, which is necessary for withholding normal cardiac function in stressful exercises.

iii. Electronic bicycling

Cardiac endurance capacity can be measured using an electronic bicycling also. The athletes were requested to do the pedaling for 15 minutes as fast as they can and the distance covered by each athlete was recorded, from the monitor display and are presented in Table 3

Table 3
DISTANCE COVERED BY THE ATHLETES IN ELECTRONIC BICYCLING TEST

Distance (km)	Percent
1.20-1.50	17
1.51-1.75	23
1.76-2.00	24
2.01-2.25	15
2.26-2.50	17
2.51-2.68	4
TOTAL	100

Data on the distance covered in electronic bicycling test presented in Table 32 reveal that 21 percent of the selected athletes were able to cover the distance of 2.26 km to 2.68 km in 15 minutes indicating a healthy cardio-respiratory endurance. Thirty nine percent had covered 1.76km to 2.25km showing good cardio-respiratory endurance and stamina. Forty percent had covered 1.20 km to 1.75 km which reveals comparatively poor fitness scale.

Iv. Two thousand meters brisk walking

Walking is a heel and toe sport. It is an aerobic exercise. Oxidative energy transfer takes place in the mitochondria of cells and utilizes a combination of muscle glycogen, intra cellular fatty acids and amino acids. Hence the breakdown products from both glycolysis and beta oxidation are utilized resulting in slower rate of transfer of energy (Berardi, 2009). The results of the 2000m walking by the selected subjects is depicted in the Table 4

Table 4**TIME TAKEN BY THE ATHLETES TO COVER 2000M BRISK WALKING**

Time taken(minutes)	Percent
12.0-13.59	15
14.0-15.59	30
16.0-16.59	32
17.0-17.59	23
Total	100

From the Table 4 it is noted that 15 percent had completed 2000m race walking with the very good pace to cover the distance in 12.0 to 13.59 seconds. This pace helps the athletes to pursue health benefits of walking. Thirty percent covered the distance with slightly lesser speed to complete the distance in 14.0 to 15.59 minutes. Thirty two percent had taken 16.0 to 16.59 minutes to complete the 2000 meters brisk walking. Only 23 percent had taken 17 to 17.59 minutes to complete 2000 meters brisk walking.

Renolds (2013) quotes a study by Williams, a statistician at Berkley National laboratory that the health benefits of walking can be obtained at a faster pace. In his study he had concluded that females had faster pace than males.

According to the World Book of Encyclopedia, an expert walker can walk one mile(1.6 k m)in 6.5 minutes. One of the athletes had covered 2000m brisk walking in 6.47 minutes indicating a very good record among other athletes.

v. Thousand five hundred meters middle distance running

The 1500 middle distance running is referred as “The metric mile”. It requires endurance, quick speed, proper form and mental focus. The results of the 1500m middle distance running is presented in Table 5

Table 5**THOUSAND FIVE HUNDRED MIDDLE DISTANCE RUNNING EVENT**

Duration(minutes)	Percent
5.0-5.9	11
6.0-6.9	78
7.0-8.9	11
TOTAL	100

Data in Table 5 reveals that 78 percent of athletes had taken 6.0 to 6.9 minutes to complete the 1500m middle distance running followed by 11 percent each completing in 5.0 to 5.9 and 7.0 to 8.9 minutes. It is a high intensity exercise involving longer than two minutes. According to Berardi et al.,(2009) 84 percent of energy from is obtained from aerobic and 16 percent from anaerobic oxidation.

2. Skill related performance tests

a. Speed test

Speed is the ability to perform a movement in a short period of time. The results of the speed fitness test is depicted in Table 6

Table 6
CATEGORIZATION OF ATHLETES ACCORDING TO SPEED IN 100 M DASH

Hundred meters dash		
Category*	Time (seconds)	Percentage of athletes
Excellent	14-16	9
Very good	16-18	42
Good	18-20	31
Fair	20-22	18
Total		100

* (www.mtdruitt-h.schools.nsw.edu.au/.../Fitness%20Testing%20averages.d.)

The 100 meter dash is a sprint race in track events which is most popular and prestigious event

It is evident from the data presented in Table 6 that time taken in seconds to complete the 100m dash ranged from 14 seconds to 22 seconds. Accordingly the subjects were classified into excellent, very good, good and fair. The results indicate that maximum number of athletes (42 percent) were in the very good category they 16 – 18 seconds to cover the distance of 100 m. Thirty one percent of the subjects had taken 18 – 20 seconds and were ranked as good. At the same time 18 percent were classified as fair and the speed was very low consume more time. If adequate nutritious diet is regularly provided the stamina and speed of these athletes can be improved. Nine percent were classified as ‘excellent’ and they were the fastest with 14 to 16 seconds.

b. Agility test

Agility is tested by the ability of the body to rapidly and accurately change the direction of the movement of the entire body in space and can be measured by shuttle run. The results of the 4x10 meters shuttle run conducted to assess the agility of the athletes are given in Table 7

Table 7
TIME TAKEN BY THE SELECTED ATHLETES IN SHUTTLE RUN

Time in (seconds)	Percentage of athletes
10-12	87
12-14	3
14-16	10
16-18	Nil
Total	100

The time taken to complete the shuttle run presented in Table 36 indicates that 87 percent were able to cover the distance within 10 to 12 seconds. Three percent covered in 12 to 14 seconds. The rest 10 percent had taken 14 to 16 seconds to cover the distance. Good health and stamina are essential to withstand the ability to change the direction of the movement of the entire body in space. The results indicate good stamina and agility. A study conducted by Devi and Kumari (2014) among female college athletes showed an average of 12.92 seconds for shuttle run. The subjects of the present research have registered better performance. The performance would be much better if the haemoglobin level of the subjects are improved, because the speed in this test depends upon the oxygen carry in capacity of blood.

CONCLUSION

The basic principle of sports excellence is mainly dependent on athletes' physique and dietary intake apart from training and physiological concepts. The results of performance capabilities necessitated the need for improving the diet of athletes to enhance the performance capabilities.

LIST OF REFERENCES

- Asis Goswami. (2011). Methodology for skill related fitness in Methodologies for Fitness Assessment, Edited by Sen Ray,K., Subbulakshmi, G and Subhadra, M. Ane Books Pvt. Ltd,Mumbai; Pp 63-75.
- Berardi, J. and Andrews, R. (2009). Specialist in Fitness Nutrition. International sports sciences Association; Pp 1-380.
- Chanda, R. and Mathur, P. (2015). Nutrition-A Lifecycle approach. Orient Black Swan, New Delhi, ISBN 978-81-25059301; Pp 350-353,365-378.
- Charles, B., Carbin Gregory, J., Welkr William, R., Corbin, Karen A. Welk and Cara L. Sidman. (2009). Concepts of Fitness and Wellness- a comprehensive lifestyle approach, Eighth Edition, McGraw Hill publishing Company, New York, ISBN :978-0-07-12529-2; Pp 1-59,75, 83-95, 275-282.
- Devi, S. and Kumari, S. (2014). Physical fitness status of female college athletics. Research journal of physical education sciences, 2; ISSN 23209011
- Jourkesh,M.(2011).Determination of fitness level in male and female college aged students.Arch.Appl.Sci.Res.,3;Pp 326-333
- Ortego, F.B., Artero, E.G., Ruiz, J.R., Vincent Rodriquez Bergman, P., Haqstomer, M., Ottevaer, Nagye, Kohsta, D., Rev Lopezjp, Polito, A., Dietrich, S., Plada, m., Begin, L., Monisoy, Sjostrom, M. and Castilo, M.(2011). Helena study group (2008). Reliability of health related physical fitness tests in European adolescents IN J Obes, doi 10-1038/no,183; Pp 32, 549-557.
- Renolds,G.(2013).Why a brisk walk is better?well.blogs.nytimes.com/2013/12/04
- Wells, K.F. and Dillion, E.K. (1952). The sit and reach. A test of back and leg flexibility. Research quarterly, 23; Pp 115-118.



PYHSIO CHEMICAL AND QUALITY CHARACTERISTICS OF OPTIMIZED COOKIES DEVELOPED USING PEARL MILLET AND FREEZE DRIED BANANA FLOUR

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ABSTRACT

Millets are one of the oldest foods known that has recently gained popularity as a delicious and nutritious grain due to its nutritious benefits. Pearl millet contains high amount of iron (8mg/100g) and Zinc (3.1mg/100g) that help to increase the hemoglobin levels. Green banana has high nutritional value representing a good source of resistant starch, dietary fiber, vitamin B6, vitamin C, potassium, phosphorous and manganese and also promote regeneration of red blood cells. Cookies are most significant bakery product in the world and are an important snack liked by children. Thus, for the health conscious genera a study was undertaken with an objective to develop pearl millet cookies with incorporation of freeze dried ripe green banana flour and to analyze its physiochemical and quality characteristics. Using RSM the cookies were optimized. The physical properties diameter, thickness were assessed by AACC (1955) and the spread ratio according to (Shrestha, 2002). The nutrients and microbial content were assessed using standard procedures. The diameter and the thickness of optimized cookies were higher when compared to control. The spread ratio decreased with addition of banana flour. The mean value of energy in optimized cookies increased to 488.3 kcal/100g, protein 9.2 percent, fat 20.6 percent, crude fiber 2.72 percent, vitamin C 5.50mg, and iron 8.4 mg. Cookies stored in room temperature was fit for consumption till 7th day, of preparation and till 15 days at cold storage. Owing to the high retention of nutrient in freeze dried banana flour and pearl millet, the development of product may be used for sports personnel in order to increase the physical strength and endurance.

KEYWORDS: Potassium, Phosphorous, Diameter, Thickness

INTRODUCTION

In the recent years, millets are recognized as important substitutes for major cereal crop and are claimed to be future food for better health and nutrition security. Because of their important nutritional qualities there is a need to receive their usage in daily diet (Veena et al., 2004).

Among the millets, the major millet, Pearl millet (*Pennisetum glaucum*) kambu in Tamil has a wide adaptability to local environments for its properties of been tolerant to drought and heat. Currently India is the largest producer of pearl millet both in terms of area and production and it has potential for future human use (Krishan, 2011).

Banana is one of the most widely distributed and consumed fruit in the tropical and subtropical countries. Considering the nutritional aspects, it is one of the world's leading food crops with a great source of minerals, vitamins, carbohydrates, flavonoids, phenolic compounds. It is both economical and easily accessible to people of all sections of the society, thus addressing food insecurity problems in many countries (Mohammad, 2011).

Banana is favorable for industrial processing due to its rich content of soluble solids, minerals and low acidity. When banana is ripened is a soft and delicate fruits with a post-harvest shelf life of 5-10 days. Ripe banana is very perishable and subject to fast deterioration after harvesting (Luis, 2007).

Among the banana, green banana (*Musa sapientum*) pachai vazhai pazam in tamil is one of the variety produced in India. It is a good source of fiber, vitamins and minerals, phenolic acids, resistant starch which are important for human health. Green banana is a food great value recommended for several pathological conditions, including constipation and diarrhea (Farage, 2004).

Being highly perishable, a new economic strategy is to utilize green banana in the form of flour so that it can be used in food industry for the preparation of baked product due to its different flavor and texture. It is suitable for incorporation into food products as sweeter, solubility, high energy content, and sugar - rich and easily digested, enriched with minerals such as potassium and phosphorus and recognized for its desirable flavor. It also contains various antioxidants and phenolic compounds such as catechin, epicatechin, lignin and anthocyanins (Abbas, 2009).

The development of new product is a strategic area of the food industry. Consumers are interested in those foods which have the traditional nutritional aspects and which provide health benefits by regular ingestion. Also there is a need for replacing refined wheat flour with pearl millet flour of better nutritive quality. Cookies are most significant bakery product in the world and are an important snack liked by children. Thus, for the health conscious genera a study was undertaken with an objective to develop pearl millet cookies with incorporation of freeze dried ripe green banana flour and to analyze its physiochemical and quality characteristics.

MATERIALS AND METHODS

2.1 Processing of pearl millet and banana flour

The pearl millet purchased were cleaned and washed to remove dust and foreign materials. One kg of pearl millet was roasted in open pan at 200⁰ C for 10 minutes (Florence, 2014). The roasted pearl millet was milled at local domestic grain flour mill. Then the whole flour was sieved through a 44 mesh sieve, to obtain fine flour (British standard sieve, microns-355). Finally the flour was stored in airtight container for the study.

A recent study on effects of drying on the physicochemical and functional properties of green banana flour and development of baked product by Asif-ul-Alam et al (2014) opines that green banana flour obtained from freeze drying method when compared to hot air retained its nutrient content, had less moisture content and had higher foaming capacity (10.48 percent). It was also reported that the increased concentration of green banana flour, decreased spread ratio of biscuits. Hence based on literature evidences the ripe green banana that was freeze dried was chosen to incorporate with PMF for the development of cookies. The product was denoted as FDRGBF in the study denoting freeze dried ripe green banana flour. Ripe green banana flour was procured from Nihar Foods Private Limited, Gujarat.

2.2 Preparation of cookies using pearl millet flour and riped green banana flour

Measured quantity of Butter and powdered sugar were creamed in a mixer at speed 60rpm for 120 seconds. The weighed pearl millet flour, ripe green banana flour and baking powder was transferred to the above cream and mixed for 60 seconds at speed 60rpm to get the cookie dough. Further mixing was done to obtain smooth dough and the dough was allowed to relax for 15 minutes before rolling out (Bhawna, 2013).

The dough was then kneaded and rolled out into a uniform thickness of 0.6mm and cut into round shape by circular cookie cutter of 5.5 cm diameter. These circular pieces of cookies were transferred into butter paper trays and placed in baking oven and baked at 175⁰ c for 20 minutes. The baked cookies were taken out and allowed to cool at room temperature for 15 minutes. Cookies were packed in air tight plastic container. Cookies with 100 percent pearl millet flour (PMF) served as control. Cookies developed in six different variations of PMF and FDRGBF served as experimental samples.

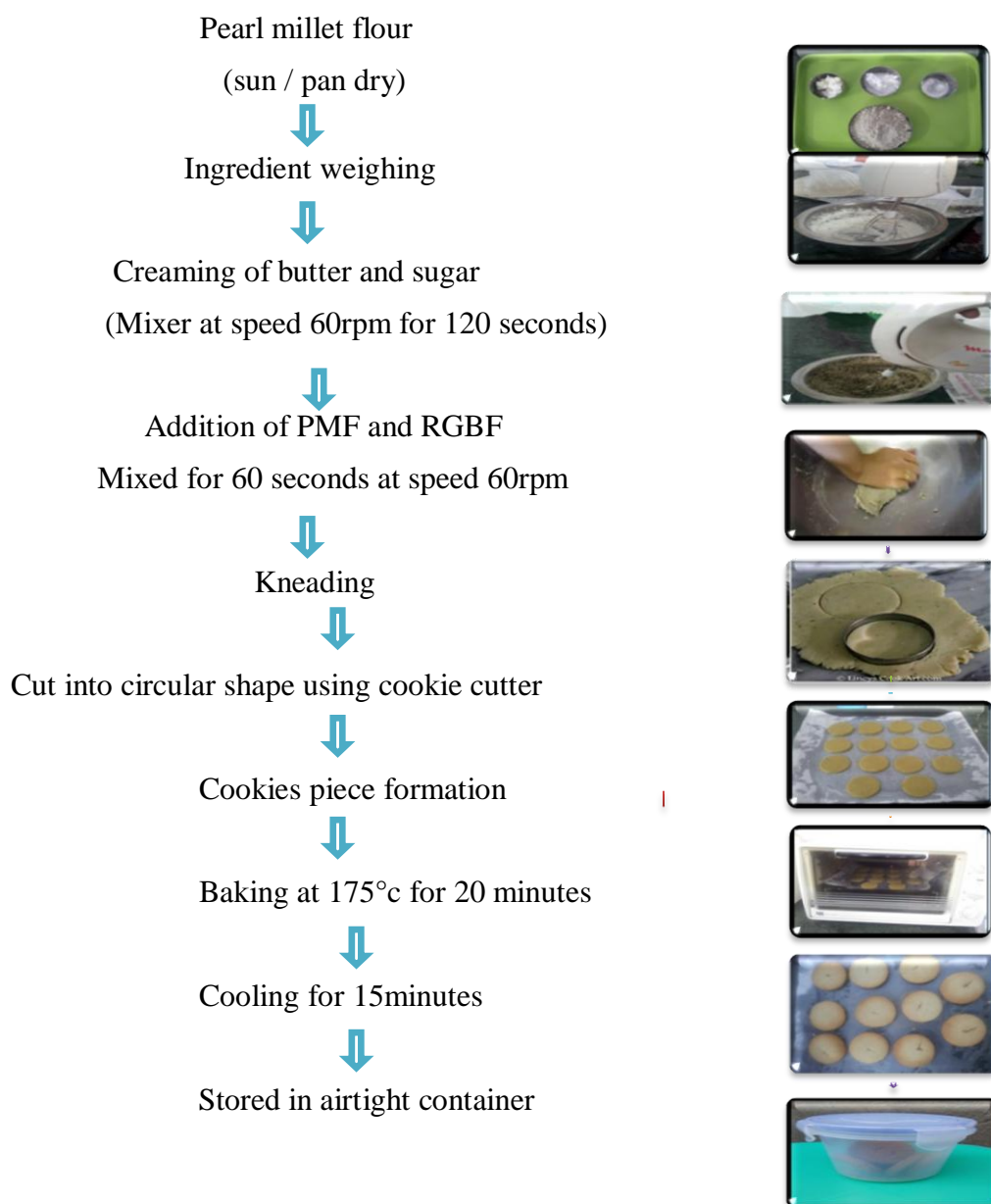


FIGURE 1.

FLOW CHART FOR PREPARATION OF COOKIES**2.3 Evaluation and quality characteristics of optimized ripe green banana flour incorporated cookies**

The cookies was optimized using Response Surface Methodology and the overall accepted was 90g pearl millet flour, 10g ripe green banana flour along with unsalted butter, powdered sugar and baking powder cookies and the physicochemical and microbial quality were assessed.

Physical properties

The physical properties of the control and optimized cookies such as diameter, thickness and

spread ratio were assessed .All the experiments were repeated in triplicates.

Diameter

The diameter of the six cookies were determined and placed edge to edge. The total diameter of the six cookies was measured in mm by using vernier caliper. The cookies were rotated at an angle of 90⁰c. (AACC, 1955).

Thickness

To determine the thickness six cookies were placed on top of one another. The total height was measured in millimeter within a vernier caliper (AACC, 1955).

Spread ratio

Spread ratio was calculated as diameter (length) to thickness ratio (Shrestha, 2002).

Spread ratio = Diameter/ thickness

Proximate Composition

The proximate composition of the control and developed cookies such as moisture, ash, carbohydrate(Muller,1980), protein, fat, crude fibre, energy value, vitamin-C and iron were analyzed using AOAC(2000) in triplicates .

Microbial quality

Optimized cookies were stored in room temperature and in cold condition to check the shelf life of total bacterial count of cookies at intervals of 0th days, 7th, 15th and 20th day .

RESULTS AND DISCUSSION

3.1 Physical properties of optimized cookies

The physical parameters of control and optimized cookies such as diameter (D), thickness (T) were determined by using vernier caliper and spread ratio was calculated by (D/T). The table 3.1 and Figure 2 shows the evaluation of physical properties of optimized cookies.

Table – 1
PHYSICAL CHARACTERISTICS OF OPTIMIZED COOKIES

Parameters	Control cookies	Optimized cookies
Diameter (mm)	86.6	88.0
Thickness (mm)	10.6	11.0
Spread ratio(D/T)	8.1	8.0

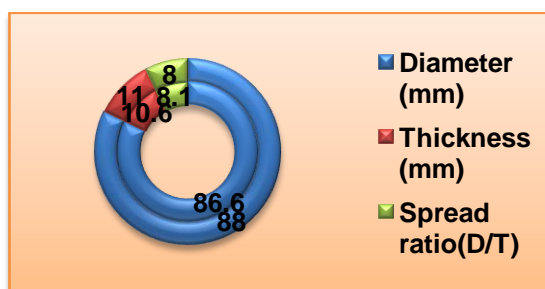


Figure – 2 PHYSICAL CHARACTERISTICS OF OPTIMIZED COOKIES

Among the cookies, the diameter and the thickness of optimized cookies was higher when compared to control. The spread ratio decreased with addition of banana flour. A similar findings was noted in study by Asif-Ul-Alam (2014), for biscuits where the spread ratio and percent

spread of control biscuits were 9.73 and 100 respectively. Spread ratio and percent spread decreased with the addition of banana flour. He also reported that these parameters decreased highly in hot air dried flour biscuits than freeze dried flour biscuits. Other researcher also reported reduction in the spread ratio when soy flour and fenugreek flour were substituted for wheat flour (Hood and Jood 2005).

3.2 Chemical analysis of optimized cookies

Nutrient analysis provide information about a wide variety of different nutritional content of foods and food products. Food composition provide information on chemical forms of nutrients and the presence and amount of interacting components and thus provide information on their bioavailability (Elmadfa, 2010).

The table 3.2 shows the nutrient analysis of optimized cookie and control cookie.

Table - 2
NUTRIENT CONTENT OF CONTROL Vs OPTIMIZED COOKIES

Nutrient	Control cookies %w/w	Optimized cookie %w/w
Moisture	0.58 ± 0.01	2.08 ± 0.00
Ash	0.78 ± 0.01	0.83 ± 0.00
Protein	8.26 ± 0.02	9.2 ± 0.02
CHO	71.5 ± 0.17	73.1 ± 0.28
Fat	18.2 ± 0.02	20.6 ± 0.00
Crude fiber	2.05 ± 0.01	2.75 ± 0.00
Energy (Kcal)/100g	486 ± 1.51	488.3 ± 0.30
Vitamin-c (mg)/100g	0.00 ± 0.00	5.50 ± 0.00
Iron (mg)/100g	6.45 ± 0.01	8.4 ± 0.00

Results are expressed as mean ± S.D

Table 2 shows that there is increase in the nutrient content of optimized cookies when compared to control cookies due to the addition of RGBF.

The moisture content of optimized cookies was higher 2.08 when compared to that of control cookies was lower 0.58. The reported moisture content of pearl millet cookies was higher and ranged from 2.57 – 2.67 percent (Archana, 2004). Increase in moisture content may be due to the incorporation of ripe green banana flour. This was due to hygroscopic nature of the flour to absorb moisture from the surrounding environment during the preparation of cookies.

The ash content of the optimized cookies and control cookies was found to be 0.83 and 0.78 percent respectively. Ikenbomah et al., (1986) reported that the ash content indicates a rough estimation of the mineral value of the product. The ash content is the organic residue remaining after the organic matter has been burnt away.

The mean value of energy in optimized cookies increased to 488.3 kcal/100g when compared to control. The protein content of the control cookies was found to be 8.26 percent and the optimized cookies was 9.2percent. The carbohydrate content was higher in optimized cookies 73.1percent when compared to control cookies 71.5percent. The fat content of the control and optimized cookies was found to 18.2 and 20.6 g respectively Valle (2000)also documented that Pearl millet is well identified for its high fat content .

The mean Crude fiber content of optimized cookies showed that there was a slightly increase of 2.75 when compared to control cookies. In the study of Chong (2007) finds that the replacement of wheat flour with increasing level of BF and additional of 10percent oat β -glucan resulted in significantly higher ($p<0.05$) proximate parameters (moisture, protein, crude fiber, ash, and fat content), total dietary fiber (TDF), resistant starch (RS) and some essential minerals.

Vitamin - C content present in the optimized cookies was 5.50 mg due to the addition of RGBF whereas vitamin – C was absent in control cookies. Similarly the iron levels of optimized cookies 8.4 mg also was high when compared to control cookies, due to the addition of FDRGBF and PDPMF.

3.3 Microbial quality of optimized cookies

Food safety is known problem worldwide, affecting hundreds of millions of people that suffer from contaminated food. WHO defines this issue as “one of the most widespread health problems and a major cause of the reduction of economic productivity”. Microbial testing is the primary indicator in shelf life. Shelf life is the recommendation of time that products can be stored, during which the defined quality of a specified proportion of the goods remain acceptable under expected conditions of distribution, storage and display. The shelf-life of a food begins from the time the food is produced and packed (https://www.fsai.ie/publications_GN18_shelf-life).

Table - 3
TOTAL BACTERIAL COUNT – ROOM TEMPERATURE

Day	No. of colonies with corresponding dilution (Cold Condition)					Colony Forming Unit /ml
	Dilution					
	10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	10 ⁻⁵	
0	0	0	0	0	0	0
7	0	0	0	0	0	0
15	0	0	0	0	0	0
20	01	0	0	0	0	5 (only 5 bacteria in per ml)

TNTC – Too Numerous To Count

Microbial count

Standard plate count also referred to as ascorbic acid plate or total plate count can provide a general indicator of the microbiological quality of a food. A standard plate count will not differential between the natural microflora of food spoilage microorganism.

The table 3 and 4 shows the microbial analysis of total bacterial count 0th, 7th, 15th and 20th day carried out for the cookies stored in room temperature and cold condition.

The table 3 reveals that the microbial load for optimized cookies. It was stored in sealed zip lock cover in room temperature to find the fungal growth for a period of 20 days. The number of colonies started to increase on the 7th day when compared to that of 0th day. But on the 20th day observation the colonies load was heavy and was too numerous to count and hence was considered to be spoil and not usage of fit for consumption, and hence it is advised that cookies can be stored in room temperature, is fit for consumption till 7th day, of preparation.

The table 4 reveals that the microbial load for cookies stored in cold condition in a sealed zip lock cover. No colonies were found in cold condition during the storage of 0th, 7th, 15th day whereas in 20th day colonies were formed in 10⁻¹ dilution. Thus it can be inferred that cookies prepared using 90g of pan dried pearl millet flour and 10g of freeze dried green banana flour, can be stored and maintained till 15th day without any spoilage

Table – 4
TOTAL BACTERIAL COUNT – COLD TEMPERATURE

Day	No. of colonies with corresponding dilution (Room Temperature)					Colony Forming Unit /ml
	Dilution					
	10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	10 ⁻⁵	
0	0	01	0	0	0	5(only 5 bacteria in per ml)
7	277	28	0	0	0	1.5 x 10 ³
15	768	279	91	61	0	5.9 x 10 ³
20	TNTC	89	0	0	0	TNTC

SUMMARY AND CONCLUSION

Healthy snacking is more nutritious, high in nutrient density with as energy, protein, fat, vitamins and minerals. Baking industry is considered as one of the major segments of food processing all over India. Traditional cookies are claimed to be lacking in other essential nutritional component such as dietary fiber, vitamins and minerals which are lost during processing of flour. Optimum solution by numerical optimization obtained was 90 percent proportion of PMF and 10 percent of FRGBF to get maximum quality and acceptability of vitamin- C rich cookies. Thus in the light of scientific data it may be concluded that pearl millet can be used successfully in preparation of cookies along with freeze dried banana flour without any undesirable changes in physical,

chemical and as a value added product can be recommended for the children specially involved in sports activity to increase the physical strength , boost immune and endurance .

REFERENCES

- AACC (American Association of Cereal Chemists) (2000): Approved Method of the American Association of Cereal Chemists, Inc.MN, USA.
- Abbas F.M.A. and Saifullah R. et al. (2009): Assessment of physical properties of banana flour prepared from two varieties: Cavendish and Dream banana. *Journal of International Food Research*, vol. 16, p.183-189
- AOAC (Association of Official Analytical Chemists) (1995): Official Methods of Analysis, 16th edn., Arlington, Virginia, USA.
- Archana R, Asna K, Salil S, Byron H (2004) Influence of depigmentation of pearl millet (*Pennisetumgluacum* L) on sensory attributes, nutrient composition and in vitro digestion of biscuits. *LWT* 37: 184-192.
- Asif-Ul-Alam, S. M., (2014). Effects of Drying on the Physicochemical and Functional Properties of Green Banana (*Musa sapientum*) Flour and Development of Baked Product. *American Journal of Food Science and Technology* 2.4, 128-133.
- Chong li choo, (2010). Utilization of matured green banana (*musa paradisiaca var.awak*) flour and oat beta glucan as fibre ingredients in noodles. University sains Malaysia.
- Elmadfa I Meyer AL. Importance of food composition data to nutrition and public health. *Eur J Clin Nutr.* 2010 Nov;64 Suppl 3:S4-7. doi: 10.1038/ejcn.2010.202.
- Florence Suma.p, Asna Urooj, Asha MR and Jyotsna Rajiv, (2010). Sensory, physical and Nutritional qualities of cookies prepared from pearl millet (*PennisetumTyphodium*).Department of Studies in food science and Nutrition. *Journal of Food Process Technology*. Volume 5.
- Hooda S and Jood S (2005). Organoleptic and nutritional evaluation of wheat biscuits supplemented with untreated and treated fenugreek flour . *Food Chemistry*90:427-435
- Ikenebomah., M.J, Kok., R and Ingram., J.M. 1986. Processing and fermentation of the African locust bean Can. *J.Food Sci. Tehcnol.* 17 : 48-80.
- Krishnan, PG, Abdelghafor RF. (2011) .Quality of bread from composite flour of sorghum and hard white winter wheat *Journal of Food Science and Technology*. 3(1), 9-15.
- Mohamed SA, Al-Hindi RR, Al-Najada AR, (2011). Isolation and identification of some fruit spoilage fungi: Screening of plant cell wall degrading enzymes. *African Journal of Microbiology Research*,5 (4): 443-448.
- Muller, H.G. and G. Tobin. 1980. Nutrition and Food Processing. Groom Helm Ltd, London, UK.
- Veena, B. Chimmad, B.V., Naik, R.K. and Shantakumar, G. (2004), Development of barnyard millet based traditional foods. *Karnataka J. Agricultural Science*, 17 (3): 522-527.



ORGANOLEPTIC EVALUATION OF HERBS AND SPICES INCORPORATED CHAPPATI'S FOR THERAPEUTIC USES

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ABSTRACT

Herbs form an integral part in the conventional medicine for the treatment of different ailments and they are explored in recent years for their multiple health benefits. With the objective to study the acceptability of the chappatis incorporated with different herbs and spices with potential therapeutic uses, five herbs and spices namely, Psidium Guajava (Guava Leaves), Gymnema sylvestre (Sirukurinjan), Piper longum linn (Long Pepper), Solanum virginianum (Kandakathiri), Syzygium cumini (Naval Seed) with known therapeutic and functional properties were selected. The herbs and spices were cleaned, washed, sundried, powdered and their extracts were obtained using standard procedures. The Human Milli Equivalent Dosage (HMED) for herbs and spices extract was calculated based on the rat studies. The extracts were incorporated in chapati's and their organoleptic attributes were evaluated against the standard using a nine point hedonic rating scale by a panel of 20 member. No significant change in organoleptic characteristic was observed between the standard and herbs incorporated chapathis.

KEYWORDS: Sensory Evaluation, Herbs and spices, Psidium Guajava (Guava Leaves), Gymnema sylvestre (Sirukurinjan), Piper longum linn (Long Pepper), Solanum virginianum (Kandakathiri), Syzygium cumini (Naval Seed), Nutraceuticals, functional properties of food.

INTRODUCTION

Herbs and spices are known for their therapeutic properties and are used widely in conventional medicine in subtropical areas for its multiple health benefits. They are generally used as flavoring additive's to culinary dishes. Besides food being a life style choice, age old anecdotal reports from many cultures strongly recommend the use of diet as well as Indian herbs and spices as a remedy for many diseases. Dietary choice remains the basis for maintaining a healthy life style and wellbeing irrespective of age group and metabolic functions. Despite remarkable advances in medicine and pharmaceuticals, exploration of herbs and spices is gaining prominence recently¹.

Herbs and spices with potential nutraceutical properties when included in the normal day to day recipes can serve as a viable tool in the maintenance of blood glucose and lipid level. They also acts as an immune booster and helps in the management of weight. Herbs also eliminate the nutritional deficiencies and restore the normal functions of the body².

Dietary modification in unison with therapeutic herbs and spices can improve the overall health of the human. Thus, herbs and spices with potential nutraceutical properties when included in the normal day to day recipes can serve as a novel economical approach in maintenance of health and fitness.

OBJECTIVES

The objective of the present study is to study the acceptability of the recipes incorporated with selected herbs and spices.

METHODOLOGY

Selection of Herbs and spices

The state of Tamil Nadu in particular houses 131 numbers of the medicinal plants of 115 genera belonging to 64 families³. From the entire list of 402 herbs and spices listed in the herbal Tamil directory, a total of ten herbs namely *Cassia auriculata* (avaram), *Terminalia Chebula* (kadukkai), , *Emblca Officinalis* (Amla), *psidium guajava* (guava leaves), *syzygium cumini* (Naval seed), *Andrographis Paniculata* (Nilavembu), *Gymnea sylvestre* (Sirukurinjan), *Alpinia Galanga* (chittaratta), *Solanum virginianum* (Kandakathiri), *piper longum linn* (Long Pepper) with multiple therapeutic properties were randomly selected using lottery method⁴.

Identification of herbs and spices

Out of ten herbs and spices randomly selected, five of them namely *psidium guajava* (guava leaves), *syzygium cumini* (Naval seed), *Gymnea sylvestre* (Sirukurinjan), *Solanum virginianum* (Kandakathiri), *piper longum linn* (Long Pepper) were selected for the study based on their bioactive component, palatability, availability and feasibility of incorporation.

The above selected herbs and spices were given to the department of Botanical Survey of India, Tamil Nadu Agricultural University and were certified for their authentication.

Processing of Herbs and spices

All the selected five herbs and spices were washed in distill water thoroughly till it is free from dust, dirt and were rinsed and dried. The herbs and spices were washed in running water and then wiped using a clean white muslin cloth to remove the moisture on the surface of the leaves and

were shade dried with adequate air, under dry conditions. The shade dried herbs and spices were then ground to a fine powder and were sieved using a 1.0 mm sieve. The powdered herbs and spices were then stored in a clean, dry container.

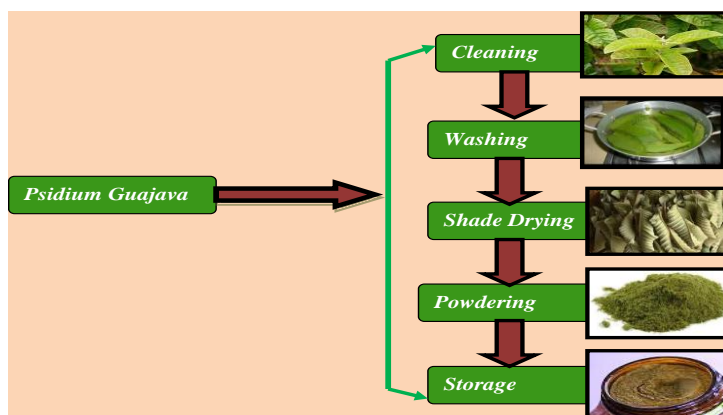


Figure-1

Processing of *Psidium Guajava*(Guava Leaves)

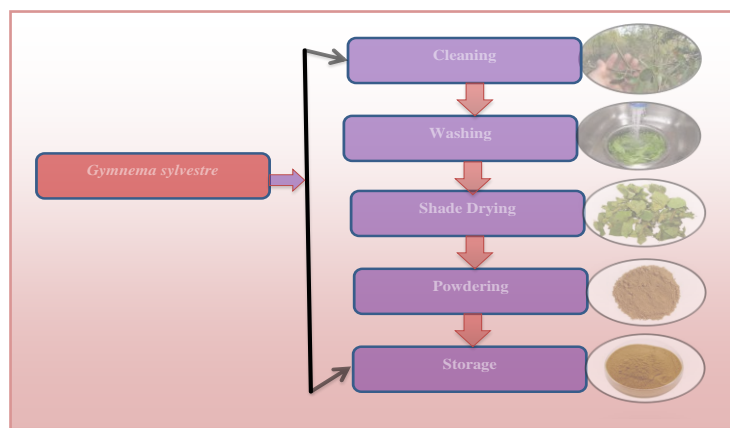


Figure -2

Processing of *gymnema sylvestre* (Sirukurinjan)

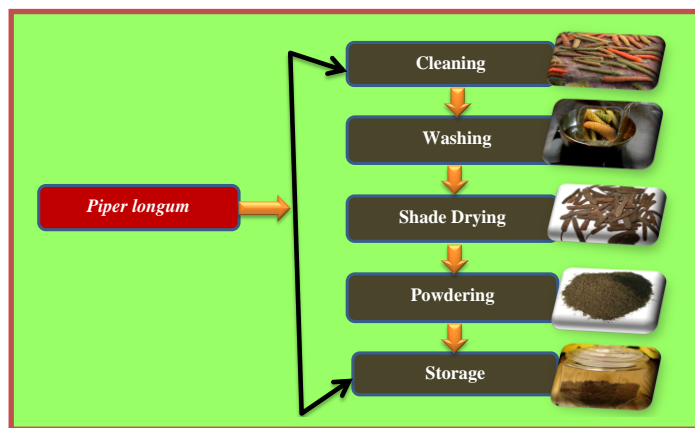


Figure-3

Processing of *Piper Longum*(Long Pepper)

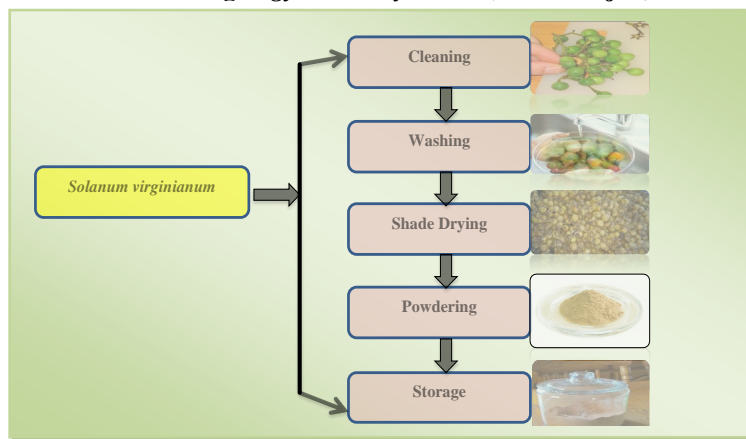


Figure -4

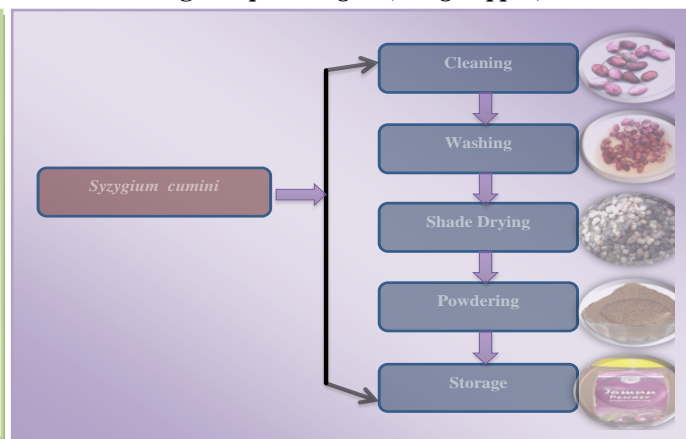


Figure-5

Extraction of Herbs and Spices

The extract of powdered herbs and spices was obtained using decoction method. As per standard procedure, 100 gm of powdered *psidium guajava* (guava leaves), *syzygium cumini* (Naval seed), *Gymnea sylvestre* (Sirukurinjan), *Solanum virginianum* (Kandakathiri), *piper longum linn* (Long Pepper) each was dissolved in 1600ml of water and boiled at 60°C approximately for two hours till it reduces to 400 ml.⁵

Incorporation of herbs and spices extract in chappathi

Chappati an Indian bread made out of whole wheat flour is commonly consumed throughout the country irrespective of age group and economic status. Also intake of chappathi is generally recommended for a diabetic, cardio vascular and a weight reduction diet due to its low fat and high fibre content. Since the recipe easily lends itself for incorporation of herbal extract, it was considered for the study.

Dosage of Incorporation of herbs and spices

As herbs and spices incorporated in recipes as dietary supplement was lessor not explored in human studies in particular, the Human Milli Equivalent Dosage for incorporation in chappathi was computed from rat studies using the formula

$$\text{HED (mg/kg)} = \text{Animal Dose (mg/kg)} \times [\text{Animal km}/\text{Human km}]$$

Results and discussion

The results and discussion of the “*Organoleptic Evaluation of Herbs and Spices Incorporated chappathi for Therapeutic uses*” is as follows

Table 1 project the calculated Human Equivalent Dosage of selected herbs and spices incorporated chappatis for therapeutic uses.

TABLE 1
CALCULATED HUMAN EQUIVALENT DOSAGE OF SELECTED HERBS AND SPICES

Name of herbs and spices	Animal Dosage (kg/mg)	Human Dosage (g)
Guava leaves (<i>Psidium Guajava Linn</i>)	250	2.5
Sirukurinjan (<i>gymnema sylvestre</i>)	18	1
Naval seed (<i>Syzygium cumini</i>)	250	2.5
Long pepper (<i>Piper longum</i>)	200	2
yellow-fruit nightshade (<i>Solanum Xanthocarpum</i>)	200	2

TABLE 2
MEAN ORGANOLEPTIC SCORES OF CHAPPATIS INCORPORATED WITH
PSIDIUM GUAJAVA LEAVES

Attributes	Standard chappathi Mean score	<i>Psidium guajava</i> leaves incorporated chappathi Mean score	t test
Colour	8.3±0.82	8.5±0.52	0.6514 ^{NS}
Flavor	8.5±0.52	8.6±0.51	0.6693 ^{NS}
Consistency	8.1±0.87	8.5±0.52	0.2280 ^{NS}
Taste	8.6±0.51	8±0.47	0.0136*
Appearance	8.6±0.51	8.5±0.52	0.6693 ^{NS}

(*5% significant, NS-Not significant)

The mean organoleptic score of chappati (table 2) incorporated with guava leaf extract showed no significant difference in colour, flavor, consistency and appearance in comparison to the standard chappati, however a significant difference in taste was observed at five percent level of significance. The significant difference in taste can be attribute the after taste effect of guava leaf.

TABLE 3
MEAN ORGANOLEPTIC SCORES OF CHAPPATHIS INCORPORATED WITH
GYMNEMA SYLVESTRE LEAVES

Attributes	Standard chappathi Mean score	<i>Gymnema sylvestre</i> incorporated chappathi Mean score	T test
Colour	8.3±0.82	8.6±0.51	0.03389 ^{NS}
Flavor	8.5±0.52	8.5±0.52	1.0000 ^{NS}
Consistency	8.1±0.87	8.4±0.84	0.4430 ^{NS}
Taste	8.6±0.51	7.8±0.78	0.0142*
Appearance	8.6±0.51	8.4±0.51	0.3921 ^{NS}

(*5% significant, NS-Not significant)

The mean organoleptic score of chappati incorporated with *Gymnema sylvestre* showed no significant difference in sensory attributes except for taste. A five percent level of significant difference in taste was obtained between the chappati incorporated with *Gymnema sylvestre* and the standard chappati. The difference in taste can be attributed to the mild bitterness of *Gymnema sylvestre*.

TABLE 4
MEAN ORGANOLEPTIC SCORES OF CHAPPATHIS INCORPORATED WITH
PIPER LONGUM LINN

Attributes	Standard chappathi Mean score	<i>Solanum virginianum</i> incorporated chappathi Mean score	T test
Colour	8.3±0.82	8.6±0.51	0.3389 ^{NS}
Flavor	8.5±0.52	8±0.66	0.0761 ^{NS}
Consistency	8.1±0.87	7.8±0.63	0.3888 ^{NS}
Taste	8.6±0.51	8.2±0.42	0.0716 ^{NS}
Appearance	8.6±0.51	8.2±0.42	0.965 ^{NS}

(NS-Not significant)

The mean organoleptic score of chappathi incorporated with piper longum showed no significant difference in colour, flavor, taste, consistency, and appearance. *Solanum Virginianum*

TABLE 5
MEAN ORGANOLEPTIC SCORES OF CHAPPATHIS INCORPORATED WITH

Attributes	Standard chappathi Mean score	<i>Piper longum</i> incorporated chappathi Mean score	T test
Colour	8.3±0.82	8.3±0.48	1.0000 ^{NS}
Flavor	8.5±0.52	8.4±0.51	0.6693 ^{NS}
Consistency	8.1±0.87	7.9±0.56	0.5487 ^{NS}
Taste	8.6±0.51	8.1±0.56	0.0513 ^{NS}
Appearance	8.6±0.51	8.2±0.63	0.1360 ^{NS}

(NS-Not significant)

Similarly for the chappathi incorporated with *Solanum virginianum* a herb known for its hypoglycemic and hypolipidemic effect showed no significant difference in mean organoleptic score for colour, flavor, consistency, taste and appearance compared to the standard chappathi. Since *Solanum virginianum* has no distinct flavor or taste, not much of difference in the sensory characteristic was observed⁶

TABLE 6
MEAN ORGANOLEPTIC SCORES OF CHAPPATHIS INCORPORATED WITH
SYZYGIUM CUMINI

Attributes	Standard chappathi Mean score	<i>Syzygium cumini</i> incorporated chappathi Mean score	T test
colour	8.3±0.82	7.9±0.73	0.2643 ^{NS}
flavour	8.5±0.52	8.5±0.84	1.0000 ^{NS}
consistency	8.1±0.87	8.1±0.73	1.0000 ^{NS}
taste	8.6±0.51	7.9±0.56	0.0066**
appearance	8.6±0.51	8.5±0.52	0.6693 ^{NS}

(**- 1% Significant, NS-Not significant)

The mean organoleptic score of chappathi (table 6) incorporated with *Syzygium cumini* extract showed no significant difference in colour, flavor, consistency and appearance in comparison to the standard chappathi, however a significant difference in taste was observed at one percent level of significance. The significant difference in taste can be attribute the after taste savory of *Syzygium cumini*⁷.

CONCLUSION

The organoleptic evaluation of chappati incorporated with herbs and spices showed no significant difference in colour, flavor, taste, consistency, appearance for all the five herbs. Chappatis incorporated with *psidium guajava* (Guava Leaves), *gymnema sylvestre* (Sirukurinjan) and *Solanum virginianum* (Kandankathiri) showed significant difference in taste compared to the standard chappatis at 5 percent level of significance.. Through there was a significant difference in taste, the overall acceptability of the chappatis incorporated with the herbs and spices were not affected and were highly palatable as the score ranged like moderately to like extremely in the hedonic scale . Hence they can be suggested as a therapeutic dietary supplement at house hold level. Hospital dietaries can also incorporate the above herbs and spices in the chappati for therapeutic purpose.

REFERENCE

1. Anitha Mary Mathews , Christina AJM,2014, Antidiabetic Potential Of *Solanum Xanthocarpum* Schradand Wendl. In Stz Nicotinamide Induced Diabetic Rats, World Journal of Pharmacy And Pharmaceutical Sciences, Volume ³, Issue 4, 1378-1386.
2. Bhavana Srivastava , Ajay kumar sinha, Sanjay gaur, Yogesh Barshiliya, Study of hypoglycaemic and hypolipidemic activity of *Eugenia Jambolana* pulp and seed extract in Streptozotocin induced diabetic albino rats, Asian Journal of Pharmacy and Life Science, Vol. 2 (1), Jan-March,2012.
3. Díaz-de-Cerio E, Rodríguez-Nogales A, Algieri F, Romero M, Verardo V, Segura-Carretero A, Duarte J, Galvez J, 2017, The hypoglycemic effects of guava leaf (*Psidium guajava* L.)

extract are associated with improving endothelial dysfunction in mice with diet-induced obesity, Epub 2017 Mar 11.

4. Gulab S. Thakur¹, Rohit Sharma¹, Bhagwan S. Sanodiya¹, Mukeshwar Pandey², GBKS Prasad³ and Prakash S. Bisen^{1, 4}, 2012, *Gymnema sylvestre*: An Alternative Therapeutic Agent for Management of Diabetes, Journal of Applied Pharmaceutical Science Vol. 2 (12), pp. 001-006
5. Handa SS, Khanuja SPS, Longo G, Rakesh DD (2008) Extraction Technologies for Medicinal and Aromatic Plants, (1st edn), no. 66. Italy: United Nations Industrial Development Organization and the International Centre for Science and High Technology.
6. MD Kitukale and AV Chandewar, 2014, An Overview on Some Recent Herbs Having Antidiabetic Potential, Research Journal of Pharmaceutical, Biological and Chemical Sciences, Page No. 190.
7. S. Thenmozhi and S. Rajan, 2014., GC-MS analysis of bioactive compounds in *Psidium guajava* leaves Journal of Pharmacognosy and Phytochemistry 2015; 3(5): 162-166.



IMPACT OF LADDER TRAINING ON SELECTED SPEED AND AGILITY PARAMETERS AMONG COLLEGE MEN HANDBALL PLAYERS

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ABSTRACT

The purpose of the study was to investigate the impact of Ladder training on selected speed and agility parameters among college men handball players. For the purpose of the study, 30 male handball players were selected from Madurai Kamaraj University Department of physical education at madurai district, Tamilnadu. The subjects were underwent Ladder training for three days per week for six weeks. The researcher had been selected the following variables for the present study. Physical fitness variables i: e speed and agility. The data was collected before and after six weeks of training. The participants were tested on speed (50 meter dash) and agility (shuttle run). The data was analyzed by applying analysis of co-variance (ANACOVA). The level of significance was set at 0.05. The findings of the present study have indicated that Ladder training of six weeks have significant effect on selected ladder training I: e speed and agility of men handball players.

KEYWORDS: Ladder Training, Speed And Agility

INTRODUCTION:

The agility ladder is a time tested and proven effective tool for improving our footwork. The training effect is similar to jump rope, but with several advantages. First, agility ladder training is multidirectional. In most sports, we are not staying in one sport. We are moving forward, sideways and sometimes backwards, second, our feet are also allowed to move independently I more complex patterns than jump rope allows ladder training will improve our speed, coordination, timing and balance. ladder, also referred to as speed ladders, is fitness equipment, used in various sports to enhance the flexibility and quickness in athletes Ladder training requires the co-ordination of several muscle groups to sustain the precisely timed and rhythmic movements that are integral to the exercise. ladder training also increases the athlete's ability to react and make accurate changes in direction. Ongoing adjustments also increase an athlete's capacity for steam-lined and efficient movements.

Simeonov P (2013) were evaluated the effectiveness of a multimodal angle indicator with other existing methods for extension ladder angular positioning. **Dennerlein JT, Ronk CJ, Perry MJ(2009)** were developed and tested an audit tool that assesses compliance with best practices guidelines for portable ladder use designed for applications in the construction industry. **Simeonov P (2012)** identified factors affecting extension ladders' angular positioning and evaluate the effectiveness of two anthropometric positioning methods. A leading cause for extension ladder fall incidents is a slide-out event, usually related to suboptimal ladder inclination. Football is a game which calls for strenuous, continuous thrilling action and therefore appeals to the youth the world over. The skills involved in the game are simple natural and yet are highly stimulating and satisfying to anyone who participates in the game

OBJECTIVE OF THE STUDY

The purpose of the study was to find out “the effect of six weeks Ladder training on selected speed and agility parameters among college men handball players. It was hypothesized that there would have significant on the effect of six weeks Ladder training on selected speed and agility parameters among college men handball players.

METHODOLOGY

The purpose of the study was to investigate the Impact of Ladder training on selected speed and agility parameters among college men handball players. For the purpose of the study, 30 male handball players were selected from Madurai Kamaraj University Department of physical education at madurai district, Tamilnadu. The subjects were underwent Ladder training for three days per week for six weeks. Where selected as subjects at random and the aged from 18 to 24 years. The study was formulated as true random group design, consist of pre and post test. The selected subjects divided into 2 equal groups of 15 subjects each. The experimental group underwent treatment for period of six weeks training for three days per week and no training was given to the control group with daily routine work. The two group were statistically analyzed by using analyze of co-variance (ANACOVA).The investigator selected the following variable for the present investigation.

Selection of Variables & Tests

The physical variables and test items were follows

TABLE 1

Variables	Test Items	Unit of measurement
Speed	50 yard dash	Seconds
Agility	Shuttle run	Seconds

TABLE I

**ANALYSIS OF CO-VARIANCE FOR THE PRE, POST AND ADJUSTED POST TEST
MEAN VALUES FOR LADDER TRAINING GROUP AND CONTROL GROUP ON
SPEED**

Test	Ladder Training Group	Control Group	Source of Variance	Sum of square	df	Mean Square	'F' ratio	Table Value
Pre Test Mean	7.82	7.78	Between	0.01	1	0.01	0.05	4.20
			With in	6.26	28	0.22		
Post Test Mean	7.47	7.79	Between	0.78	1	0.78	5.87*	4.20
			With in	3.71	28	0.13		
Adjusted Post Test Mean	7.47	7.79	Between	0.79	1	0.79	5.77*	4.21
			With in	3.69	27	0.14		

***Significant at 0.05 level of confidence**

The table 1 showed that the pre-test mean values on speed of ladder training group and control group are 7.82 and 7.78 respectively. The obtained 'F' ratio 0.05 for pre-test mean was less than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on speed. The post-test mean values on speed of ladder training group and control group are 7.47 and 7.79 respectively. The obtained 'F' ratio 5.87 for post-test mean was greater than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on speed. The adjusted post-test means of ladder training group and control group are 7.47 and 7.79 respectively. The obtained 'F' ratio 5.77 for adjusted post-test mean was greater than the table value 4.21 for df 1 and 27 required for significance at 0.05 level of confidence on speed.

TABLE 2
ANALYSIS OF CO-VARIANCE FOR THE PRE, POST AND ADJUSTED POST TEST
MEAN VALUES FOR LADDER TRAINING GROUP AND CONTROL
GROUP ON AGILITY

Test	Ladder Training Group	Control Group	Source of Variance	Sum of square	df	Mean Square	'F' ratio	Table Value
Pre Test Mean	13.38	13.17	Between	0.33	1	0.33	0.38	4.20
			With in	24.34	28	0.87		
Post Test Mean	12.54	13.13	Between	2.57	1	2.57	5.17*	4.20
			With in	13.91	28	0.50		
Adjusted Post Test Mean	12.53	13.14	Between	2.80	1	2.80	5.62*	4.21
			With in	13.44	27	0.50		

*Significant at 0.05 level of confidence.

The table II showed that the pre-test mean values on agility of ladder training group and control group are 13.38 and 13.17 respectively. The obtained 'F' ratio 0.38 for pre-test mean was less than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on agility. The post-test mean values on agility of ladder training group and control group are 12.54 and 13.13 respectively. The obtained 'F' ratio 5.17 for post-test mean was greater than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on agility. The adjusted post-test means of ladder training group and control group are 12.53 and 13.14 respectively. The obtained 'F' ratio 5.62 for adjusted post-test mean was greater than the table value 4.21 for df 1 and 27 required for significance at 0.05 level of confidence on agility.

CONCLUSION

The result of the study reveals that there was significant improvement in the experimental group. On selected variables such as speed and agility when compared to the control group after the completion of six week training.

REFERENCE

1. Simeonov P (2012) "Factors affecting extension ladder angular positioning", *Human Factors*, 54:3, pp-334-45.
2. Simeonov P et.al (2013) "Research to improve extension ladder angular positioning" *Apply Ergonomics*.44:3, pp-496-502.
3. Dennerlein JT, Ronk CJ, Perry MJ (2009) "Portable ladder assessment tool development and validation-quantifying best practices in the field", *Safety Science*, 1:47:5, pp-636-639.



RELATIVE EFFECT OF FUNCTIONAL AND WEIGHT TRAINING ON STRENGTH AMONG KABADDI PLAYERS

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ABSTRACT

The purpose of the present investigation was to find out the relative effect of functional training, weight training and combined functional and weight training on strength among engineering graduates. To achieve this purpose, sixty Kabaddi Players were selected randomly as subjects from Madurai Kamaraj University affiliated colleges. They were assigned randomly into four groups of fifteen each. Group-I underwent functional training, group-II underwent weight training and group-III underwent combined functional and weight training and group – IV acted as control. All the subjects were tested before and after the treatment on strength. The collected data analyzed by analysis of covariance (ANCOVA) and Scheffe's test. The result of the study showed that due to the twelve weeks of training the strength of the subjects was significantly improved. The above mention studies are supporting my result of study and the investigator found that all the three experimental groups significantly improved the strength comparing to the control group due to the twelve weeks of experimental treatment. One factor is that sports is now a challenging field and intense motivation has encouraged long, hard hours of work and also coaching has become more sophisticated, partially from the assistance of sport specialists and scientists. All the coaches, trainers, physical education personals and doctors are doing their best to improve the performance of the players.

KEYWORDS: Functional Training, Weight Training, Combined Training And Strength.

INTRODUCTION:

Success in many sports depends heavily upon the athlete's explosive leg power and muscular strength. Jumping, throwing, track and field events and other activities, the athlete must be able to use strength as quickly and forcefully as possible. This display comes in the form of speed-strength or power Comana (2004).

Sports performance has dramatically progressed over the past few years. Performance levels unimaginable before are now possible and the number of athletes capable of producing outstanding results is increasing. One factor is that sports is now a challenging field and intense motivation has encouraged long, hard hours of work and also coaching has become more sophisticated, partially from the assistance of sport specialists and scientists. All the coaches, trainers, physical education personals and doctors are doing their best to improve the performance of the players.

Functional training has its origins in rehabilitation. Physical and Occupational therapists often use this approach to retrain patients with movement disorders. Interventions are designed to incorporate task and context specific practice in areas meaningful to each patient, with an overall goal of functional independence (Sullivan, 2007). In the context of body building, functional training involves mainly weight bearing activities targeted at core muscles of the abdomen and lower back.

Weight training and resistance training will both develop strength. If there is an increase in muscle mass as a result of training this is called hypertrophy. Muscle hypertrophy is associated more as a result of training for maximal and elastic strength rather than strength endurance.

METHODOLOGY

Subjects and Variables

The purpose of this study was to find out the relative effect of functional, weight training and combined functional and weight training on strength of engineering graduates. To achieve this purpose sixty Kabaddi Players were selected randomly as subjects from Madurai Kamaraj University affiliated colleges. The age of subject's range between eighteen to twenty two years. The selected subjects were healthy and normal, and they were physically fit enough to undergo the running programme. The selected dependent variable namely strength was measured by leg lift dynamometer, prior to and immediately after the training protocol.

Training Protocol

During the training period, the experimental groups underwent their respective training programme three days per week (*alternative days*) for twelve weeks in addition to their curriculum. The combined functional and weight training group gone one session a day for four days (Monday, Tuesday, Thursday and Friday) in a week, functional fitness training and weight training executed an alternative days for thirty five to forty minutes approximately including warming up and warming down.

Functional training group performed the following functional training exercises namely medicine ball squat with overhead lift, Stair climb with bicep curl, hip extension with reverse fly, wall push with high knee acceleration exercise, diagonal reach with medicine ball, box drill, Knee lift with lateral raise, push-up with hip extension, torso rotation with medicine ball and supine bridge

with arm extension. The initial intensity start from 65% to 90% of their HRR and it was progressively increased once in two weeks by 5% for 12 weeks.

Weight training group performed the following functional training exercises namely clean & press, bench press, half squat, dead lift heel raise, step up with weight on shoulder, leg curl split jump weight on shoulder and arm curl. The initial intensity start from 65% to 90% of their 1RM and it was progressively increased once in two weeks by 5% for 12 weeks.

Combined functional and weight training group performed the both training schedule with alternative days. Four days per week for twelve weeks. Monday and Thursday functional training given and Tuesday and Friday weight training given to the combined functional and weight training group. The initial intensity start from 65% to 90% of their HRR (*for functional training*) and 1RM (*for weight training*) and it was progressively increased once in two weeks by 5% for 12 weeks. Though the subjects are untrained, before starting the specified training they involved ten days general physical fitness programme.

Experimental Design and Statistical Technique

The experimental design used for the study was random group design involving sixty subjects, who were divided at random into four groups such as functional training, weight training, combined functional and weight training and control groups of fifteen each. The data collected from four groups prior to and after experimentation on strength was statistically analyzed for significant differences, if any, by applying the analysis of covariance (ANCOVA). Since four groups were involved, whenever the obtained 'F' ratio for adjusted post test means was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences. In all the cases level of confidence was fixed at 0.05 for significance.

Results

TABLE-I
ANALYSIS OF COVARIANCE ON STRENGTH OF
EXPERIMENTAL AND CONTROL GROUPS

	Functional Training	Weight Training	Combined Functional and Weight Training	Control Group	S O V	Sum of Squares	df	Mean squares	'F' ratio
Pre test Mean	63.13	62.73	63.26	63.01	B	2.33	3	0.04	0.98
SD	4.47	3.65	3.99	4.30	W	949.60	56	16.95	
Post test Mean	68.66	73.53	72.01	63.86	B	824.18	3	274.72	26.95*
SD	2.12	2.97	3.09	4.22	W	570.80	56	10.19	
Adjusted Post test Mean	68.61	73.67	71.89	63.88	B	832.17	3	277.39	43.45*
					W	351.05	55	6.38	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 3 and 55 is 2.77 and degree of freedom 3 and 56 is 2.77)

*Significant at .05 level of confidence

Table-I shows that the pre test mean and standard deviation on strength of functional training, weight training, combined functional and weight training and control groups are 63.13 ± 4.47 , 62.73 ± 3.65 , 63.26 ± 3.99 and 63.01 ± 4.30 respectively. The obtained 'F' ratio value of 0.98 for pre test means on strength of functional training, weight training, combined functional and weight training and control groups were less than the required table value of 2.77 for the degrees of freedom 3 and 56 at 0.05 level of confidence. It reveals that there is statistically insignificant difference among the functional training, weight training, combined functional and weight training and control groups during pre test period. It inferred that the random assignment of the subjects for the four groups is successful.

The post test mean and standard deviation on strength of functional training, weight training, combined functional and weight training and control groups are 68.66 ± 2.12 , 73.53 ± 2.97 , 72.01 ± 3.09 and 63.86 ± 4.22 respectively. The obtained 'F' ratio value of 26.95 for post test means on strength of functional training, weight training, combined functional and weight training and control groups are greater than the required table value of 2.77 for the degrees of freedom 3 and 56 at 0.05 level of confidence.

The adjusted post test means on strength of functional training, weight training, combined functional and weight training and control groups are 68.61, 73.67, 71.89 and 63.88 respectively. The obtained 'F' ratio value of 43.45 on strength were greater than the required table value of 2.77 for the degrees of freedom 3 and 55 at 0.05 level of confidence. It is observed from this finding that significant differences exist among the adjusted post test means of experimental and control groups on strength.

Since, the adjusted post test 'F' ratio value is found to be significant the Scheffe's test is applied as post hoc test to determine the paired mean differences, and it is presented in table-II.

TABLE-2
SCHEFFE'S TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST TEST PAIRED MEANS OF STRENGTH

Adjusted Post Test Means				DM	CI
Functional Training	Weight Training	Combined Functional and Weight Training	Control Group		
68.61	73.67			5.06*	1.88
68.61		71.89		3.28*	1.88
68.61			63.88	4.73*	1.88
	73.67	71.89		1.78	1.88
	73.67		63.88	9.79*	1.88
		71.89	63.88	8.01*	1.88

*Significant

Table-II shows the Scheffe's test results that there is a significant differences between the adjusted post test means of functional training and weight training groups; functional training and combined training groups; functional training and control groups; weight training and control groups; combined training and control groups on strength. Moreover, the study result showed that there is no significant difference between weight training and combined training groups on strength.

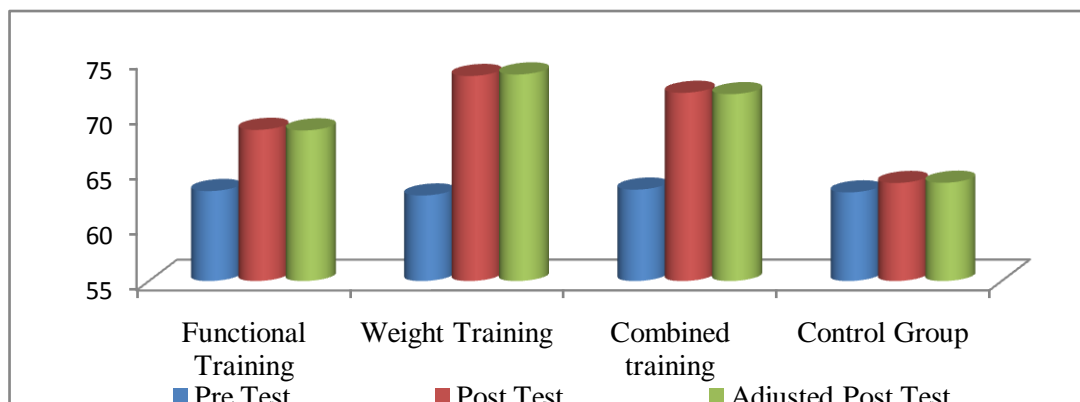


Figure – 1

Mean Scores Of Pre, Post Test And Adjusted Post Test Of Functional Training, Weight Training, Combined Functional And Weight Training And Control Groups On Strength

DISCUSSION ON FINDINGS

Scholtes and others (2012) stated that the effectiveness of functional progressive resistance exercise increased significantly on muscle strength of training group compared to the control group. Shaikh and Mondal (2012) study result showed that the effects of functional training on strength of college male students significantly increased strength. Roh and Lee (2012) study exposed that the effects of a home-based exercise program on functional fitness in elderly women lower extremity muscle strengths significantly increased. The above mention studies are supporting my result of study and the investigator found that all the three experimental groups significantly improved the strength comparing to the control group due to the twelve weeks of experimental treatment.

REFERENCES

1. Comana, F., 2004. Function training for sports. Human Kinetics, Champaign IL, pp: 22.
2. Roh H.L., Lee D.H., (2012). Effects of a home-based exercise program on functional fitness and total cholesterol in elderly women. *Journal of Physical Therapy Science*. 24 (5) 449-453.
3. Scholtes V.A., Becher J.G., Janssen-Potten Y.J., Dekkers H., Smallenbroek L., Dallmeijer A.J., (2012). Effectiveness of functional progressive resistance exercise training on walking ability in children with cerebral palsy. *Res Dev Disabil*. 33(1):181-8.
4. Shaikh A., Mondal S., (2012). Effects of functional training on physical fitness components on college male students. *Journal of Humanities and Social Science*. 1, (2), PP 01-05.
5. Sullivan, Susan B., (2007). *Physical Therapy 5th Edition*. Glossary: F.A. Davis Company. p. 335.



“BRAIN BOOSTING YOGA FOR COGNITIVE HEALTH AND HAPPINESS – AN OVERVIEW”

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ABSTRACT

In this present world scenario, parents and teachers can do wonders if there is any simple yet powerful remedy to help their children convert their step-back stories to stunning success stories during their school days. This paper attempts to shed light on the concept: “Creating a happy life with a healthy brain” among children through brain work-outs. Brain gym exercises - movement based learning, facilitates the overall development of the children and it also aids in attention, motivation and academic success. It stimulates the blood flow to the brain and helps the children to concentrate deeply for a longer period of time. Incorporating the brain gym activities in children’s daily life, would enable them to cope up with stress, anxiety, frustration, fear and failure, and leads to a successful scholar life. Engaging the brain while learning a new concept effectively is a challenging task unless and until it becomes a task of one’s own interest. Along with the mental-wellbeing, brain boosting exercises would improvise the fine/gross motor coordination, walking pattern etc. Many parents and teachers believe that they can optimize the learning experiences of the children either by providing them hands on experience or by providing drilling practice. In contrast, in this paper, 5 Brain Boosting Yoga are explained intensely with its impact on the learning and behavioral outcomes supported with research-based evidences.

KEYWORDS: Brain Gym, Brain-Workout, Attention, Learning And Behavioral Concerns.

INTRODUCTION

The human brain is one of the most amazing thing we could ever imagine as the world's greatest innovations what we witness have had its birth because of the miraculous feature of the brain. Brain has the capacity to receive, retain and restore the memories. Everybody has thinking skills but not everyone uses them effectively as we have not understood the power of brain completely. Providing the brain with complex activities combining the physical senses: vision, smell, touch, taste and hearing would enrich the thinking ability of the human beings. In this paper, we will be exploring the scientific reason behind the importance of brain exercises. As the physical exercises enable us to keep our body fit and healthy, cognitive exercises would strengthen the thinking skills. 5 Brain boosting yoga: super brain yoga or Thoppukaranam, Lazy 8, Double doodle, brain – food and music, hand clapping.

Factors affecting the intellect and brain power

- Chronic sleep worsens the memory power and cognitive abilities.
- Prolonged stress affects the brain functioning.
- Dehydration destroys the brain- brain of 80% of water, therefore even a moderate loss of 2% of fluid (about 2%) reduces concentration and memory.
- Lack of physical and mental exercises – insufficient blood supply to the brain.
- Abundance of sugar in the diet destroys the neural connections.

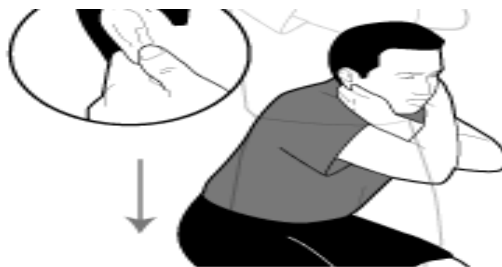
Benefits of Brain Boosting Yoga

Brain workouts act as a training provided to build the cognitive ability. We need to invest our time to take care of our minds as how we do for our physique in this stressful world to lead a peaceful and healthy life. Brain needs to be given variety of complex mental activities to keep it strong and healthy.important

Following are the imperative reasons to train the brain regularly

Improved level of positivity, increased focus and attention, enhanced memory skills, superior level of perceptual motor ability, stress free life, academic success, enhanced creativity, enriched decision-making skills, productivity and the list goes endless.

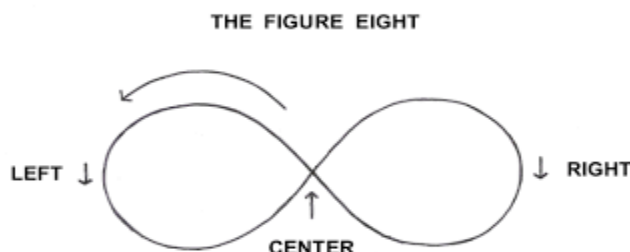
1. Super brain yoga/ Power yoga/ Thoppukaranam



All of us are aware that yoga and meditation improve blood circulation to the brain; it's a means to increase the brain power. It helps us to sharpen our focus, attention, improve our memory and concentration and thereby aids in multi-tasking. A research study conducted by Harvard University (2011) claims that it enhances decision making skills and learning skills as well. "Super brain yoga is a simple and effective technique to energize and recharge the brain. It is based on the principles of subtle energy and accupressure" – Master Chao Kok Su.

Super brain yoga is a scientifically proven method which was administered during ancient days to increase the intellectual capacity and creativity. This needs to be practiced for atleast 3 minutes a day to feel the positive effect. It reduces stress and promotes proper functioning of the brain of the children aiding in academic success.

2. Lazy8



Tracing the lazy 8 is one of the most important activities which attempt to integrate the functions of eyes, hands and hemispheres of the brain. When a child is provided with a continuous intervention using lazy 8, visual perceptual skills would get enhanced and the severe academic related concerns like reversals and transpositions will get lessen. Also, as the lazy 8 can be performed in the air, it can relax the body muscles and improvise the motor coordination of the children to a greater extent. Children with learning difficulties often struggle to cope with the learning tasks but lazy 8 can have appositive impact on the learning process as it stimulates the symbol recognition for the decoding of written language, reading comprehension, tactile sense etc. children tend to increase the ability to concentrate on a particular as a result of continuous practice of Lazy 8. A Research was conducted on Lazy 8 by Mark Pankau (2006). In this study 100% of the trials (all students, all classes) showed an increase in Words per Minute (WPM) after doing the Lazy 8 exercise.

3. Double Doodle



Double Doodle is one of the Brain gym exercises created by drawing a symmetrical design, with both the hands mirroring each other side by side. Dr. Paul Dennison began using bilateral drawing with the student and identified that the activity helped the students enhance their learning skills like eye-hand coordination, spatial awareness, memory, attention span, decoding and encoding of written symbols, writing skills, spelling and Math effectively. It strengthens the visual tracking skills and thereby improves the academic performance of the children largely. When the children are motivated to practice Double Doodle on regular basis they can easily

overcome the directionality and laterality difficulties. It will also enhance the movement and thinking skills.

Brain Food & Music

A research conducted in Stand ford university has proved the positive effect of listening to music and learning to play a musical instrument. Listening to music will increase the attention span and enable us to follow the rhythmic pattern increasing the memory power as well. Music has the power to activate the areas of the brain responsible for perceiving and analyzing the sounds, emotional stability, decision making skills and organization skills.

The human brain weights about 1.3 – 1.4 kg and it uses about 20 % of the daily calorie intake. So, it is imperative to focus on healthy brain boosting diet. By including the below mentioned food items in our daily diet can ensure that the brain is getting the best fuel to keep it recharged: whole grains(steadily release glucose into our body and helps us stay alert and active throughout the day), green leafy vegetables, beetroot(there are natural nitrates in beets that can increase blood flow to the brain, thereby improving mental performance), blue berries(they have antioxidant properties as well cancer, cardiovascular disease and Alzheimer's), nuts(nuts are a great source of Vitamin E which helps to prevent cognitive decline) and food items containing omega-3 fatty acid(for healthy brain functioning).

Brain Yoga: Pranayama



The word Yoga is derived from a Sanskrit word 'Yuj'. Yoga is not just about doing asanas for our health. It has more meaning to it as it elevates your emotions with a touch of spirituality, therefore giving us the ability to overcome a lot of problems in your life.

Many studies have reported positive results of improvement in academics and behavior among ADHD students after incorporating yoga and meditation as an intervention technique (Jensen & Kenny, 2004, Harrison et al. 2005, Peck et al. 2005, Powell et al. 2008).A study conducted by Abha Gupta 2014, strongly suggests that pranayama practice is a promising alternative to other literacy interventions.Pranayama helps to release stress and relax the brain waves - resulting in improved memory and increased confidence. It also improves the grasping and intelligence power when practiced on a regular basis.

CONCLUSION

Thus, we have explored the ways of "*Creating a happy life with a healthy brain*" in this paper. The "use it or lose it" phrase emphasizes the need to activate and stimulate the neural pathways and connections to enrich the productivity and efficiency of the human beings. Along with mental stimulation, one needs to consume nutritious food, do physical exercise, stay connected with positive and energetic people to maximize the result. When we undergo brain-workouts, we will feel sharper, quicker and more able to notice the important details of everyday life aiding in leading a healthy, happy and fulfilled life.

REFERENCES:

4. John Medina, (2014). Brain Rules. U.S.A; Pear Press
 5. <https://www.sciencedaily.com/releases/2010/04/100428090954.htm>
 6. <http://heartsatplay.com/a-soothing-double-doodle-heart-for-kids-of-all-ages/>
 7. <https://qahs.eq.edu.au/superbrain-yoga-a-simple-exercise-to-maximize-brain-power/>
 8. <http://www.lightstreams.com.au/downloads/sby-a-research-study.pdf>
 9. <https://www.artofliving.org/in-en/health-and-wellness/super-brain-yoga>
- <http://www.indiaeducation.net/students-corner/6-yoga-practises-score-high-in-your-board-exams-with-these.html>



“AN ANALYSIS OF EXERCISE THERAPY FOR PEOPLE WITH SCHIZOPHRENIA”

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ABSTRACT

Schizophrenia is a mental disorder, which is characterised by abnormal social behaviour, delusions, cognitive challenges and hallucinations. Schizophrenia affects 2–4% of the population and is one of the world's leading causes of disability. In India, where about 1.1 billion people reside, the prevalence of schizophrenia is about 3/1000 individuals. An essential component of lifestyle modification is exercise. The importance of exercise is not adequately understood or appreciated by patients and mental health professionals alike. The objectives of these studies are to analyse the barriers to engage the people with schizophrenia and what are all the exercise interventions for them. Normative survey method was used to collect data from various sources regarding the exercise therapy for the people with schizophrenia. The study indicates exercise should be used as an adjunct to other interventions such as antipsychotic medication and psychological therapies. thus provide effective, evidence-based physical activity interventions for individuals suffering from serious mental illness like schizophrenia. Acute and chronic beneficial effects of exercises were reported with regard to several cognitive, behavioral, and socio-emotional functions. Further studies should be done to understand the impact of combining such interventions with traditional mental health treatment.

KEYWORDS: *Mental Health, Schizophrenia, Exercise*

INTRODUCTION

World health organization (WHO) has estimated that by 2020, mental depression will be the largest cause of disability worldwide. By 2025, mental illness will catch up with heart disease or may even overtake it as the biggest global health concern. In 2014, concerned over the growing problem of mental health in India, the Union Ministry of Health and Family Welfare had appointed NIMHANS to study mental health status in the country. These are some of the findings of a National Mental Health Survey held recently and conducted by the National Institute of Mental Health and Neurosciences (NIMHANS). In October 2016, the NIMHANS in Bengaluru released a mental health survey that said that the incidence of depression is roughly one in every 20 Indians or 5% of the population.

Schizophrenia

Schizophrenia is a mental disorder, which is characterised by abnormal social behaviour, delusions, cognitive challenges and hallucinations. A person affected by Schizophrenia also suffers from paranoia, nervousness and may hear voices that are actually not there. People suffering from Schizophrenia often have additional mental disorders like depression, anxiety disorders and substance use disorders. The factors that are responsible for this mental illness are environmental and genetic factors. Some environmental factors may include certain infections and lack of nutrition during pregnancy. Genetic factors include a variety of rare and some common genetic variants. Experts also say that Schizophrenia is also a result of chemical imbalances in the brain. Dopamine, a neurotransmitter is involved in the onset of Schizophrenia. Imbalance of some other neurotransmitters such as serotonin can also lead to Schizophrenia.

Schizophrenia affects 2–4% of the population and is one of the world's leading causes of disability. In India, where about 1.1 billion people reside, the prevalence of schizophrenia is about 3/1000 individuals (Gururaj, Girish, & Isaac, 2005). For successfully treat men and women who suffer from schizophrenia and associated stigma, it is also important to look at how their cultures may influence stigma. Thara and Joseph (1995) found men to be disabled in occupational functioning and women in marital functioning (Shankar, Kamath, & Joseph, 1995; Thara & Srinivasan, 1997).

EXERCISE AND MENTAL HEALTH

An essential component of lifestyle modification is exercise. The importance of exercise is not adequately understood or appreciated by patients and mental health professionals alike. Evidence has suggested that exercise may be an often-neglected intervention in mental health care.

- Aerobic exercises, including jogging, swimming, cycling, walking, gardening, and dancing, have been proved to reduce anxiety and depression. These improvements in mood are proposed to be caused by exercise-induced increase in blood circulation to the brain and by an influence on the hypothalamic-pituitary-adrenal (HPA) axis and, thus, on the physiologic reactivity to stress. (Sharma A, 2006)
- This physiologic influence is probably mediated by the communication of the HPA axis with several regions of the brain, including the limbic system, which controls motivation and mood; the amygdala, which generates fear in response to stress; and the hippocampus, which plays an important part in memory formation as well as in mood and motivation (Sharma A, 2006).

Research Questions?

1. What are all the barriers to engage the people with schizophrenia to exercise?
2. What are the exercise interventions for schizophrenia?

METHODOLOGY

Normative survey method was used to collect data from various sources regarding the exercise therapy for the people with schizophrenia.

DISCUSSION

Research Question No.1

1. Evidence suggests that barriers to engaging with exercise include the following:

- Poor motivation, partly due to the negative symptoms of illness and depression, Anxiety and stress' about exercising in public, including social anxiety, Tiredness, linked to sedative effects of antipsychotic medication, Lack of support from others to exercise (Firth J, 2016), Comorbid physical health issues such as obesity which impact upon mobility (Vancampfort, 2011).
- Taking the barriers and facilitating factors into account, exercise training programs for people with psychotic illnesses should be designed to improve exercise capacities and cardio respiratory fitness, while also providing the necessary levels of supervision or assistance for each patient to overcome psychological barriers and achieve their goals. Such interventions would be motivating and rewarding for patients, resulting in higher levels of exercise engagement (Yung,2017).
- Exercise should be used as an adjunct to other interventions such as antipsychotic medication and psychological therapies. It needs to be seen as integral to treatment. Merely providing advice to exercise is not enough. Adequate resources are needed to ensure that patients receive supervision and ongoing support in order to achieve an adequate 'dose' of exercise. Reforms are currently occurring in England, where it is now mandated that early psychosis patients have access to cognitive therapy and vocational support. While this should be applauded, further support to promote exercise as treatment is also needed. This should include ensuring that a physical therapist is as part of the clinical team (Yung,2017).

Research Question No.2

Exercise Interventions

- *Duraishwamy et al (2007)* analysed the effects of yoga therapy in people with schizophrenia. They reported that patients had significantly greater social and occupational functioning and quality of life due to yoga training.
- *Pearsall et al (2014)* conducted a systematic review and meta-analysis of randomised controlled trials comparing the effect of exercise interventions on individuals with serious mental illness. Searches were made in Ovid MEDLINE, Embase, CINAHL, PsycINFO, Biological Abstracts on Ovid, and The CochraneLibrary (January 2009, repeated January 2013) through to February 2013. This systematic review showed that exercise therapies can lead to a modest increase in levels of exercise Activity.

- People with schizophrenia and physiotherapists can choose either yoga or aerobic exercise in reducing acute stress and anxiety taking into account the personal preference of each individual (Vancampfort, 2011).
- A 12-week community-based AT and RT program results in significant improvements in overall mental health, muscular strength and a trend for improvement in functional exercise capacity. Among all participants, improvement in functional exercise capacity was associated with improvement in overall mental health as well as a reduction in depressive symptoms. Reduction in depressive symptoms was associated with greater adherence to exercise. A group exercise program for individuals with schizophrenia/schizoaffective disorder is feasible when implemented by a multidisciplinary team (Marzolini,2009).
- Firth *et al* indicates that exercise improves cognitive functioning in people with schizophrenia, particularly within domains of social cognition, working memory, and attention, all of which are predictive of socio-occupational outcomes. Our data suggest that supervision from physical activity professionals and higher levels of weekly exercise are important for promoting the cognitive benefits of exercise (Firth, 2016).
- An exploratory study was conducted with six patients diagnosed with schizophrenia who participated in a 3-month physical conditioning program. The findings suggest that most participants increased their physical strength and endurance and exhibited improvements in weight control and flexibility. The majority of patients reported increased fitness levels, exercise tolerance, reduced blood pressure levels, perceived energy levels and upper body and hand grip strength levels (Fogarty,2004).
- Individuals with schizophrenia spectrum disorders (SSDs) are more likely to lead sedentary lives, exercise less than the general population, and die prematurely from preventable causes. Previous research examining the effects of exercise on individuals with SSDs has been encouraging yet limited in creating accessible and sustainable interventions. The current pilot study developed and evaluated the impact of Work out by Walking (WOW), a multicomponent group walking intervention on the health of 16 individuals with SSDs. Results indicated improvements in indicators of physical health, activity level, social support, and mental health and a high level of program satisfaction.(Browne, 2016)
- Sandroff (2015) compared the acute effects of moderate-intensity treadmill walking, moderate-intensity cycle ergometry, and guided yoga with those of quiet rest on executive control in 24 persons with relapsing-remitting multiple sclerosis without impaired cognitive processing speed using a within-subjects. This results support treadmill walking as the modality of exercise that might exert the largest beneficial effects on executive control in persons with relapsing-remitting MS without impaired cognitive processing speed.

CONCLUSION

Drop out from exercise has been identified as a major health issue in healthy individuals and same is the case with clinical population. So it is important that exercise therapy should be offered to appropriate patient by psychologist in the first incidence and thereafter co-ordinate by accredited health professionals who have the experience and expertise to deliver and prescribe exercise in appropriate way. Exercises should be included with medications that can thus provide effective, evidence-based physical activity interventions for individuals suffering from serious mental illness like schizophrenia. Acute and chronic beneficial effects of exercises were reported with regard to several cognitive, behavioral, and socio-emotional functions. Further studies

should be done to understand the impact of combining such interventions with traditional mental health treatment.

REFERENCES

1. Browne, J., Penn, D. L., Battaglini, C. L., & Ludwig, K. (2016). Work out by walking: A pilot exercise program for individuals with schizophrenia spectrum disorders. *The Journal of nervous and mental disease*, 204(9), 651-657.
2. Duraiswamy, G., Thirthalli, J., Nagendra, H. R., & Gangadhar, B. N. (2007). Yoga therapy as an add-on treatment in the management of patients with schizophrenia—a randomized controlled trial. *Acta Psychiatrica Scandinavica*, 116(3), 226-232.
3. Firth J, Carney R, Jerome L, et al. The effects and determinants of exercise participation in first-episode psychosis: a qualitative study. *BMC Psychiatry*. 2016;16:36.
4. Firth J, Rosenbaum S, Stubbs B, et al. Motivating factors and barriers towards exercise in severe mental illness: a systematic review and meta-analysis. *Psychol Med*. 2016;46 (14):2869–2881.
5. Firth J, Carney R, French P, et al. Long-term maintenance and effects of exercise in early psychosis. *Early Interv Psychiatry*. 2016. DOI:10.1111/eip.12365.
6. Fogarty, M., Happell, B., & Pinikahana, J. (2004). The benefits of an exercise program for people with schizophrenia: a pilot study. *Psychiatric Rehabilitation Journal*, 28(2), 173.
7. Global Burden of Disease Study C. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2015; 386(9995):743–800.
8. Gururaj, G.; Girish, N.; Isaac, MK. NCMH Background papers- Burden of disease in India. New Delhi: Ministry of Health & Family Welfare; 2005. Mental, neurological and substance abuse disorders: Strategies towards a systems approach.
9. Marzolini, S., Jensen, B., & Melville, P. (2009). Feasibility and effects of a group-based resistance and aerobic exercise program for individuals with severe schizophrenia: a multidisciplinary approach. *Mental Health and Physical Activity*, 2(1), 29-36.
10. Pearsall, R., Smith, D. J., Pelosi, A., & Geddes, J. (2014). Exercise therapy in adults with serious mental illness: a systematic review and meta-analysis. *BMC psychiatry*, 14(1), 117.
11. Sand roff, B. M., Hillman, C. H., Benedict, R. H., & Motl, R. W. (2015). Acute effects of walking, cycling, and yoga exercise on cognition in persons with relapsing-remitting multiple sclerosis without impaired cognitive processing speed. *Journal of clinical and experimental neuropsychology*, 37(2), 209-219.
12. Shankar R, Kamath S, Joseph AA. Gender differences in disability: a comparison of married patients with schizophrenia. *Schizophrenia Research*. 1995; 16:17–23
13. Sharma A, Vishal Madaan, Frederick D. Pett Exercise for Mental Health, Prim Care Companion J Clin Psychiatry. 2006; 8(2): 106.
14. Thara R, Joseph AA. Gender differences in symptoms and course of schizophrenia. *Indian Journal of Psychiatry*. 1995; 37(3):124–128.

15. Vancampfort D, Probst M, Sweers K, et al. Relationships between obesity, functional exercise capacity, physical activity participation and physical self-perception in people with schizophrenia. *Acta Psychiatr Scand.* 2011;123(6):423–430.
16. Yung, Alison R., and Joseph Firth. "How should physical exercise be used in schizophrenia treatment." (2017): 213-214.



EFFECT OF VARIED COMBINATION OF BRISK WALKING OWN BODY RESISTANCE TRAINING AND YOGIC PRACTICES ON SELECTED ANTHROPOMETRIC VARIABLE OF TYPE-II DIABETES MELLITUS MEN

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ABSTRACT

Yogic practices are an Indian methods of exercise which focuses on Physical and Mental Health of human being. The purpose of the study is to find out the effect of varied combination of Brisk walking, own body resistance training and Yogic practices on selected anthropometric variable of type – II diabetes mellitus men. To achieve the purpose of the study, forty five (45) diabetes type II mellitus men in Tamil Nadu are selected randomly. Their age group are ranged from 45 – 50 years. The subjects will be randomly selected and formed as two experimental groups and one control group each group with 15 subjects ($n = 15$). Group I will undergo brisk walking with own body resistance training, group II will undergo brisk walking, own body resistance training and yogic practices and group III control group. The experimental groups will undergo the specific training program for period of 12 weeks in total. The data will be collected before and immediately after the completion of 12 weeks training. The variables selected for the study are Arm girth, Fore arm girth, Calf girth, To find out the impact of the training program, the dependent 't' test and ANCOVA statistical technique will be used to interpret the results.

KEYWORDS: Kabaddi & Athletics

INTRODUCTION

Walking is widely recommended for its health benefits. According to a recent U.S. Surgeon General report on physical activity and health in America, more than half of the U.S. population does not participate regularly in any type of exercise. That physical inactivity can lead to poor health.

The Surgeon General urged Americans to "get in shape," encouraging everyone to get at least one-half hour of moderately vigorous activity (such as brisk walking) each day. The latest recommendations suggest that you should try to walk two miles at a brisk pace of three to four miles per hour nearly every day.

It is increasingly obvious that one of the best ways to maintain good health is through physical activity. Regular participation in exercise has been shown to be helpful in the prevention of such killers as heart disease, cancer, and diabetes. Exercise also helps to control weight. (According to the latest research, one out of three Americans is obese.)

And because exercise helps to strengthen muscles and bones, it can even decrease your risk of developing diseases such as osteoporosis and arthritis.

Some of the most interesting and overwhelming evidence supporting the need to be physically active is from the research being conducted at the Cooper Institute for Aerobics Research in Dallas, Texas. Dr. Kenneth Cooper, known as the "father of aerobics," founded the Cooper Clinic in the early 1970s to investigate the effects of physical activity and fitness on health and longevity and to help people develop healthy lifestyles.

METHODOLOGY

The purpose of the study was to investigate the impact of yogic practices on selected anthropometric variable among male type-2 diabetes mellitus patients. To achieve the purpose of the study forty five male type-2 diabetes patients (Higher level) have been randomly selected from, Anthiyur Malar clinic center Anthiyur Erode district, Tamilnadu State, India. For this study, patients of nephropathy, retinopathy (proliferative) and coronary artery disease or any other complications of diabetes were excluded. Arm girth, forearm girth calf grit selected subjects ranged from Age 45 to 50 years.

Experimental Design

This study was conducted to determine possible cause and effect relationship of 12 weeks yogic practices on diabetic patients. This study consisted of experimental and control groups, Group-I (n=15) Brisk Walking with own body Resistance) underwent Yogic practices and Group-II (n=15) Combination of brisk walking, own body Resistance Training and yogic practices group III (n =15) Control group was not involved in any specific training. All the participants were tested prior to and after the experimentation on anthropometric variables such as arm girth, forearm girth, calf girth

Result of the Test

The primary objective of the paired 't' ratio was to describe the difference between the pre-test and post-test means of diabetic patients. Thus, the obtained results were interpreted with the earlier studies and are presented in this chapter using graphical presentation. The significance of

mean gains/losses between pre test and post test on the selected variables of the traditional training group, are presented in table.

RESULT AND DISCUSSION

Brisk Walking With Own Body Resistance Training

Variables	Test	Mean	Standard Deviation	σ DM	DM	t
Arm girth	Pre	31.09	1.74	0.52	3.69	7.07*
	post	27.40	2.52			
Forearm girth	Pre	26.48	1.94	0.29	1.50	5.01*
	post	24.98	2.04			
Calf girth	Pre	37.40	2.58	0.35	2.49	6.95*
	post	34.91	2.30			

*significant Level of significant 0.05 with df 14

CONTROL GROUP

Variables	Test	Mean	Standard Deviation	σ DM	DM	t
Arm girth	Pre	31.08	2.48	0.52	1.08	2.06
	post	30.00	2.89			
Forearm girth	Pre	26.41	2.06	0.71	1.25	1.76
	post	27.66	2.16			
Calf girth	Pre	37.34	2.25	0.62	0.27	0.43
	post	37.61	3.09			

The above table documents the pre and post tests means and standard deviations values of brisk walking own body resistance groups (BWOPR) on the selected variables. The obtained 't' ratios were 7.07, 5.01 and 6.95 for arm girth, forearm girth, calf girth and training ability respectively the obtained 't' ratios on the selected variables were found to be greater than required table value of 0.05 level of significance.

The above the table documents the pre and post test means and standard deviations values of control group (CG) on the selected variables. The obtained 't' ratios were 2.06, 1.76 and 0.43 for arm girth, forearm girth, calf girth and training ability respectively the obtained 't' ratios on the selected variables were found to be greater than required table value of 0.05 level of significance.

The statistical analysis, the findings, discussion on results and hypotheses are presented in this chapter. Impact of two different packages of yogic Practices on Quality of life among Diabetic patients. To achieve this purpose, Forty five subjects were selected as subjects and by using the random procedure on the basis of their initial test, the subjects were divided into three equal groups of Fifteen each. Experimental group 'A' Brisk waking with own body resistance training

gruo -1 programme and Experimental group 'B' combination of Brisk waking with own body resistance training and yogic practices group -2, and group 'C' called as control group. twelve weeks. The control group was not exposed to any specific training apart from their regular routine. All the subjects were tested on the selected variables, before and after the treatment period. In the present study, the data were analysed in two parts.

CONCLUSIONS

Based on the results of the study, the following conclusions were drawn:

It was concluded that effect of varied combination of brisk walking with own body resistance training and yogi practices on selected anthropometric variables arm girth, forearm girth, calf girth, than the control group.

It was concluded that brisk walking with own body resistance training group A (package no.1) were slightly effective than the combination of brisk walking with own body resistance and yogic practices group B (package no.2 arm girth, forearm girth, calf girth,. It was concluded that the yogic practices group A (package no.1) was significant differences in quality of life due to reduce, recovery and improve from result, brisk walking with own body resistance training and yogic practices on selected anthropometric variable. So, The result of the study indicates diabetes patients slightly recovery from disorder that there was a significant improvement of quality of life

REFERENCES

Mengistie alemayehu belay and reddy r.c and syam babu (2013) the effects of combined aerobic and resistance exercise training on obese adults. north west ethopia, research journal of recent sciences volume 2(1), pp 59-66.

Indranil manna Gulshan Lal Khanna, Prakash – Chandra Dhara 2012 Effect of training on anthropometric Physiological and biochemical variables of vol-19 volleyball Players. Journal of human sports and exercise Vol : 7/ issue 1/ pp 263- 274

Sijie Tan ¹ Weili ² and jianxiong wang ^{3*} 2012 effect of six months of combined aerobic and resistance training for elderly patients with a long history of type 2 diabetes. Journal of sports science & science 11(3) pp 495-501.

Bello A1¹, owusu –boakye. e-adeboke bo, adjei dn 2011 effects of aerobic exercise on selected physiological parameters and quality of life in patients with type 2 diabetes mellitus. International journal of jeneral medicine. volume -4 pp 723-727.

Sigal timothy S. Church. steven N.blair.2007 effects of aerobic and resistance training on haemoglobin A/C levels in patients with type 2 diabetes. journal of American medical association. volume – 304-(20) pp 2253 – 2262.

Youngwanichsetha, S., Phumdoung, S., & Ingkathawornwong, T. (2014). The effects of mindfulness eating and yoga exercise on blood sugar levels of pregnant women with gestational diabetes mellitus. Applied Nursing Research.

Maninder, B., Seema, D., Shema, N., (2013) Influence of pranayamas and yoga-asanas on blood glucose, lipid profile and hba1c in type 2 diabetes, International Journal of Pharma and Bio Sciences, V- 4, Issue 1, , PP B169-B172.



ROLES AND RESPONSIBILITIES OF 'SPORT NUTRITIONISTS & EDUCATORS' IN EMPOWERING YOUNG TALENTS IN INDIA- AN OVERVIEW

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ABSTRACT

The role and responsibilities of a Sport Nutritionist extends to a level that this personality transforms into a mentor to the athletes, as they possess the efficacy to counsel and guide the youngsters on 'what they eat to what they think.' Besides, special cases like food allergies, injuries etc. have to be addressed through their nutritional plans, so as to help them recover at the earliest. India is prosperous with young and vibrant human resource. Channelizing the rich human resources into Sports personalities and molding them as Sport Stars at the International level, lies in the efforts of the key performers mentioned in this article. This can be accomplished by the facilitator named "Sport Nutritionist". Most of the western countries ensure that every educational institution. In case of an established team, the Sport Nutritionist should ensure that wherever the team travels, it gets the required nutrition and fitness menu. For this the Sport Nutritionist will maintain good contact with various catering professional, hotels etc. in order to keep helping the achievement of goals. Further they are required to manage proper budget for the procurement and distribution of the nutritional supplements and ensures that do not fall short off. Especially of the energy fluids and other snacks required during team practice or tournaments.

KEYWORDS: "Sport Nutritionist", Nutritionist, Channelizing, Tournaments

INTRODUCTION

India is a country which is very rich in its human inhabitants. It has made remarkable contributions to the International Sports since 1950s. To name a few:

1952- *Wrestler Khashaba Jadhav*, the first Indian to win an individual Olympic medal for India

1958- *Mihir Sen* crossed the English Channel and became the first Indian to do so

1975 – India won World Cup Hockey, Malaysia

1982 – India's Golf stars won Gold at the Asian Games

1983 – Cricket World Cup Victory. Repeated in 2011.

1986 – *P. T. Usha*'s victory at Asian Games

1999 – The amazing duo of *Leander Paes* and *Mahesh Bhupathi* won the French Open Wimbledon and also reached finals in all four grand slams.

2000 – *Viswanathan Anand* won the World Chess Championship

2012- *Saina Nehwal* won Bronze for Badminton in Summer Olympics

2016- *P V Sindhu* won Silver for Badminton in Rio Olympics

2016- *Mariyappan Thangavelu* won the Gold in Paralympics.

The above statistics gives a glimpse of how India was filled with laurels from all over the world in various sports. Unfortunately, the current scenario of Indian Sports is mostly centered around Cricket, as the staple sport of Indians followed by football, while, the National game of Hockey and other games have lost their importance and have been pushed to the *last rows*. This can be explained in the following statistics:

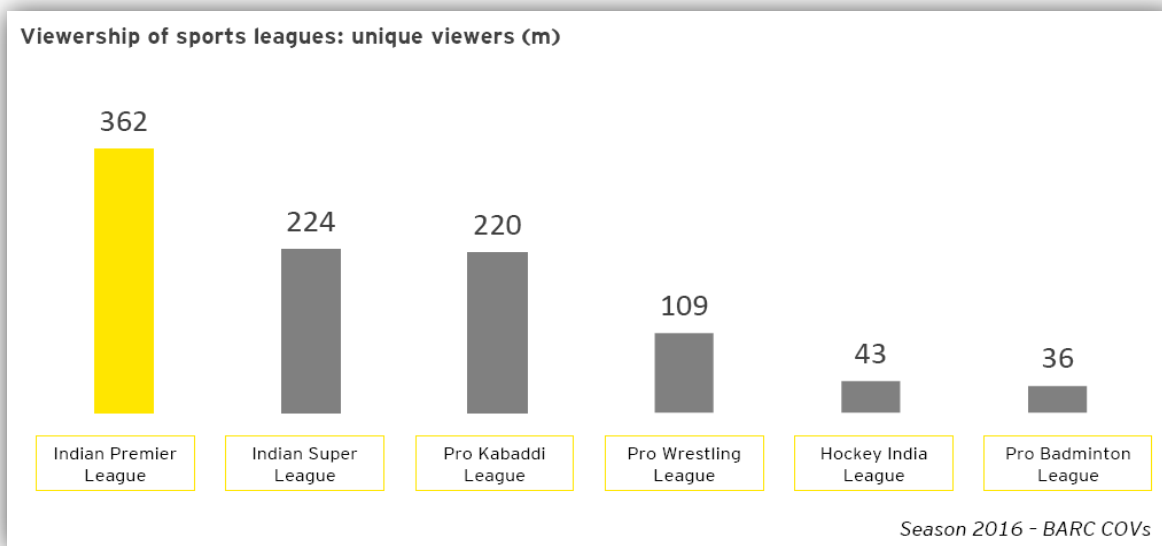


Fig 1: Scenario of Sports viewers in India

For this scenario to change, it is essential to educate the young talents that Cricket is not the only game of attraction, and motivate them to get physically and mentally prepared to participate in various sports of India and keep up to the International levels in representing them. This paper discusses on how Educators and Sport Nutritionists can make justice to their role as far as the above concept is concerned.

What Sport Nutritionists can do?

India has the maximum of underweight population in the world, besides, ranking one among the top 5 with population that is obese. With such an imbalance in physical fitness, promoting and heading towards making Sports as a one of the key strengths of the nation remains a big challenge. This has to be bridged by concentrating on the nutrition intake of the young potential in India, which will ensure a better identification of physically fit sport performers. This can be accomplished by the facilitator named "Sport Nutritionist". Most of the western countries ensure that every educational institution

A Sport Nutritionist is an expert in the field of Sports, who renders professional nutrition counseling service to the sportsperson, especially athletes, when compared to a general Nutritionist. The role and responsibilities of a Sport Nutritionist extends to a level that this personality transforms into a mentor to the athletes, as they possess the efficacy to counsel and guide the youngsters on 'what they eat to what they think.'

- 1. Nutrition Counseling:** The primary duty of the Sport Nutritionist is to provide counseling that includes nutrition for: exercise training, eating disorders, obesity or underweight, hydration, competition, increasing stamina, enhancing immunity etc.
- 2. Fitness Testing:** As the primary role of a Sport Nutritionist is to counsel the athletes with an optimal nutrition goal, they have to at the first step; conduct a fitness testing to the entire team they are working with. This testing will help them to serve the team in an individual and personalized way. By conducting various tests, like the body composition test, metabolic test etc, and the information can be gathered and could be used as yardstick to design a plan for each individual.
- 3. Tailor-Made Nutrition Plans:** A Sport Nutritionist has to be well versed in creating special- individual nutrition and snacks plans for the athletes they work with, which suits for various circumstances, and also design it in such a way that facilitates the sports persons to achieve their dietary and professional goals. Besides, special cases like food allergies, injuries etc. have to be addressed through their nutritional plans, so as to help them recover at the earliest.
- 4. Ensuring Proper Food Service And Menu:** It is again the role of the Sport Nutritionist to ensure that the team is being provided with the right menu as administered and it's being served in the right quantity as mentioned. This will help the sportspersons to achieve their goals easily and it also prevents the lack of nutrition or dietary malfunctioning. In case of an established team, the Sport Nutritionist should ensure that wherever the team travels, it gets the required nutrition and fitness menu. For this the Sport Nutritionist will maintain good contact with various catering professional, hotels etc. in order to keep helping the achievement of goals.

5. Nutrition Education & Budget Management: Transferring the knowledge on importance of the nutritional goals and its impact on physical fitness and sports performances, through various demonstrations and presentations, is yet another important role of the Sport Nutritionist.

Further they are required to manage proper budget for the procurement and distribution of the nutritional supplements and ensures that do not fall short off. Especially of the energy fluids and other snacks required during team practice or tournaments.

What Educators can do?

The role Educators is of vital importance in empowering young talents of not only India, but any country for that matter. As the Sport Nutritionists take the role of ensuring physical fitness, Educators (more prominently Physical Educators) take the role of inculcating in the young minds all the other skills that are required for a well-groomed Sports personality. Now, how do they do it?

1. Strengthen The Curricula

It is high time that India gives more weight age to the subject of Physical Education in the curriculum of schools. Any kid in the school will definitely say, “PT is my favorite hour” and unfortunately in most of the schools it comes just once or twice in a week. The physical training and Physical Education should not be taught as an hour to relax and enjoy, away from the academics. But it has to be insisted as a subject for lifetime as it is the only training the focuses on Physical health and development. It is the role of educators to voice out for strengthening the curricula.

2. Improve The Quality& Quantity of Equipments & Coaches

The lack of adequate sports equipments for the schools and the poor quality of the available equipments, poses a big hindrance to the students to self motivate their interest towards physical education studies.

Also, the inadequacy of coaches/skilled coaches who are well trained and well aware about the scenario and who can motivate students to come out with their interest to chose Sports as their career, makes the scene all the more complicated. Educators should seek measures to overcome this.

Other Important Roles/Responsibilities

- Ensure that the School Wellness Programs are active and they ultimately serve the students with the projected benefits.
- Seek for opportunities to promote physical activities in the community.
- Educating classroom teachers about the need for emphasized physical education and physical activity practices.
- Motivating more of physical training as competitions for various days of National importance like “Children’s day, Republic day, Independence Day” etc. Frequency of physical activity would arouse the interest of the students.
- Ensuring availability of the required resources for students to participate conveniently in physical activity programs
- Educate students to become Leaders in adopting Sports as their career and to set role models for their juniors.

- Planning for fund-raising programs that encourage physical activity like marathon, walkathon etc.

Scenario Abroad

In most countries of the world, the way Education and physical activity is being dealt with is using the following techniques:

1. **Coordinated School Health Program:** encompasses Health education, Physical education, Health services, Nutrition services, Counseling, Health promotion for staff, family & Community involvement
2. **Laws enacted for banning junk foods in Schools:** as a measure to check obesity in children.
3. **Laws enacted for making Physical activity compulsory each day:** as a measure to promote more physical activity in children for good physical development.

CONCLUSION

India is prosperous with young and vibrant human resource. Channelizing the rich human resources into Sports personalities and molding them as Sport Stars at the International level, lies in the efforts of the key performers mentioned in this article. When the roles & responsibilities of these academicians and administrators are carried out with utmost care and diligence in each and every school/institution, in nook and corner of the nation, with all the requirements & resources being made available, India will be a nation, which, the whole world will wonder upon for its exemplary achievements in the International Sports events like the Olympics & Common Wealth Games.

REFERENCES

1. *"Health and Physical education"*, Dr. H.L. Kathri, 2009, Bookman Publishers, New Delhi.
2. <https://www.scandpg.org/sports-dietitian-job-description/>
3. <http://work.chron.com/job-duties-sports-nutritionist-14318.html>
4. https://www.cdc.gov/healthyyouth/physicalactivity/pdf/roleofschools_obesity.pdf
5. [http://www.ey.com/Publication/vwLUAssets/ey-sports-newsreel/\\$File/ey-sports-newsreel.pdf](http://www.ey.com/Publication/vwLUAssets/ey-sports-newsreel/$File/ey-sports-newsreel.pdf)
6. <https://timesofindia.indiatimes.com/india/No-1-in-underweight-population-India-among-top-5-in-obesity/articleshow/51656193.cms>



RELATION BETWEEN STUDENTS REASONING ABILITY TOWARDS MATHEMATICS AND THEIR ACHIEVEMENT

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ABSTRACT

Today's world has seen education as a powerful feature to achieve social and economic upward goals. Thus educational systems must concentrate on students' abilities to stimulate them and motivated to be active individual in learning process. New movement in education systems is moving from teacher-centered into student-centered situation. Proficiency in languages, science and mathematics is seen as an essential precursor to success in modern society the knowledge of mathematics is an essential tool in our society [Baroody1987]. Reasoning skills are an important component of education and reasoning skills are necessary for understanding mathematics in particular, and they present an important means of developing ideas. Mathematics is trigger the development of thinking ability particularly reasoning ability. This is because mathematics is knowledge which has deductive axiomatic characteristic, which need thinking ability and reasoning to understand it. Reasoning ability and achievement in mathematics were also correlated in mathematics. Thus, the reasoning is the process of thinking in conclusion. General conclusions can be drawn from the cases of the individual, or otherwise, of things that are common to be the case that individual. Sadiq (2009), Herdian (2010), defines reasoning as an activity, process or activity thought to draw conclusions or make a new statement, which was based on some statements whose truth has been proven or assumed previously.

KEYWORDS: Stimulate, Correlated, Triggering,

INTRODUCTION

Mathematics as a subject, should be given to all students to begin from elementary school to supply students with the ability to think logically, analytical, systematic, critical and creative as well as the ability to cooperate. As suggested by tinggih (in suhermanand winataputra, 1992) that mathematics is knowledge obtained by reasoning. This statement is confirmed by Ansjar and Sembiring(2000),that reasoning is main characteristic of mathematics which cannot be separated from activity of learning and developing mathematics or solve the mathematical problem. Beside, Wahyudin (2008:35-36) stated that reasoning ability is very important to understand mathematics and mathematically reasoning is thinking habit. This result of reasoning then poured into systematical concepts in mathematics. Those concepts continually developed to become concepts which more complex and advance even can be used to solve various problems in life. This reasoning ability is useful for someone in process of building and comparing ideas from various situations faced, so he/she can take appropriate decision in solving the problem of life. Such as suggested by Wahyudin (2008: 520), reasoning offer strong ways to build and express ideas about various phenomena.

The higher of education level someone has, then the higher of difficulty level of his/her mathematics learning. In student-centered approach, students are not passive learner, they should involve in the process of learning, participate in class activities, think individually, discuss in class and argue to accept or reject any educational issue. Students in traditional classrooms, just passively listen and follow they teacher, they are discouraged to speak or company in class.

MATHEMATICS

REVIEW OF LITERATURE

Mathematical Reasoning Ability Students Reasoning skills needed by students to understand the concept to the next can solve mathematical problems. With the students' reasoning skills can be cultivated and conditioned to ask. By asking the students can develop reasoning. One of the capabilities inherent in mathematics in addition to other capabilities such as mathematical communication, problem solving, or the ability to connect between the mathematical concepts is reasoning. Thus, the reasoning is the process of thinking in conclusion. General conclusions can be drawn from the cases of the individual, or otherwise, of things that are common to be the case that individual. Sadiq (2009), Herdian (2010), defines reasoning as an activity, process or activity thought to draw conclusions or make a new statement, which was based on some statements whose truth has been proven or assumed previously. In addition Sumarmo (2010: 260) says that reasoning is the ability and activity in the brain that must be developed continuously through a context. From some of the definitions set forth above it can be concluded that the reasoning is an activity or the activity of thinking in order to prepare a new statement, which was based on some statements whose truth is known in a advance..

Barodi (Dahlan, 2004) suggests some advantage if students are given tests involve reasoning, namely: (1) students have the opportunity and organized to use reasoning skills, and an educated guess; (2) encourage the students to do the estimate; (3) help students to understand the value of a negative feedback in deciding an answer; and (4) the reasoning ability to train and help the child to learn math. According Herdian (2010) characteristics of reasoning, namely;

(1) The existence of a mindset that is called by the logic, this means that reasoning is a logical thought process that is thought according to a certain pattern or according to a certain logic,

(2) Analytical thought processes. The main characteristic of mathematics as a thought process in the form of drawing conclusions from the general to the particular thing is deductive reasoning. While the reasoning is based on limited samples, and observed observation or experiment called inductive reasoning. According Suriasumantri (Kusumah, 2008) which states that inductive reasoning is the process of thinking in the form of a common conclusion (applicable to all / many) on the basis of knowledge about specific things starting from a set of facts. It means that the conclusion of an inductive reasoning process is highly dependent on the results of observations or experiments are limited. Inductive reasoning can occur when the process of thinking that link the facts or evidence of specific-evidence of the known leads to a conclusion of a general nature. Material mathematics and mathematical reasoning are two things that cannot be separated, namely matter understood through mathematical reasoning, and reasoning is understood and practiced through the learning of mathematics. In understanding the concept of learning is often preceded by inductively through real experience or intuition, using simple examples that highlight the capabilities. Mathematical reasoning brain is a custom job that must be developed consistently using a wide variety of contexts. Turmudi (2008) argues that the mathematical reasoning ability is the ability to express the arguments that are essential for understanding mathematics.

SUMARMO (2005) said that some of the indicators of the ability of belonging to the mathematical reasoning, namely:

- (1) Draw the logical conclusion,
- (2) Provide an explanation of the models, pictures, facts, nature, relationships or patterns exist,
- (3) Estimate the answer and process solutions,
- (4) Using a pattern of relationships to analyze the situation, or make an analogy, generalization, and arrange conjecture;
- (5) propose opponent example,
- (6) Follow the rules of inference, check the validity of the argument, proving and compose a valid argument,
- (7) Develop direct evidence, indirect evidence and proof by induction. Based on the above indicators (aspects) the ability of mathematical reasoning used in this study are as follows: (1) the ability of the students draw logical conclusions based on existing data; (2) the ability of the students check the validity of the arguments in the work on the problems; (3) the ability of students to explain the figures and tables they use in solving problems; and (4) the ability of students to prove the relationship between mathematical concepts.

Mathematics is a tool that can be used for solve the problems in daily life. Due to this mathematics has been considered as one of the most important allied subject in a secondary school curriculum. The Mathematics curriculum is a vast curriculum because it is the basis of all sciences, arts and much related to daily life. Reasoning ability towards mathematics plays a crucial role in the teaching and learning processes of mathematics. It effects students' achievement in mathematics. Teaching mathematics and mathematical reasoning are the two things are interrelated and cannot be separated because the material is understood through reasoning and mathematical reasoning to understand and drilled through learning mathematics (Depdiknas, 2002).

Achievement in Mathematics

Academic achievement has become an index of child's future in this highly competitive world. Academic achievement has been one of the most important goals of the educational process. It is also a major goal, which every individual is expected to perform in all cultures. Academic achievement is a key mechanism through which adolescents learn about their talents, abilities and competencies which are an important part of developing career aspirations (Lent *et al.*, 2000). Crow and Crow (1969) defined "Academic achievement as the extent to which a learner is profiting from instructions in a given area of learning i.e., achievement is reflected by the extent to which skill or knowledge has been imparted to him

CONCLUSION

On the other hand, if teachers provide situations of success for all students, this will improve students' sense of Reasoning ability and their attitudes towards learning, with all the benefits that could arise from such a case. India, as old and historical country, needs empower its students with high levels of essential abilities to improve and moving faster and faster with this competitive world.

REFERENCES

- Sugiarto, I. (2004). Power Optimizing Brain Work With Holistic Thinking and Creative. Jakarta: GramediaPustaka General.
- Sumarmo U. (2005).Mathematics Learning to Support the Implementation of School Curriculum 2012.Papers on Mathematics Education Seminar at the State University of Gorontalo.Gorontalo.
- Turmudi. (2008). The cornerstone of Philosophy and Mathematics Learning Theory (paradigm Explorative and Investigation). Jakarta: LeuserCita Library.
- Ahamed, Nabi.,&Raheem, Abdul.(2003). Intelligence, SES and adjustment as correlates of academic achievement.*The Educational Review*, 46(9), 6-9.
- Baig, S. danAnjun H. (2006).“Learning Mathematical Rules with Reasoning”.Eurasia Journal of Mathematics, Science and Technology Education. 2, (2), 15-39.
- Sadiq.F. (2009).Problem solving, reasoning and communication. Yogyakarta: Depdiknas
- A. Rosaly, “The relationship between attitude of students towards mathematics and achievement”,M.Phil.,Edu. Madurai Kamraj Univ.
- Cragg, L. & Gilmore, C. (2014). Skills underlying mathematics: The role of executive function skills in the development of mathematics proficiency. *Trends in Neuroscience and Education*, 3,63-68.



EFFECT OF ISOMETRIC STRENGTH TRAINING PROGRAM ON STRENGTH COMPONENTS OF SCHOOL LEVEL HANDBALL GIRLS

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ABSTRACT

*The purpose of the study was to determine the effects of eight weeks of isometric strength training program on strength components of school level handball girls (range between 14 to 16 years old) 40 girls handball players were divided into two groups: a handball isometric strength training group of experimental group (E N=20). A second group of similar age served as a control group (C, N=20). Isometric strength training sessions were performed twice a week for 8 weeks. Performance was assessed before and after conditioning. Arm Explosive power was determined by Overhead medicine ball throw (forwards); Leg Explosive Power was improved through standing broad jump and Abdominal Muscle Strength of player was determined by **Euro fit sit- ups**. The data was collected of strength components of variables collected by various test are explained above the pre test and post test data were collected before and after the training program for a period of eight weeks. The collected data on Arm Explosive Power, Leg Explosive Power and Abdominal Muscle Strength due to the effect of isometric strength training program was analyzed by computing mean and standard deviation. In order to find out the significant improve if any 't' test was applied. 0.05 level of confidence was fixed to test the level of significance. The probability level below, which the investigator objects, the hypothesis was terms as the level of significance. In analyzing mean and standard deviation. The 't' ratio was needed 2.09 at <0.05 level of confidence for the degrees of freedom.*

KEYWORDS: Isometric Strength Training, Arm Explosive Power, Leg Explosive Power And Abdominal Muscle Strength.

INTRODUCTION

Participation in sports is a great way of staying active and offers wonderful rewards for mental health. This skill facilitates working with others in other way such as a class project or a school play. Sports also help student become more independent and feel better about them the result is positive self- esteem and self- confidence, which are extremely important for determining later happiness and success. Sports are institutionalized competitive activities that involve vigorous physical exertion or the use of relatively complex physical skills by participants motivated by personal enjoyment and external rewards. Same way due to the development of sports is an incredibly important contributor to human nature in our pacified society. The lack of responsibility and risk talking swells to point where avoid any kind of competitive activity because of the inherent risk of failure. Participating in sports of at any level will replace the necessary competitive edge in an individual and kindle the fire of dedication and hard work.

Handball is a team sports in which two teams of seven players each pass a ball using their hand with the aim of throwing it into the goal of the other team. Modern handball is played on a court 40M by 20M with a goal in the middle of each end. The game was codified at the end of the 19th century in northern Europe and Germany. Men's handball was first played at the 1936 summer Olympics in Berlin as outdoors, and the next time at the 1972 summer Olympics in Munich as indoors, and has been an Olympic sport since. Women's team handball was added at the 1976 summer Olympics. the sports is most popular in the countries of continental Europe.

The sports training in the total process of preparation of sportsmen by different means and forms like developing physical fitness, techniques and tactics, cognitive, volitional and perceptual abilities, personal traits, positive benefits, values, attitudes and interest for training and competitions. Different variables and measures, which help in the attainment of high sports performance are termed as training means, High sports performance is facilitated only if the training adopted scientific, systematic, well planned and organized.

Isometric or Contraction is developed in the muscle working against resistance, but there is no change in the length of muscle. The literal meaning of the word is Iso means constant and metric means length. The reason why the muscle does not shorten in the contraction is because the external resistance against which the muscle pulling is much higher than the maximum tension (Internal force) the muscle can produce.

Sports people however adding resistance training during participation in the sports, so long as that resistance is not so great as to alter technique, may provide the most appropriate training for sports performance.

METHODOLOGY

Experimental Approach to the participation

In order to the hypothesis presented here in, school level handball girls 40 students from Maruthamalai Devasana higher secondary school, Coimbatore. Their aged ranged between 14 to 16 years. The subject were randomly assigned into two equal groups, namely Experimental Group (N=20) and control group (N=20). The isometric strength training programme was given to the experimental group for three days a week for period of 8 weeks. The control group was not given any treatment.

Training Procedure

The Training Programme was lasted for 45 minutes per session in a day, 3 days in week for a period of eight week. These 45 minutes included 5 minutes warm up and 5 minutes warm down remaining 35 minutes warm up allotted for training programme. Every two weeks of training 5% of intensity was increased from 65% to 75% OF work load. The training load was increased from the maximum working capacity of the subjects during the study.

Sequence of Training

A better approach began with their basic fitness of strength and conditioning training methods and isometric strength training schedule for eight weeks was show in table I.

Isometric Strength Training Schedule for Eight Weeks

Weeks	Isometric strength training	Sets x repetitions	Rest and recovery
1-2 weeks	Plank Bridge Side Bridge Hundred Breaths Exercise Isometric Squats	3x8	2minutes rest between sets
3-4 weeks	Plank Bridge Side Bridge Hundred Breaths Exercise Isometric Squats	3x10	
	Isometric Push Ups Isometric Shoulder Raises Isometric Squats Isometric Calf Raises		
7-8 weeks	Isometric Leg Extensions Isometric Hip Extensions Isometric Hip Abductions Decline push ups	3x15	

Testing Procedure

The pre test and post testing measurement were conducted on two different ways separately by minimum 24 hours. The variables tested on day 1 of the pre test and post testing sessions included a Arm Explosive Power was tested by Overhead medicine ball throw (forwards) measured in meters, Leg Explosive Power is tested by Standing broad jump measured in meters and Abdominal Muscle Strength was measured by Euro fit sit- ups by in numbers per 30 seconds. Subjects completed a stranded warm- up before testing sessions of aerobic capacity.

Statistical procedure

All subjects were tested on selected criterion variables. The collected data from the factors they were variables due to the influence of isometric strength training was statistically analyzed with 't' test to find out the significant improvement between pre and post test. In all cases the criterion for statistical significance was set at 0.05 level of confidence ($P < 0.05$).

TABLE- 1
COMPUTATION OF 'T' RATIO ON STRENGTH COMPONENTS OF SCHOOL
LEVEL HANDBALL GIRLS ON EXPERIMENTAL GROUP AND CONTROL GROUP
(SCORES IN NUMBERS)

Group	Variables		Mean	N	Std. Deviation	Std. Error Mean	T ratio
Experimental group	AEP	Pre Test	7.13	20	2.00	0.351	5.716*
		Post Test	9.13	20	2.58		
	LEP	Pre Test	1.10	20	0.20	0.059	7.17 *
		Post Test	1.52	20	0.32		
	AMS	Pre Test	10.3	20	2.4	2.65	3.20*
		Post Test	12.95	20	2.54		
Control group	AEP	Pre Test	7.13	20	2.02	0.81	0.93
		Post Test	7.06	20	1.96		
	LEP	Pre Test	1.06	20	0.19	0.014	1.59
		Post Test	1.08	20	0.18		
	AMS	Pre Test	10.25	20	2.75	0.951	0.94
		Post Test	10.45	20	2.87		

Table I reveals the computation of mean, standard deviation and 't' ratio on selected strength parameters namely arm explosive power, leg explosive power, and Abdominal Strength of experimental group. The obtained 't' ratio on arm explosive power, leg explosive power, and Abdominal Strength were 5.716, 7.17 and 3.20 respectively. The required table value was 2.09, it was found to be statistically significant for the degree of freedom 1 and 14 at 0.05 level of confidence. Since the obtained 't' values were greater than the table value it was found to be

statistically significant. Further the table reveals the computation of mean, standard deviation and 't' ratio on selected strength parameters namely arm explosive power, leg explosive power, and Abdominal Muscle Strength of control group. The obtained 't' ratio on arm explosive power, leg explosive power, and Abdominal Muscle Strength were 0.93, 1.59 and 0.94 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were greater than the table value it was found to be statistically not significant.

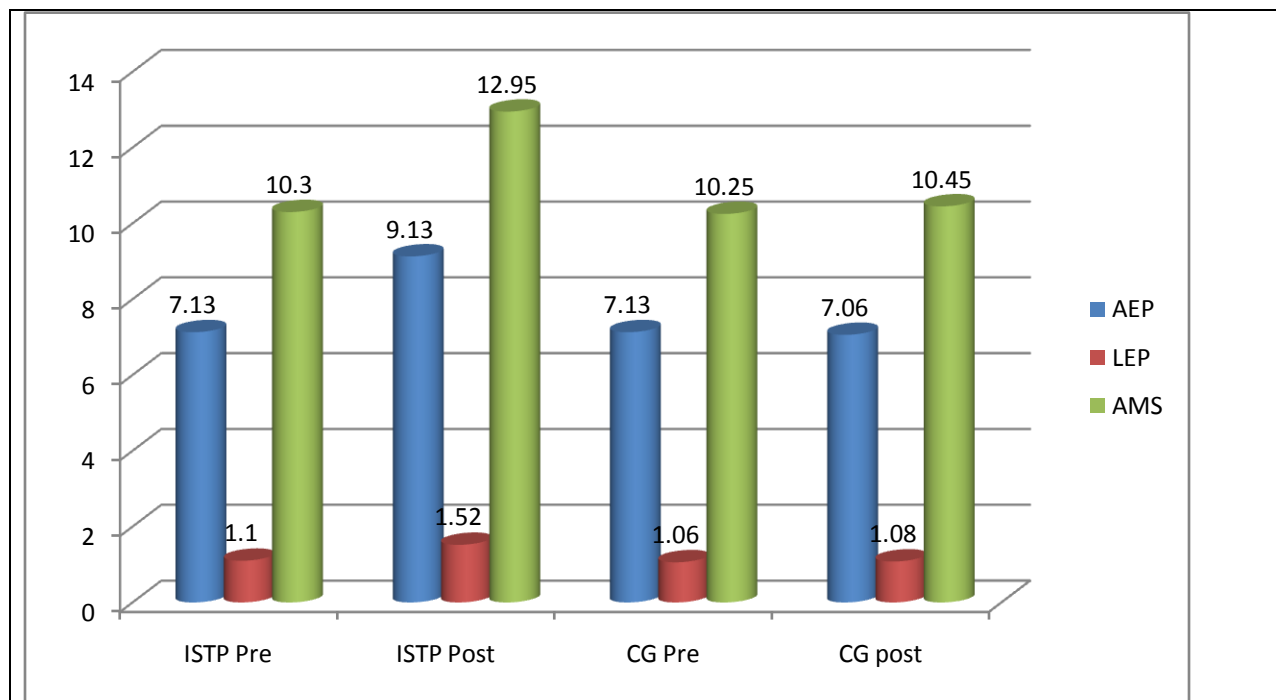


Figure 1

Bar diagram showing the mean value on Strength Components of school level handball Girls on experimental and control group (Scores in numbers)

DISCUSSION AND FINDINGS

The present study experimented the effect of isometric strength training programme on strength components of school level handball girls. The result of this study indicated that the isometric strength training improved the strength variables such as arm explosive power, leg explosive power and Abdominal Muscle Strength. The findings of the present study had similarity with the findings of the investigations referred in this study. Jari Ylinen et al., (2003) To evaluate the efficacy of intensive isometric neck strength training and lighter endurance training of neck muscles. Ayakumar et al., (2009) To investigate the changes observed on upper and lower extremities explosive power of male handball players during a handball match. kallinen et al., (1996) The effects of 12 weeks of progressive resistance strength training on the isometric strength, explosive power, and selected functional abilities of healthy women aged 75 and over. The results of the present study indicates that the isometric strength training programme is effective method to improve arm explosive power, leg explosive power and Abdominal Muscle Strength of school level handball girls. The discrepancy between the results and the results of

previous studies might be attributed to several reasons, such as the training experience level of the subjects, the training programme, the intensity used and the duration of the training programme.

CONCLUSIONS

It was concluded that eight weeks of isometric strength training produced significant improvement in arm explosive power, leg explosive power and Abdominal Muscle strength of school Level Handball Girls.

Eight weeks of isometric strength training produced significant improvement in arm explosive power, leg explosive power and Abdominal Muscle Strength of school level Handball Girls.

REFERENCE

1. Sir Trevor Brooking, (2007) The Total world sports and games, J Sports Med 27. Durnin, J wuest, (1987) administration of school health and physical program Saint Louis: the C.V. Mosby Company.
2. A.K. Uppal, (2009) science of sports training, Nethaji subash national institute sports Patiala.
3. Jari Ylinen MD et al., (2003) to evaluate the efficacy of intensive isometric neck strength training and lighter endurance training of neck muscles. Journal of orthopedic and sports physical therapy, 40(5):265-76.
4. Vassil et al., (2011) the efficiency of compound plyometric training program on youth volleyball players force capabilities in their usual training period. Journal of research and medical science, 52(6):606
5. Leena Paavolainen et al., (1991) Effects of explosive type strength training on physical Performance characteristics in cross-country skiers. European Journal of Applied Physiology and Occupational Physiology, Volume 62, Issue 4, pp 251-255.
6. Felipe, Oliveira et al., (2013) Effects of adding whole body vibration to squat training on isometric force/time characteristics. J Strength Cond Res. 2010 Jan; 24(1):171-83. doi: 10.1519/JSC.



METHODS OF COMMUNICATION FOR HEARING IMPAIRED - A GAP BETWEEN THEORY AND PRACTICE

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ABSTRACT

Three different methods of communication – Oralism, Total Communication and Educational Bilingualism are followed in different type of schools for the children with hearing impairment. Each has its own aims, objectives and principles. The study aims to analyze the differences in the academic achievement and performance of the students with hearing impairment in various school set up and the method of communications followed and to find out the reasons behind the success or failure. It is found that the performance of the students studying in Oral school is better than the other two. The reason behind the failure is that the school administration and the teachers are not totally aware of the principle of the methods and there is a gap between the theory and practice. Steps should be taken to fill in the gap. . There are success stories of schools which follow Total Communication or Educational Bilingualism too. In the schools selected for the study, we can see that there is a gap which prevails between theory and practice in the education of hearing impaired children.

KEYWORDS: *Hearing Impairment, Oralism, Total Communication, Educational Bilingualism*

INTRODUCTION

Children with hearing impairment face many problems in their day-to-day lives. It may be communicating with their family members, siblings, elders, and peer group. It may be learning from the basic concepts to complex concepts in their academics. They lack problem solving skills. Many problems are over-looked and neglected.

As visual impairment isolates a person from physical environment, the hearing impairment isolates a person from human beings. The hearing loss hampers a person in many ways. A child with hearing impairment at primary stage lags behind his/her normal peers at least a minimum of three to four years in language and speech development. The gap increases as he/she goes on to higher standards. Due to language delay, the individual with hearing impairment faces psychological, sociological, emotional and intellectual problems.

REVIEW OF LITERATURE

Mahwish Safder, et.al.(2012) found that students with hearing impairment were facing many difficulties regarding mode of instruction used by the teachers in class room; lack of sign language interpreters, and teachers' (inability to use) sign language during instruction.

Gudyanga E, et.al.(2014) established from the study that besides communication problems, students experienced feelings of anger, frustration and isolation depending on the dictates of the environment. Literature revealed that learning is a process that happens under observable and ideal conditions to the extent that situations. Literature revealed that learning is a process that happens under observable and ideal conditions to the extent that situations in which students are placed deliberately or otherwise had great effects on them.

Statement of the Problem

There is a major difference in educating children with hearing impairment when compared to teaching children with other disabilities. There are three major methods of communication followed by schools in teaching them. Some schools follow Oralism, some follow Total Communication and a few follow Educational Bilingualism. Each proclaims that theirs is the best. But we can see that whatever may be the type of school(Special/Integrated/Inclusive) and the method of communication they follow, majority of the individuals with hearing impairment are not successful in their academics and as a result couldn't able to fulfill all other aspects of life. This study focuses on the problems faced by children with hearing impairment at different type of schools with different methods of communication and to find out the reason behind them.

OBJECTIVES

- To discuss the teaching strategies followed in different type of schools for children with hearing impairment.
- To analyze the differences in the academic achievement and performance of the students with hearing impairment in various school set up and the method of communications followed.
- To find out the reasons behind the success or failure of the children with hearing impairment in their academic achievement and performance.

RESEARCH METHODOLOGY

A qualitative case study design is adopted for the study. Three special schools for hearing impaired and three integrated schools where hearing impaired students studying at Coimbatore District were purposively selected for the study. Through observation and discussion with teachers and students data were collected and analyzed.

Methods of Communication

There are three different methods of communication followed in the schools for the hearing impaired. The Table 1 shows that each special school follows different methods of communication namely Oralism, Total Communication and Educational Bilingualism. It also shows that all 3 integrated schools follow Total Communication only. Oralism is a philosophy which emphasizes to develop speech among hearing impaired through speech only. Oralists believe that with the help of residual hearing and proper amplification devices this can be made possible. Total Communication is a philosophy which emphasizes to develop speech through speech and sign system. This is also called as Simultaneous Communication (SIMCOM). The practitioners of this method believe that speech can be developed among the hearing impaired but not only through speech alone but along with sign system. Educational Bilingualism is a philosophy which emphasizes to develop language among the hearing impaired with the support of sign language. Sign language is acquired naturally by the deaf children, which is considered as language 1(L1). With that base, language 2(L2) i.e. the verbal language can be taught using sign language (L1).

TABLE 1
METHOD OF COMMUNICATION FOLLOWED IN THE SCHOOLS FOR THE HEARING IMPAIRED

		Method of Communication		
		Oralism	Total Communication	Educational Bilingualism
Type of School	Special School	1	1	1
	Integrated School		3	

Through observation of the performance of the students in various classroom activities, it is found that those who are studying at school which follows Oralism perform better than the others. This gives a picture that the Oralism is the best method of communication in teaching hearing impaired children.

REASONS BEHIND SUCCESS

The above interpretation is not true in its' real sense. Does the interpretation mean that the other methods are not good and successful? Certainly not!

There are many questions which pondered the author to analyze the problem, such as:

1. Do all the children with hearing impairment receive equal amount of exposure to language and speech?
2. Does every one succeed in the academics and be able to cope up with their normal peers?

3. Do different methods of communication and teaching strategies help to achieve the individualistic goals as well as societal goals?

When observed the following aspects are found in the school which have successful results and who followed Oralism:

- Teachers have positive attitude in teaching the hearing impaired children/students.
- Teachers plan activities effectively and give rich language environment to the children.
- Teachers seize the opportunities and utilize them to give exposure to language. For example, when a Police Inspector and a Constable visited a centre near by the school, a teacher took the students to them and made them to interact with the officials. The teacher talked about the Police Vehicle, the Uniform of the Police, the Duties of the Police, etc.
- The school gets the assistance and guidance from the expert in implementing Oralism at their school.
- Teachers make sure that the students use the amplification devices throughout the day.
- They give importance in providing listening environment and in developing speech.
- The school follows and fulfills the major principles of Oralism.

Reasons behind Failure

When other schools are observed, the following are noted:

- Only rote learning is insisted.
- Teachers only focus on exam point of view and teach them based on that.
- Students learn without comprehension.
- Teachers are not proficient enough in Sign Language or Sign System.
- Teachers are not totally aware of the principles of Total Communication or Educational Bilingualism.

CONCLUSION

The performance of the students in various classroom activities in the schools selected for the study give a wrong picture that the Oralism method of communication is the best and the other two - Total Communication and Educational Bilingualism are not successful methods. But this is not true. There are success stories of schools which follow Total Communication or Educational Bilingualism too. In the schools selected for the study, we can see that there is a gap which prevails between theory and practice in the education of hearing impaired children.

Children with hearing impairment need proper classroom acoustics, suitable hearing aids or classroom amplification devices, lighting, a systematic and a consistent exposure to language, individualistic care and attention, interpreters, adapted curriculum, etc. to be successful in their academic performance. It is in the hands of the school administration and the teachers to cater to the needs of the hearing impaired and fill in the gaps.

REFERENCES:

- Gudyanga E, Wadesango N, Eliphanos Hove and Gudyanga A. (2014). *Challenges Faced by Students with Hearing Impairment in Bulawayo Urban Regular Schools*. Mediterranean Journal of Social Sciences, Vol.5, No.9, pp445.
- John Mpofu and Sylod Chimhenga. (2013). *Challenges faced by Hearing Impaired pupils in learning: A case study of King George VI Memorial School*. IOSR Journal of Research & Method in Education (IOSR-JRME). Volume 2, Issue 1, pp69-74 .
- Mahwish Safder, Mahr Muhammad Saeed Akhtar, Ghulam Fatima and Misbah Malik. (2012). *Problems Faced by Students with Hearing Impairment in Inclusive Education at the University Level*. Journal of Research and Reflections in Education, Vol.6, No.2, pp129 -136.



EFFECT OF PHYSICAL ACTIVITY ON SELECTED PHYSICAL FITNESS VARIABLES OF ENGINEERING COLLEGE WOMEN STUDENTS

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ABSTRACT

The Purpose of the study to find out the Effect of Physical activity on selected Physical Fitness Variableness of the Engineering College Women Students. To achieve this purpose of the study has selected 26 students among Dr. Sivanthi Aditanar college of Engineering, Tiruchendur. They are aged from 17 -18 years as per the College records .The subject voluntarily participated in the physical activity programme. The training programme was included Pre test and Post test session. The training was given for 5 days per week for two months. The data were collected from the selected Physical fitness variables namely Strength, Explosive Power, Cardio Respiratory Endurance was statistically examine by using "t" ratio. Pre test and Post test were taken for analysis of data from the single group design. The level of significance was fixed at 0.05 level of confidence.

KEYWORDS: *Physical Exercise, Strength, Explosive Power, Cardio Respiratory Endurance.*

INTRODUCTION

Physical exercise is bodily activity that enhances or maintains physical fitness & overall health and wellness. It is performed for various reasons, Including increasing growth and development, prevent aging, strengthening muscle and the cardiovascular system, weight loss or maintain body weight and also enjoyments. Regular physical exercise boosts the immune system & helps prevent certain disease. It may also help prevent stress & depression, increase quality of sleep. It help promote or maintain positive self-esteem, improve mental health, maintain steady digestion. Physical fitness is an inseparable part of total fitness for effective living. Fitness involves interrelationship between intellectual and emotional as well as Physical factors, Good health is the basic Variables of fitness. Physical fitness only one Variables of the total fitness of the individual which also includes mental fitness, social Fitness and emotional fitness. Physical fitness is an ability to carry out daily tasks with ample energy to engage in leisure pursuits and to meet emergency situations. Regular participation in sports and games not only reduce extra body fat but also increase the strength, speed and endurance etc. Physical exercise is important for maintaining physical fitness and can contribute to maintaining a healthy weight, regulating digestive health, building and maintaining healthy bone density, muscle strength, and joint mobility, promoting physiological well-being, reducing surgical risks, and strengthening the immune system. Physical exercise specializing in the use of resistance to induce muscular contraction which builds the strength, anaerobic endurance. Strength exercise is beneficial for everyone, even people in their 90s. Flexibility exercises are activities that improve the ability of a joint to maintain the movement necessary for carrying out daily tasks and physical activity.

METHODOLOGY

To achieve this purpose of the investigator has selected 26 women students were selected from Dr. Sivanthi Aditanar college of Engineering, Tiruchendur. The training programme was included Pre test and Post test session. The training was given for 5 days per week for two months. The data were collected from the selected Physical fitness variables namely Strength, Explosive Power, Cardio Respiratory Endurance was statistically examine by using “t” ratio. Pre test and Post test were taken for analysis of data from the single group design. The level of significance was fixed at 0.05 level of confidence.

RESULT AND DISCUSSION

TABLE I.
COMPUTATION OF MEAN, STANDARD DEVIATION AND STANDARD ERROR OF
THE MEAN ON STRENGTH TEST

Group	Mean	Standard Deviation	Mean Difference	rDM	T ratio
Pre Test	14.269	5.762	4.231	1.885	2.244
Post Teat	18.50	7.072			

Table I shows that the significance difference in sit ups between Pre test and Post test. The “t” value required to be significance at 0.05 levels for 26 degrees of freedom is 2.056. The calculated “t” value is 2.244 for 26 degrees of freedom at 0.05 level of confidence. Since, the calculated “t” value is greater than the required “t” value there is significant difference between the two groups.

Hence the Hypothesis was accepted. The mean difference in sit ups is 4.231 are found to be significant.

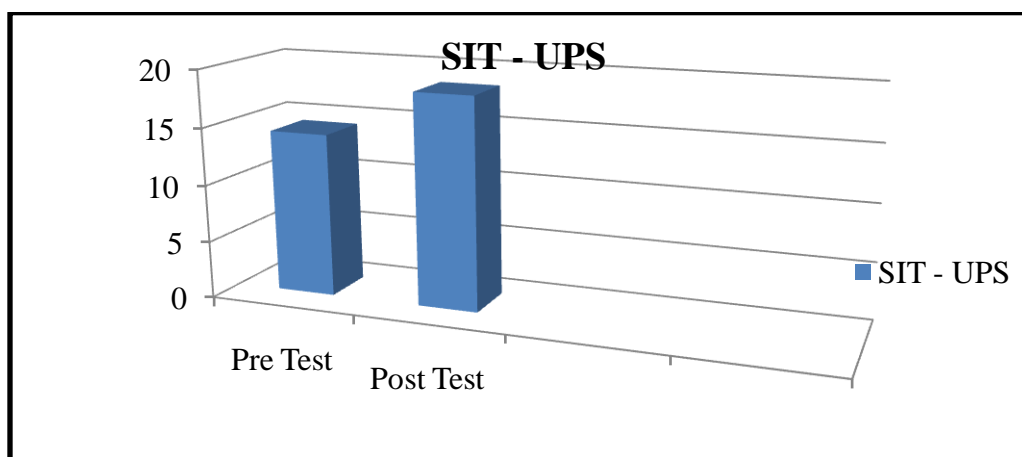


TABLE II. COMPUTATION OF MEAN, STANDARD DEVIATION AND STANDARD ERROR OF THE MEAN ON EXPLOSIVE POWER TEST

Group	Mean	Standard Deviation	Mean Difference	rDM	T ratio
Pre Test	1.302	0.159	0.128	0.049	2.588
Post Test	1.431	0.196			

Table II shows that the significance difference in Standing Broad Jump between Pre test and Post test. The “t” value required to be significance at 0.05 levels for 26 degrees of freedom is 2.056. The calculated “t” value is 2.589 for 26 degrees of freedom at 0.05 level of confidence. Since, the calculated “t” value is greater than the required “t” value there is significant difference between the two groups. Hence the Hypothesis was accepted. The mean difference in Standing Broad Jump is 0.129 are found to be significant.

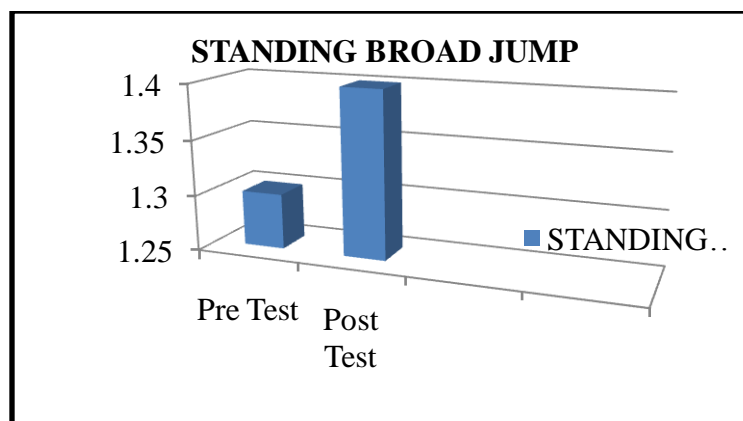
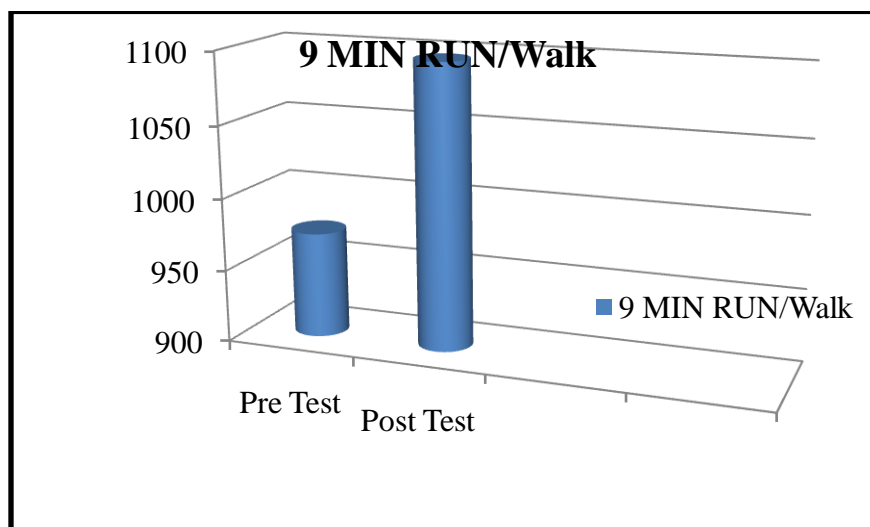


TABLE III. COMPUTATION OF MEAN, STANDARD DEVIATION AND STANDARD ERROR OF THE MEAN ON ENDURANCE

Group	Mean	Standard Deviation	Mean Difference	rDM	't' ratio
Pre Test	973.077	94.289	32.426	122.923	3.7908
Post Teat	1096.154	135.819			

Table III shows that the significance difference in 9 min Run and Walk between Pre test and Post test group. The "t" value required to be significance at 0.05 levels for 26 degrees of freedom is 2.056. The calculated "t" value is 3.791 for 26 degrees of freedom at 0.05 level of confidence. Since, the calculated "t" value is greater than the required "t" value there is significant difference between the two groups. Hence the Hypothesis was accepted. The mean difference in 9 min Run/Walk is 122.923 which are found to be significant.

**REFERENCE:**

1. Harrison H. Clarke. Application Measurement to Health and Physical Education (Engle woods cliffs, New Jersey: Prentice hall .inc., 1976):173
2. Hallal PC et.al., "Adolescent Physical Activity and Health: A Systematic Review", Sports Medicine, (2006):36(12):1019-30
3. Frank W. Bick, "Vital Individual Fitness Programmes" (Engle Wood N.J: Prentice Hall., 1973):229.



STRESS FACED BY TEACHERS WORKING IN SCHOOL FOR DIFFERENTLY ABLED

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ABSTRACT

Special schools are institute dedicated to improving the lives of children and adolescent with pediatric development disabilities, learning disorders, and behavioral problems through patient care, special education, research and professional training. Special educator's are the most stressed persons among teachers due to their huge workload, pressures and frustration in dealing with people with various degree of disabilities. This study mainly focuses on socio-economic profile, roles and responsibilities and problems faced by teachers. A survey was conducted among four schools in Kerala from which 60 special educators were taken as sample for study by convenient sampling. The research design used for study is descriptive research design that is the information is collected without changing the environment. From the study we have come to the conclusion that these special educators are facing stress in their professional life. The special school teachers are facing a lot of challenges as the study revealed that they are constantly under different kinds of stress. Though they took up this job with dedication, now they feel overwhelmed and upset. The personality of these teachers is a calling who are out to care the tender ones who need special care and training.

KEYWORDS: *Differently Abled, Special Educators, Stress*

INTRODUCTION

“A child with special needs will inspire you to be a special kind of person”

A special education teacher is someone who works with children and youths who have a variety of disabilities. Children with special needs require instruction by specially trained professionals to help them achieve their highest potential and strive to progress beyond their limitations. Special education teachers patient, understanding educators dedicated to giving each individual student the tools and guidance needed to help them maximize success.

Special education teachers are among the most stressed in the teaching profession. This is due to huge workload, emotional or psychological pressures, especially in dealing with pupils with various degrees of disabilities, and a high level of frustration experienced by teachers. This makes the job highly demanding, with those who cannot cope seeking alternative employment and job satisfaction outside the field of teaching exceptional children.

Teaching can be stressful occupation. The daily interaction with students and co-workers and incessant and fragment demands of teaching often lead to overwhelming pressures and challenges, which may lead to stress, stress is the body's reaction to any change that requires an adjustment or response. The body reacts to these changes with physical, mental and emotional responses based on this study “stress faced by the teachers working in schools for differently abled was undertaken with the following objectives; to know the socio-economic profile of the special education teachers. Analyze the roles and responsibilities of the teachers, and Study the problems faced by the teachers.

RELATED STUDIES

Larry Dean Bush.JR(2010) conducted a study on Special education teachers and work stress: Three sites were selected from eastern Washington State with a population base greater than 30, 000 people from the latest U.S. Special education teachers in this study reported several challenging aspects of their work; some of these challenges seem to inhibit bridging the cultural gap between special education and general education and some inhibited their ability to balance instructional and non instructional duties. Several of these challenges were similar for novice and veteran teachers, yet there were distinct contrast. The analysis of the data organized into four themes: who they are –special education teachers' values and motives; special education teachers work challenges; special education teacher's responses to work challenges; and special education teacher's affective responses to work challenges.

Reddy G.L (2007) “A Studies on Occupational stress among special educators” indicates that special education is a complex field where the teacher faces challenging situation in dealing children with disabilities within and outside the schools. Low salary, temporary nature of the job is the common feature of special education in India. Special Education teachers have higher levels of anxiety, feel less supported and have lower job satisfaction than their contemporaries.

Frost (2010) a study on “Teacher's attitude towards special children”, teachers attitudes play a significant role on whether special education can be fully be implemented in the regular school or not. Teachers who have positive attitude about special education accept children with special need in their classroom and involve them in all academic learning and social interaction with other children.

Monique (2013) a study on Challenges that special educators face in planning and providing special education services to students with disabilities”. It reveals that the needs of every student will be unique to that particular child and because the availability of resources to meet the specific circumstances dictated by a child’s unique needs will vary from the place to place, it is impossible to give one all-inclusive answer that includes all the potential challenges that may be faced. Special educators may face physical conditions that create challenges to the provision of services.

MATERIALS AND METHODS

The present study was of descriptive in nature. The universe of this study includes the special educators (adults) working Bethany special school, Pulikslody, Ashraya special school, Wandoor, Mother Veronica special school, Chungathara, in Nilambur district, Nirmal Jyothi special school, Sultan Bathery, Wayanad district, Kerala. The size of the sample of the study was 60. The period of data collection was from Dec 2016-Feb 2017. The researcher used interview schedule for data collection. The interview schedule consists of three parts: Socio-economic status of special educators, Roles and responsibilities of special educators, and stress faced by the special educators.

RESULTS AND DISCUSSION

TABLE -1
MENTAL STRESS FACED BY THE SPECIAL EDUCATORS

Mental Stress Factors	Number of respondents =60									
	Never		Rarely		Sometimes		Frequently		Always	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Worry	4	6	8	13	11	18	9	15	28	46
Anxiety	3	5	9	15	16	26	12	20	20	33
Difficulty in thinking	3	5	5	8	14	23	17	28	21	35
Low self Esteem	10	16	16	26	13	21	15	25	6	10
Depression	4	6	7	11	12	20	17	28	20	33
Panic	12	20	7	11	18	30	16	28	7	11
Chronic stress	4	6	10	16	12	20	16	26	18	30
Disorientation	6	10	11	18	20	33	21	35	2	3
Wandering mind	5	8	24	40	11	18	12	20	8	13

About 46% of the special school teachers are worried because they do not get enough time to take care of intellectual disability children since taking care of each child may vary. About (33%) of the teachers always feel anxious because of their work pressure. It is sad to note that under continues pressure and strain 35% of the teachers finds difficulty in thinking. Thirty-three

of the teachers undergo depression because they feel that students behave as they wish and it is difficult to control them. The teachers experience physical attack from intellectually disabled children and are afraid to be with the children because of their behavior (30%). Therefore the special school teachers are always highly stressed (30%) and hence turn panicky. It is the responsibility of the parents to take care of their children and to make them do their home works, but unfortunately most of the parents show only less interest towards their children and criticize the teachers, this leads the teachers to feel disoriented (35%). Some time's in spite of strenuous work they find themselves low, depressed and are not able to concentrate on their work. They always live in fear and panic because they do not know what reaction they would get from the students. It appears that teachers are always in trauma and need special care and deliverance.

Table-2
Difficulties Faced Due To Behavior/Temper Change

Behaviour of the ID Children	Occasionally		Frequently		Never	
	Frequency	%	Frequen cy	%	Frequenc y	%
Violent and destructive behavior	43	72	14	23	3	5
Temper tantrums	18	30	22	37	20	33
Misbehave with others	29	48	28	47	3	5
Self-injurious behaviours	30	50	23	38	7	12
Repetitive behaviours	42	70	15	25	3	5
Odd behavior	47	78	3	5	10	17
Hyperactive behavior	50	83	4	7	6	10
Rebellious behavior	48	80	10	17	2	3
Anti-social behavior	45	75	10	17	5	8
Fears	55	92	5	8	0	0

The training of the intellectual disability children should be given utmost care. There are different categories like mild, moderate, severe, and profound, according to the ability of their brain to identify things and to perform their activities. Accordingly to their ability of their brain activity the characteristics (behaviors) or the response of the child to every activity will vary that is when a severe child is hyperactive to a situation, a mild category child may not respond to it.

So accordingly to the children that is present in the class room where a teachers handles, is the main environment where the teachers ability to control the situation is a main concern. The behavior of students like violent and destructive behavior, temper tantrums, misbehaving with others, self-injurious behaviours, repetitive behaviours, odd behavior, hyperactive behavior, rebellious behavior, anti-social behavior are the challenges the special teachers faced every day. Apart from giving individual attention she is faced with this odd behavior which makes her

function very difficult. Though earlier they had opted for this job with service mind yet they find it very difficult in these odd situations.

SUGGESTIONS

Increase the salary of special school teachers.

Involve more meditation, yoga treatments for special school teachers for reducing stress.

To implement more trainings for teaching the students in special school.

The parents and the society should encourage and support the teachers in special school.

There is a need of a counselor for the stress management among special school teachers.

The authority should support the teachers in dealing with the special children

CONCLUSION

A special education teacher is someone who works with children and youths who have a variety of disabilities. Children with special needs require unique instruction by specially trained professionals to help them achieve their highest potential and strive to progress beyond their limitations.

Teachers have a great role in forming the society in a good way. They help for the overall development of student and the after parents. The comparisons with normal students the differently abled students are very different since they need special care in teaching and training. The special school teachers are facing a lot of challenges as the study revealed that they are constantly under different kinds of stress. Thought they took up this job with dedication, now they feel overwhelmed and upset. The personality of these teachers is a calling who are out to carve the tender ones who need special care and training.

REFERENCE

1. Wondimagegnehu, and Tsige, Amberoid, challenges faced by teachers” the context of this study was a regular school for teaching children with special needs in a sub-urban setting in southern Ethiopia, (2004), 31-40.
2. Berry, Rachel L “Special education teacher burnout: the effects of efficacy expectations and perception of job responsibilities”, (2011), 12-39.
3. Reddy.G.L “Problems faced by special education teachers of mentally retarded children”, (2014), 36-40.
4. Jodi D. Katsfanas, “The Roles and Responsibilities of Special Education Teachers” of Pittsburgh, (2006), 33-39.
5. Lauren B.Alloy, John Manos, Abnormal Psychology Current Perspectives, Ninth Edition, 2006.



EFFECTS OF YOGIC PRACTICES AND AQUATIC TRAINING ON DEVELOPING MOTOR FITNESS IN INDIAN MALE TEENS PLAYING KHO-KHO.

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ABSTRACT

Kho-Kho is one of the indigenous games of India. 'The game Kho-Kho is based on natural principle of physical development. It is not merely running with speed but it's "CHASE", a natural instinct to overtake, to pursue, to catch 'a kill'. Yoga is about creating balance, strength, flexibility and relaxation in the body through a series of postures, movements and breathing patterns. Aquatic exercises not only improve the functions of the respiratory system and the circulatory system, they also help develop muscular strength, endurance, and flexibility, effectively affecting changes in human body composition. Hence this study was conducted to find out the "Effects of yogic practices and aquatic training on developing motor fitness in Indian male teens playing Kho- Kho". Ninety Kho Kho players from Institute of Agriculture, Kumulur, Trichy district were selected as random subjects. The age of the players ranged from 17 to 19 years and were divided into three groups. Group - I underwent Yogic training, Group - II underwent Aquatic training and Group III - control group (No training). The training period was 12 weeks. Group I underwent different basic Asanas and group two underwent water aerobics for an hour a day for the period of training along with routine Kho- Kho playing. Performance related motor fitness variables such as Speed, Agility, Flexibility was observed among the subjects. As a result of the study, Speed of the subjects has greater improvement due to aquatic training than the yogic practices. The smaller gain noticed on speed due to yogic practice group. Agility has greater improvement among Group II (aquatic training group) than Group I (yogic practices group).

KEYWORDS: 1. Yogic practice, 2. Aquatic training, 3. Motor fitness, 4. Speed, 5. Agility, 6. Flexibility.

INTRODUCTION

Kho-Kho is an indigenous game. The game is played by two teams consisting nine players each. This game is based on the natural principle of physical development. It is not merely running with speed but it's "CHASE", a natural instinct to overtake, to pursue, to catch 'a kill'. A sport training is a systemic process extends over a long period. For best results, the system of training has to be based and conducted on scientific facts and lines. The training has to be based on the results of successful practices which have understood the test of time sports. The performance of a sports person primarily depends on his capacity, such as speed, strength and endurance.

Yoga universally benefits people of all ages. It's systematic for the improvement of physical fitness of an individual. Yet we lack in the experimental evidence about the utility of physical exercise and yogic exercises for promoting physical fitness.

Aquatic training gives significant improvement of Physiological performance (K.Kamalakkannan et.al., 2010). Aquatic training shows significant improvement in all the selected physical fitness variables (K.Kamalakkannan et.al., 2014). Plyometric training in aquatic environment can give effective improvement in endurance (K.Kamalakkannan et.al., 2011). Aquatic training produced positive impacts on the agility and explosive power (K.Kamalakkannan et.al. 2010).

METHODOLOGY

This study entitled "Effects of yogic practices and aquatic training on developing motor fitness in Indian male teens playing Kho- Kho" was conducted to find out the synergistic effect of yoga and aquatic training with sports and games. In this study a total of ninety male Kho-Kho players were randomly selected as subjects from Institute of Agriculture, Kumulur, Trichy district. The age of the subjects ranged from 17-19 years. The Subjects were divided into three groups namely Group I (Yoga training), Group 2 (Aquatic Training) and Group 3 (Control group- No training) in such a way that each group consist of 30 subjects. The duration of the training period was restricted to twelve weeks. Group I underwent different basic Asanas and group two underwent water aerobics for an hour a day for the entire period of training along with routine Kho- Kho playing

Traning Program

Group I (Yogic group) was trained for six days per week for the entire training period under carefully administered and controlled condition/prior to each training session. The entire subject of Group I participated in 10 minutes warm up which includes Surya Namaskar, Pranayamam. Group II (Aquatic training) performed walking slow, walking fast, slow jacking, Jumping etc in swimming pool as warm up session for 10 min. Group - I Performed Yogic training for 50 minutes and Group - II performed Aquatic Training for 50min and Group – III Control Group did not participate any activity. Each training session ended with 10 minutes of cool down activities, throughout the study period.

For evaluation, three motor fitness components (Speed, Agility and Flexibility) were selected as a criterion variable. To measure the variables different tests were carried out. For measuring speed-50 mts run, for agility- shuttle run test and for flexibility- sit & reach test were performed.

Experimental Design and Statistical Procedure

All the subjects were tested based on selected criterion variables. The collected data from the factors were statistically analyzed by using analysis of covariance, where they obtained F ratio for interaction effect found to be significant. The sample effect test was used as follow up test since 3 Groups were compared whenever they obtained F ratio value in simple effect test was significant. The Scheff's post hoc test was applied as post hoc test to determine the paired mean difference, if any. In all the cases 00.05 level of significance was fixed. The analysis of covariance was used to find out the significance among the three groups, The Scheff's post hoc was used to find out the paired mean differences.

TABLE – I
ANALYSIS OF COVARIANCE OF PRE-TEST, POST TEST AND ADJUSTED POST
TEST MEAN ON SPEED OF EXPERIMENTAL GROUP I, EXPERIMENTAL GROUP II AND
CONTROL GROUP (SCORES IN SECONDS)

CONTROL GROUP (SCORES IN SECONDS)								
TEST	EXP GROUP I (Yoga group)	EXP GROUP II (Aquatic group)	Control group	Source Of variance	Sum of square	DF	Mean square	F value
Pre-test mean	7.51	7.49	7.51	Between	0.01	2	.005	2.55
				Within	0.17	87	.002	
Post -test mean	7.48	7.46	7.54	Between	0.10	2	0.050	24.16
				Within	0.18	87	.021	
Adjusted post- test mean	7.47	7.47	7.53	Between	00.05	2	.025	73.09*
				Within	0.03	86	.003	
Mean gain	0.03	0.03	0.02					

***Significant at 00.05 level of confidence.**

(The table values required for significance at 00.05 level of confidence for 2 and 87 and 2 and 86 are 3.10 and 3.11 respectively).

Results of Speed

Table I shows the analyzed data on speed. The pre-test mean of speed were 7.51 for Yogic Practices, 7.49 for Aquatic training and 7.51 for control group. The obtained "F" ratio of 2.55 was lesser than the table F-ratio 3.11. Hence the pre-test is not significant at 00.05 level of confidence for the degrees of freedom 2 and 87. The post-test mean of speed were 7.48 for yogic practices, 7.46 for Aquatic training and 7.54 for control group. The obtained "F" ratio of 24.16 was higher than the table value 3.10. Hence the post-test is significant at 00.05 level of confidence for the degrees of freedom 2 and 87. The adjusted post-test mean of speed were 7.47 for, yogic practices 7.47 for Aquatic training and 7.53 for control group. The obtained "F" ratio of 73.09 is higher than the table value 3.11. Hence the adjusted post-test mean difference is significant at 00.05 level of confidence for the degrees of freedom 2 and 86. Since, three groups were compared, whenever they obtained 'F' ratio for adjusted post-hoc test was found to be

significant, the Scheffe's post hoc test to find out the paired mean differences was used and it is presented in Table I (a).

TABLE - I (A)
SCHEFFE'S POST HOC TEST MEAN DIFFERENCES ON SPEED AMONG THREE GROUPS (SCORES IN SECONDS)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
7.48	7.47	-	0.01	0.0003
7.48	-	7.53	00.05	0.0003
-	7.47	7.53	0.06	0.0003

* Significant at 0.05 level of confidence.

Table - I (a) The above mentioned table shows the scheffe's post-hoc test results. The ordered, adjusted final mean difference for speed of Yogic practices, Aquatic training and control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between Yogic practices, Aquatic training and Control group were 0.01, 00.05 and 0.06 respectively and it was seen to be greater than the confidential interval value of 0.0003. Hence, the above comparisons were significant. The mean values of speed are shown graphically in Fig-I.

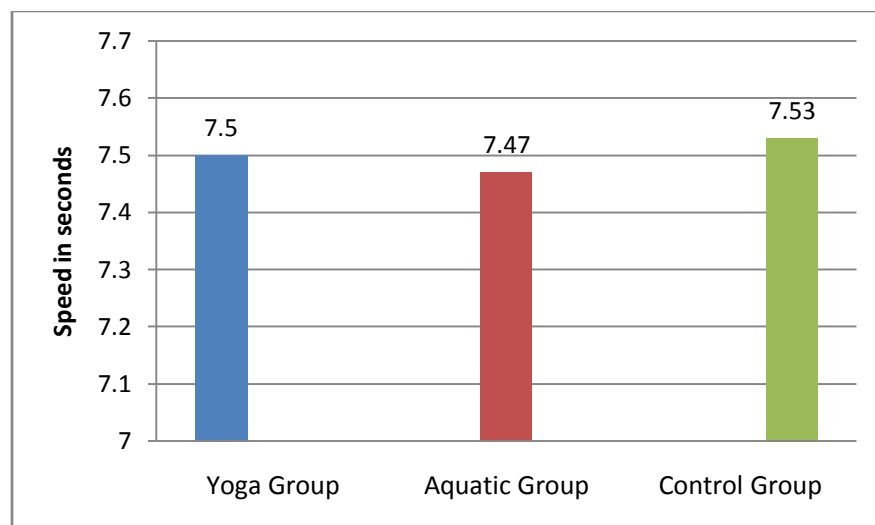


Figure – I
Adjusted post test mean values of experimental group i, experimental group ii and control group on speed

TABLE – 2
ANALYSIS OF COVARIANCE OF PRE-TEST, POST TEST AND ADJUSTED POST TEST ON
AGILITY OF EXPERIMENTAL GROUP I, EXPERIMENTAL GROUP II AND CONTROL
GROUP (SCORES IN SECONDS)

TEST	EXP GROUP I (Yoga group)	EXP GROUPII (Aquatic group)	Control group	Source Of variance	Sum of square	DF	Mean square	F value
Pre-test mean	11.12	11.10	11.11	Between	0.00	2	0.0000	0.0000
				Within	00.05	87	0.0006	
Post test mean	11.10	110.05	11.14	Between	0.12	2	0.0600	32.62
				Within	0.16	87	0.0018	
Adjusted post- test mean	11.09	11.06	11.14	Between	0.10	2	00.0510	34.27*
				Within	0.13	86	0.0015	
Mean gain	0.02	00.05	0.03					

* Significant at 0.05 level of confidence.

(The table values required for significance at 00.05 level of confidence for 2 and 87 and 2 and 86 are 3.11 and 3.10 respectively).

Results of Agility

Table II; the above mentioned table shows the analyzed data on Agility. The pre-test mean of Agility were 11.12 for Yogic practices, 11.10 for Aquatic training and 11.11 for Control group. The obtained “F” ratio of 0.00 was lesser than the table F-ratio 3.11. Hence the pre-test was significant at 00.05 level of confidence for the degrees of freedom 2 and 87. The post-test mean of Agility were 11.10 for Yogic practices, 110.05 for Aquatic training 11.14 for control group. The obtained “F” ratio of 32.62 was higher than the F-ratio 3.11. Hence the post-test was significant at 00.05 level of confidence for the degrees of freedom 2 and 87. The adjusted post-test mean of Agility were 11.09 for Yogic practices, 11.06 for and Aquatic training and 11.14 for Control group. The obtained “F” ratio of 34.27 was higher than the F-ratio 3.10. Hence the adjusted post-test mean difference is significant at 00.05 level of confidence for the degrees of freedom 2 and 86. Since, three groups were compared, whenever the obtained ‘F’ ratio for adjusted post-hoc test is found to be significant, the Scheffe’s post-hoc test was used to find out the paired mean differences and they are presented in Table below

TABLE - 2 (A)
SCHEFFE'S POST- HOC TEST MEAN DIFFERENCES ON AGILITY AMONG THREE
GROUPS (SCORES IN SECONDS)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
11.09	11.06	-	0.03	0.0015
11.09	-	11.14	00.05	0.0015
-	11.06	11.14	0.08	0.0015

*** Significant at 0.05 level of confidence.**

Table - II (a); the above mentioned table shows the scheffe's post-hoc test results. The ordered adjusted final mean difference for Agility of Yogic practices, Aquatic Training and Control group were tested for significance at 00.05 level of confidence against confidential interval value. The mean differences between Yogic practices, Aquatic Training and Control group were 0.03, 00.05 and 0.08 respectively and it was seen to be greater than the confidential interval value of 0.0015. Hence the above comparisons were significant.

The mean values of Agility are shown graphically in Figure.2

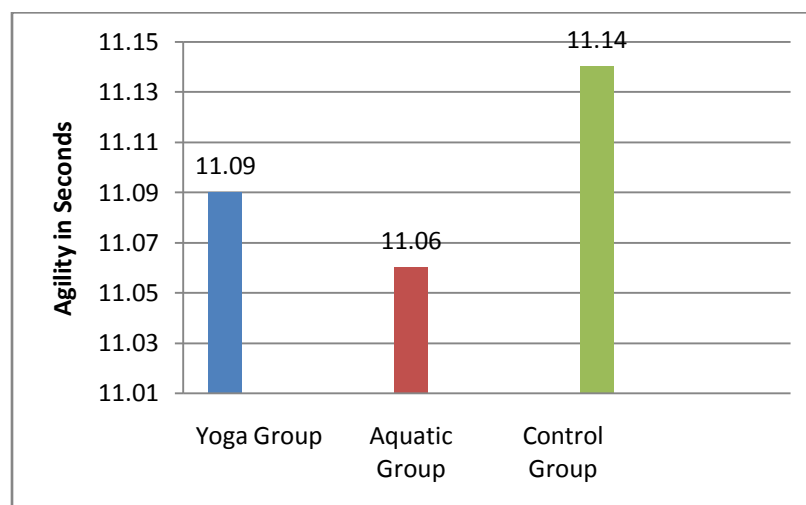


Figure – 2
Adjusted post test mean values of groupI, group II and group III on agility

TABLE – 3
ANALYSIS OF COVARIANCE OF PRE-TEST, POST TEST AND ADJUSTED POST TEST ON FLEXIBILITY OF EXPERIMENTAL GROUP I, EXPERIMENTAL GROUP II AND CONTROL GROUP (SCORES IN CM)

TEST	EXP GROUP I (Yoga group)	EXP GROUP II (Aquatic group)	Control group	Source Of variance	Sum of square	DF	Mean square	F value
Pre-test mean	29.36	29.13	29.06	Between	1.49	2	0.74	0.53
				Within	120.30	87	1.38	
Post -test mean	35.03	31.56	27.00	Between	225.5	2	112.75	72.27*
				Within	136.33	87	1.56	
Adjusted post- test mean	33.90	31.60	27.09	Between	205.25	2	102.62	43.11
				Within	204.68	86	2.38	
Mean gain	5.67	2.43	2.07					

* Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 and 87 and 2 and 86 are 3.11 and 3.10 respectively).

Results of Flexibility

Table III; the above mentioned table shows the analyzed data on Flexibility. The pre-test mean of Flexibility were 29.36 for Yogic practices, 29.13 for Aquatic training and 29.06 for Control group. The obtained “F” ratio of 0.53 was lesser than the table F-ratio 3.11. Hence the pre-test was not significant at 0.05 level of confidence for the degrees of freedom 2 and 87. The post-test mean of Flexibility were 35.05 for Yogic practices, 31.56 for Aquatic training and 27.00 for Control group. The obtained “F” ratio of 72.27 was higher than the table F-ratio 3.11. Hence the post-test was significant at 0.05 level of confidence for the degrees of freedom 2 and 87. The adjusted post-test mean of Flexibility were 33.90 for Yogic practices, 31.60 for Aquatic training and 27.09 for Control group. The obtained “F” ratio of 43.11 was higher than the F-ratio 3.10. Hence the adjusted post-test mean difference is significant at 0.05 level of confidence for the degrees of freedom 2 and 86. Since, three groups were compared, whenever they obtained ‘F’ ratio for adjusted post-hoc test is found to be significant, the Scheffe’s post hoc test was used to find out the paired mean differences and it is presented in Table below

TABLE – 3 (A)
SCHEFFE’S POST HOC TEST MEAN DIFFERENCES ON FLEXIBILITY AMONG
THREE GROUPS (SCORES IN CENTIMETER)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
34.90	31.60	-	3.3	0.81
34.90	-	27.09	7.81	0.81
-	31.60	27.09	4.51	0.81

*** Significant at 0.05 level of confidence.**

Table –III (a); the above mentioned table shows the Scheffe’s post-hoc test results. The ordered adjusted final mean difference for Flexibility of Yogic practices, Aquatic training and Control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between yogic practices and Aquatic training and Control group were 3.3, 7.81 and 4.51 respectively and it was seen to be greater than the confidential interval value of 0.81. Hence, the above comparisons were significant.

The mean values of Flexibility are shown graphically in Fig.3.

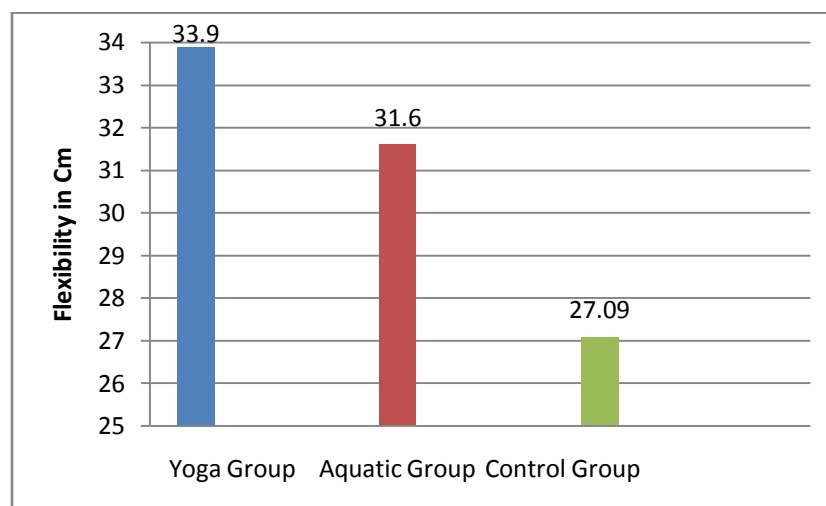


Figure – 3
Adjusted post test mean values of experimental group i, experimental group ii and
control group on flexibility

DISCUSSION ON FINDINGS

Yogic practices and Aquatic training have produced significant improvement on selected motor fitness variables, physiological and psychological variables namely speed, agility, flexibility, and V02 max, breath holding time, resting heart rate, aggression, achievement motivation and self-confidence of male Kho-Kho players. Greater improvement on speed due to Aquatic training than the yogic practices and control group. Smaller gain was noticed on speed due to yogic

practices than the aquatic training. There was a greater improvement on agility due to Aquatic training than the Yogic practices and Control group. Smaller gain was noticed on agility due to Yogic practices than the Aquatic training. Greater improvement on flexibility due to Yogic practices than the Aquatic training and Control group. The smaller gain noticed on flexibility is due to Aquatic training.

CONCLUSION

Yogic practices and Aquatic training have produced significant improvement on selected motor fitness components namely speed, agility, flexibility of male Kho-Kho players.

RECOMMENDATIONS

As far as college students are concerned, training period can be increased from 12 weeks to 18 weeks. More variables can also be added for the benefit of the students. It is recommended that the Sports Trainers, Professionals, Physical Directors and Coaches can concentrate on improving the level of the students through giving practices.

Even the students of other disciplines like Kabaddi, Football and Basket Ball can be given training in Aquatic and Yogic practices by making slight changes in the variables. It is recommended that the Sports Trainers, Professionals, Physical Directors, Coaches can concentrate on improving the level of the students through giving practices by making a change in the variables.

BIBLIOGRAPHY

1. Kamlesh M.L. (1994). Scientific art of teaching Physical Education. New Delhi: Metropolitan.
2. Iyengar B.K.S (2001), *Yoga – The path of Holistic Health*, Dorling Kindersley Limited, Great Britain, *Health*, Dorling Kindersley Limited, Great Britain, p.16
3. John Floyer & Edward Batnard (2009), *Treating the genuine life of Hot and Cold Baths* London: William Innys. Fourth Edition, with Appendix. Retrieved 2009-10-22.
4. K.Kamalakkannan M. Balaji, N.Vijayaragunathan and R.Kalidasan (2010), Aquatic training with and without weights and its impact on agility and explosive power among volley ball players. British journal of sports medicine, 44:i16-i17 doi:10.1136/bjsm.2010.078972.49
5. K.Kamalakkannan, M. Balaji, N. Vijayaragunathan, C.Arumugam. Effect of Aquatic training with and without weight training on selected physiological variables among volleyball players. Indian journal of science and technology. 2010.3, 567-570.
6. K. Kamalakkannan, Kaukab Azeem, C.Arumugam. The effect of aquatic plyometric training with and without resistance on selected physical fitness variables among volleyball players. Journal of physical Education and sport. 2011.11(2)31.205-210.
7. K.Kamalakkannan, Kaukab Azeem,. Effect of shallow water and land walking on selected physical fitness variables among obese adults. Journals of Biological Research. 2014,5(6):1-4.



DEVELOPING TAMIL WRITING SKILLS THROUGH TAMIL FINGER SPELLING AMONG CHILDREN WITH HEARING IMPAIRMENT AT PRIMARY LEVEL

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ABSTRACT

Teaching and understanding of the finger spelling at the earlier stage can help the students with hearing impairment to become a better learner. Finger spelling and writing are interrelated. Finger spelling also helps in facilitating English vocabulary. So the present was conducted on "Developing Tamil Writing Skills through Tamil Finger Spelling among Children with Hearing Impairment at Primary level" was conducted special schools in Coimbatore district. The present study was quasi-experimental with one experimental group was employed. Performance of children with hearing impairment in writing skills especially in spelling level was the dependent variable and type of hearing loss is an independent variable. The study was designed on the basis of levels of students. The study was planned to conduct in four phases. Basic Writing Skill for Primary Level (BWSPL) is used to find the level of writing, intervention purpose the investigator developed the Tool for Tamil Finger spelling Package for 203 Tamil Alphabets based on Tamil Finger spelling Package for 30 Tamil Alphabets prepared by the investigator in 2015 and Instructional package on usage of Tamil Alphabets. The result exposed that the simplified activity based method was the best method for assessing children with special needs

KEYWORDS: *Hearing Impairment, Writing Skill, Tamil Finger Spelling, Usage Of Tamil Alphabets*

INTRODUCTION

Exposure, environment and experience through formal or informal learning system play very vital role in developing literacy skill. Since the acquisition of literacy skills is based on listening, reading, writing and speaking skills only. Reading or writing is a skill based on the recognition of image of the picture and graphical representation of the printed format. The alphabets are recognized through sound and graphical representation of the printed format. Only when we are aware about the printed format we can write and read the information without any mistake. . The children with hearing impaired are retarded in the area of reading and writing because of unawareness of the graphic representation of alphabets. A lack of auditory perception and visual perception leads to poor cognitive development. This article presents the experimental study on the **Developing Tamil Writing Skills through Tamil Finger Spelling among Children with Hearing Impairment at Primary level**. The conclusions given were drawn from the outcomes of the research and observations on the Writing skill development of children with hearing impairment. Moreover, recommendations were base from the findings and conclusion of the study.

REVIEW OF LITERATURE

The present study is conducted mainly to develop the writing skills using instructional package on Tamil Finger spelling and instructional package on usage of Tamil Alphabets to enhance the writing skills among children with hearing impairment at primary level

In addition the following studies also stress the problems in writing skills among Hearing impaired specially

A study by **Gormley&Sarchandeily, (1987)** stated that severely and profoundly deaf children produce grammatical errors in their writing. Because the child with hearing impaired is retarded in reading and writing. Due to unawareness of the graphic representation of each alphabets and knowing, understanding and comprehension of each alphabet, this enhances the problem in abstract writing \ independent writing and memory writing.

Mayer (2007) found out that - it is at Level 3, Connecting Writing to Spoken/Signed Language, where the writing of children who are deaf begins to look noticeably different from their hearing peers. Level three requires an individual to bring together what they know of face-to-face language (this would be a spoken language for children using the auditory-oral method and ASL or another signed based language) and what they know as far as how print works

Marilyn Daniels (1994) stated that teaching finger spelling is helpful for verbal children's language and literacy skills and can help those who are struggling with spelling and reading

Sharon Baker (2010, July), Washington has stated that "Early exposure to finger spelling helps these children become better readers. Finger spelling, reading, and writing are interrelated. Finger spelling facilitates English vocabulary growth, and larger the lexicon, the faster new vocabulary is learned. Finger spelling positively correlates with stronger reading skills. Children with Deaf and hard of hearing who are good finger spellers are good readers, and vice versa."

Need and Importance of the Study

Hearing loss is assumed to have a crucial implication in speech and language development of children. Normally a hearing impaired child develop their writing skill by copy writing, guided writing and independent writing with the help of residual power of auditory perception, speech

reading and speech of others. But following difficulties were observed in developing their writing skill.

- Face problem in perceiving and interpreting the text message.
- Very poor differentiation of the phonemes because some of the phonemes are invisible in nature during the production.
- Very poor performance in auditory perception because the hearing loss acquired in the early stage of life.
- Not able to recognize the sound letter association and their meaning.
- Not aware about framing of words in sentence.
- Memorizing the graphical representation of the phonemes in Alphabet.

The above mentioned reasons lead to problems in developing writing skills. With reference to the reviews projecting minimum studies in developing writing skills through finger spelling, the researcher proposed to study the “Developing Tamil Writing Skills through Tamil Finger Spelling among Children with Hearing Impairment at Primary level”. The study is expected to have a get through in developing Tamil language among Hearing impaired.

OBJECTIVES OF THE STUDY

The major objectives of the study are to:

- To develop Tamil finger spelling intervention package and instructional package on usage of Tamil Alphabets to enhance the writing skills among children with hearing impairment at primary level
- To find the impact of Tamil finger spelling intervention package in developing writing skills among hearing impaired students at primary level with respect to variables such as
 - Type of Hearing Loss.

Hypothesis of the Study

- There is no significant difference in writing skills of children with hearing impairment at primary level before and after intervention of Tamil finger spelling package and package on usage of Tamil Alphabets with reference to
 - Type of Hearing Loss.

METHODOLOGY

The present study was quasi-experimental with one experimental group. Performance of children with hearing impairment in writing skills especially in spelling level was the dependent variable and type of hearing loss is an independent variable. The study was planned to conduct in four phases. To attain this objective the investigator constructed the following tool to find the level of writing Basic Writing Skill for Primary Level (BWSPL) is used to find the level of writing, intervention purpose the investigator developed the Tool for Tamil Finger spelling Package for 203 Tamil Alphabets based on Tamil Finger spelling Package for 30 Tamil Alphabets prepared by the investigator in 2015 and Instructional package on usage of Tamil Alphabets. The tool was administered to all the children with hearing impairment ranging from 7 to 9 years at primary level in three special schools at Coimbatore district. The scoring for the tool is only, if the

sample answer all the five items in each question, then a score of one was given. If the children do not answer a score of zero was given.

RESULT AND DISCUSSION:

The basic writing skills inventory for primary level and was prepared administered to the 50 hearing impaired children by the researcher. The data pertaining to the identification of writing problems of selected sample were processed and analyzed with the use of quantitative and qualitative techniques. The result of the study was discussed systematically. Once the pretest was completed, an effective intervention was implemented.

Writing skills in children with hearing impairment before and after Intervention

To observe the writing skills of children with hearing impairment before and after intervention, the data was collected, tabulated and analyzed as follows.

TABLE - 1
CORRELATION CO-EFFICIENT OF WRITING SKILLS IN CHILDREN WITH HEARING IMPAIRMENT BEFORE AND AFTER INTERVENTION

Sample Size	Testing	r value	P value
50	Pretest	0.387	0.005
	Posttest		

Significant at 0.05 level

It is clear that there is a significant difference in the Correlation Co-Efficient of pre and posttest in children with hearing impairment. From the above table it is indicated that the calculated p-value ($r = 0.387$) is significant at 0.05 level. Therefore, the null hypothesis stated as **“There is no significant difference in writing skills of children with hearing impairment at primary level before and after Tamil finger spelling intervention”**, is rejected. So it is proved that there is a greater impact in the utilization of Instructional Package on Tamil finger spelling.

Writing skills of Hearing Impaired Children before and after Intervention with respect to independent variables on the basis of type of hearing loss

Writing is a productive skill, developed by structure and vocabulary which should be developed through listening and reading. Due to hearing loss, the children with hearing impairment are facing more problems in developing writing skills.

TABLE - 2
COMPARISON OF WRITING SKILLS IN CHILDREN WITH HEARING IMPAIRMENT BEFORE AND AFTER INTERVENTION ON THE BASIS OF TYPE OF HEARING LOSS

Type of hearing loss	Testing	Score	Mean	SD	t-value	P value
Conductive	Pretest	177	7.08	2.69	43.18	0.000
	Posttest	971	38.8	1.52		
Sensory neural	Pretest	122	4.88	2.82	60.29	0.000
	Posttest	886	35.44	2.16		

Significant at 0.05 level

Comparison of pre and posttest in children with conductive and sensory neural & mixed type of hearing loss, reveals that the t- value (conductive $t=43.18$, sensory neural & mixed $t=60.29$) for both test is significant at 0.05 level. Therefore, the null hypothesis was, “There is no significant difference between the children with hearing impairment at different type of hearing loss in terms of writing skills **before and after intervention**”, is rejected. Hence it was found that there is significant difference between the children with hearing impairment for the different type of hearing loss in terms of writing skills before and after intervention.

CONCLUSION

Gradual improvement was happened in writing skill among children with hearing impairment at primary level only because of implementation of intervention package on Tamil Finger spelling and package on usage of Tamil Alphabets. Once when the child is identified with hearing impairment through proper audio logical management, fitment of hearing aid and gets proper training and intervention through instructional package on Tamil finger spelling intervention package and instructional package on usage of Tamil Alphabets at right time, definitely they may develop their writing skill.

BIBLIOGRAPHY:

- + **Goldin-Meadow, S., Cook, S. W., & Mitchell, Z. A. (2009).** Gesturing gives children new ideas about math. *Psychological Science*, 20, 267-272
- + **Hanson, V., Liberman, I.Y., & Shankweiler, D.J. (1984).** Linguistic coding by deaf children in relation to beginning reading success. *Journal of Experimental Child Psychology*, 37, (Pp.378-393).
- + **Marilyn Daniels (1994).** The Effect of Sign Language on Vocabulary Development in Young Hearing Children. Paper presented at the Annual Meeting of the Speech Communication Association (81st, San Antonio, TX, November 18-21, 1995)
- + **Mayer C. ,(1999),** Shaping at the point of utterance: An investigation of the composing processes of the deaf student writer, *Journal of Deaf Studies and Deaf Education* vol. 4 (Pp. 37-49)
- + **IGNOU study material - M .Ed Special Education**
- + **Padden C.A (1991).** The acquisition of fingerspelling by deaf children In: **Siple P, Fischer S**, editors. *Theoretical issues in sign language research*. Chicago IL: University of Chicago Press; (Pp. 193–210).
- + **Sharon Baker, (2010, July).** The Importance of Fingerspelling for Reading, Visual Language and Visual Learning Science of Learning Center. (Research Brief No. 1). Washington, DC

WEB LINKS

1. http://muse.jhu.edu/journals/sign_language_studies/summary/v001/1.3ramsey.html
2. www.babies-and-sign-language.com



EFFECT OF ANXIETY ON PHYSIOLOGICAL, PSYCHOLOGICAL AND BEHAVIOURAL ASPECTS IN SPORTS PERFORMANCES

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ABSTRACT

The purpose of the study was identifying the effect of anxiety on Sports Performance of Physiological, Psychological and Behavioural aspects. The two distinct mode of anxiety are trait anxiety based on innate characters and state anxiety relates to situational specific. In connection with this, there are two processes viz. somatic and cognitive anxieties. Competitors suffer from both processes that are dominant over the other. The population of this study comprised of all the players at different level of sports activities from Department of Physical Education. The data collected by using the Sport Competition Anxiety Questionnaire. Rainer Martens (1977), professor of Physical Education at the University of Illinois, designed The Sport Competition Anxiety Test is a psychometric test to score athletes for trait anxiety, which he calls A-trait. This test aims to be objective, proof against response bias (demand characteristics) and easy to fill in and score. The SCAT was discovered to be high in test and retest reliability ($r = 0.77$). The collected data computed by using Analysis of Covariance. Psychometric tests are also objective; it means they do not depend on subject's interpretation or opinion. The obtained f was significant at 0.05 level of Confidence. In addition, this test helps to measures trait anxiety, which is a long lasting disposition; whereas biological arousal is temporary and situational. And widely used test in Sport Psychology, probably because it's so simple for Martens himself has gone on to publish many books on coaching and founded the American Sport Education Program, which endorse physical education in schools and colleges based on psychological principles.

KEYWORDS: Anxiety, Sports, Psychological, Behavioural, Physiological, SCAT And TAT

INTRODUCTION

Anxiety is a term is broadly debated by trainers and trainees. Practitioners who indulged in competitive performance are in dire need of understanding the anxiety related issues. Once the understanding is done it would be easy to handle anxiety related matters. The medical definition of anxiety describes it is a state consisting of psychological and physical symptoms brought about by a sense of apprehension of a perceived threat. The two distinct mode of anxiety are trait anxiety based on innate characters and state anxiety relates to situational specific. In connection with this, there are two processes viz. somatic and cognitive anxieties. Competitors suffer from both process that are dominant over the other. The general symptoms of somatic process of anxiety includes stomach butterflies, short breaths, increased pulse and sweating meanwhile the cognitive process of anxiety includes nervousness, false or negative thoughts.

The anxiety related symptoms are very difficult to understand because for what work for the one will not work for the other. Hence, the experienced competitors develop individual strategies and beginner need to be taught and guided. According to **Kremer and Moran (2008)** one reason why we tend to get uptight before competition could be related the pressure of being observed. The athletes are thoroughly evaluated by the spectators and this extremely daunting them to withstand the pressure. It is very normal to have pre-competitions nervousness, but, a moderate level of anxiety of arousal helps to prepare the body for competition. At the same time when the anxiety is too high, it will definitely affect the performance of the individual. If left undressed, the negativity may impair performance.

The Purpose of this study was to find how the anxiety affects the physical, physiological and behavioural performances of the female varsity competitors

RELATED REVIEWS

Green and Green (1977) studied Indian yoga practitioners and discovered they were able to control various physiological functions voluntarily including brain waves, body temperature and blood pressure. It was also relatively simple to teach others how to control their physiological feelings too. The study was able to demonstrate how the mind and body are linked which brings us to the next technique. Performing a simple exercise such as breathing effectively can enable an athlete to relax and prepare for competition as more oxygen gets carried in the blood which in turn facilitates the working muscle. **Tim Woodman & Lew Hardy (2011)**, studied the relative impact of cognitive anxiety and self-confidence upon sport performance: meta-analysis ($k=48$) investigated two relationships in competitive sport: (1) state cognitive anxiety with performance and (2) state self-confidence with performance. The cognitive anxiety mean effect size was $r=-0.10$ ($P<0.05$). The self-confidence mean effect size was $r=0.24$ ($P<0.001$). A paired-samples t-test revealed that the magnitude of the self-confidence mean effect size was significantly greater than that of the cognitive anxiety mean effect size.

Graham (2009) provides a critical overview of developments and issues in competitive anxiety research. The discussion is divided into sections dealing with general arousal-based approaches, general anxiety-based approaches and, finally, multidimensional anxiety-based approaches. The major emphasis is on multidimensional anxiety-based approaches, in which a number of factors and issues surrounding the competitive anxiety response are addressed, including: conceptual and measurement developments; antecedents of competitive anxiety; temporal patterning of the response; and frequency of competition-related cognitive intrusions. More than just a game: Research developments and issues in competitive anxiety in sport. According to **the Drive**

Theory, a physically skilled athlete can gain a psychological edge over competitors by harnessing the power of positive stress. Conversely, negative stress can promote feelings of self-doubt, directly affecting an athlete's ability to cope with the regular stresses of a competitive environment, ultimately leading to a drop in performance. The results of a 2009 study published in the online sports psychology journal Athletic Insight highlight the correlation between competitive trait anxiety and burnout in young athletes. An athlete suffering symptoms of anxiety will inevitably underachieve. The physical and psychological effects experienced will have a negative impact on performance, and continued exposure can lead to burnout, often prompted by growing feelings of dissatisfaction, which can develop into a decision to leave sport completely.

METHODOLOGY

The population of this study comprised of all the players at different level of sports activities from Department of Physical Education. The data was collected by using the Sport Competition Anxiety Questionnaire. **Rainer Martens(1977)**, professor of Physical Education at the University of Illinois, designed The Sport Competition Anxiety Test (SCAT) is a psychometric test to score athletes for trait anxiety, which he calls A-trait. This test aims to be objective, proof against response bias (demand characteristics) and easy to fill in and score. The SCAT was discovered to be high in test and retest reliability ($r = 0.77$). The collected data's were computed by using Analysis of Covariance.

FINDINGS AND ANALYSIS

Table 1
COMPUTATION OF ANALYSIS OF COVARIANCE OF ANXIETY ON SPORTS
PERFORMANCE (PHYSIOLOGICAL, PSYCHOLOGICAL AND BEHAVIOURAL
PERFORMANCES)

Sources of Variance	SS	MS	df	OF	TF
Within Group	529.3	88.2	12	33.13*	5.14
Between Group	5846.2	2923.1	2		10.92

*The obtained f (OF) value was significant at 0.05 level of Confidence

DISCUSSION

Psychometric tests are a good method to measure anxiety, since anxiety is cognition. There are physical side effects of anxiety (somatic state anxiety) that can be picked up with biological measures, but this is very hard to distinguish from arousal. In other words, biological tests for anxiety lack validity, because it may be measuring arousal instead of anxiety. Also, this test helps to measures trait anxiety which is a long lasting disposition; where as biological arousal is temporary and situational.

Psychometric tests are also objective; it means they don't depend on subject's interpretation or opinion. The data result in quantitative measures, its helps the researchers to perform statistical analysis, look for leaning in groups or over time, etc.

CONCLUSION

An alternative for SCAT would be a projective test like the Thematic Apperception Test (TAT). TAT is much more subjective and ideal for producing qualitative data but this is much harder to use because it took maximum time to complete and also less reliable. The distracter questions in the SCAT help avoid demand characteristics than TAT. The SCAT contributes respondents to understand and quick for researchers to score. And widely used test in Sport Psychology, probably because it's so simple for Martens himself has gone on to publish many books on coaching and founded the American Sport Education Program, which endorse physical education in schools and colleges based on psychological principles.

REFERENCE

1. Kumar MS, Woo J (2015) Public debt and growth. *Economica* 82(328): 705-739.
2. Weinberg RS, Gould D (2011) *Foundations of Sport and Exercise Psychology*. (2nd edn), Champaign, Human Kinetics Illinois, USA.
3. Raglin JS, Hanin YL (2000) Competitive anxiety. In: Yuri LH (Ed.), *Emotions in Sport*. Champaign, Human Kinetics, Illinois, USA.
4. Humara M (2001) The relationship between anxiety and performance: A Cognitive behavioral perspective. *The Online Journal of Sport Psychology*.
5. Jarvis M (2002) *Sport Psychology*. Routledge, New York, USA.
6. Martens R, Vealey RS, Burton D (1990) *Competitive Anxiety in Sport*. Champaign, Human Kinetics, Illinois, USA.
7. Cox RH (2007) *Sport psychology: Concepts and applications*. McGraw- Hill Companies Inc., New York, USA.
8. Simon JA, Martens R (1977) S.C.A.T. as a predictor of A-states in varying competitive situations. In: Landers DM, Christina RW (Eds.), *Psychology of Motor Behaviour and Sport* (Vol 2) Human Kinetics, Champaign, Illinois, USA, pp. 146-156.
9. Hann YL (2000) *Emotions in sports*. Champaign, Human Kinetics, Illinois, USA.



EMOTIONAL INTELLIGENCE OF STUDENTS AT HIGHER SECONDARY LEVEL

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ABSTRACT

Emotional intelligence is different from general or common intelligence. It's the ability of an individual to monitor their own emotions, to monitor the emotions of others, to understand the differences between them, and to use all of this information in order to guide their actions. This is about accurately understanding the emotions of one self and others, as well as expressing emotions in a way that's accessible. According to earlier studies, people who have higher emotional skills are more successful in many of life aspects. The fundamental aspects to emotional intelligence such as recognizing emotions, understanding emotions, regulating emotions, using emotions. It is more important for succeeding in work, life and having a better health in general. Emotions have valuable information about relationships, behavior and every aspect of the human life. The study could enhance the Emotional intelligence and the findings of this study may certainly serve as a database for the future research in advanced investigation. Moreover, high emotional abilities tend to develop positive images about the life. The study could enhance the Emotional intelligence and the findings of this study may certainly serve as a database for the future research in advanced investigation.

KEYWORDS: *Emotional Intelligence; Higher Secondary; Students;*

INTRODUCTION

Emotional intelligence (EI) theory provides a view about predicting effective factors in people's lives whether in education or profession. The publication of Goleman's book Emotional Intelligence (1995), asserted the controversial idea that experience and expression of emotions is a domain of intelligence (Schutte, et, al.1998). To date we can talk about two Conceptual models of EI: (1) ability-EI defined as "the ability to perceive and express

Emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and others", and (2) trait-EI defined as a constellation of emotion-related

Self-perceptions which locates at the lower-levels of personality hierarchies (Petrides, 2011). Emotional intelligence can be defined as "understanding one's own feelings, empathy for the feelings of others and regulation of emotion in a way that enhances living. Emotional intelligence may be more important for personal success than IQ. The following four dimensions of emotional intelligence can help teachers and administrators to better understand and support student learning.

1. Understanding
2. Management
3. Empathy
4. Relationships

NEEDS AND SIGNIFICANCE

The aim of education is to develop and organize knowledge and skills in different domains. It must also develop the ability to apply this knowledge fully the help of the emotional intelligence. This helps the individual to feel think and act in a civilized and socialized manner. The goal of education is the formalization of the human person for the fulfillment of his individual and social responsibilities. This is achieved by acquiring academic and personal competence. The holistic development of an individual is attained thoroughly academic excellence and professional competence personal, inter personal and social skills. Holistic development involves participation in our national dream and aspiration and a dedication to promote our professionalism for national development. Emotional intelligence and life satisfaction are need to cope in the today's world.

In the present educational system Emotional Intelligence are not concentrated to develop among today's children with the consideration of importance of E.I on the growth and development children the present study attempts to find out the E.I among higher secondary level of students.

OBJECTIVES

- To study the Emotional intelligence of higher secondary students.
- To study whether the students belong to different group based on gender and medium of study differ significantly in, Emotional intelligence.
- To study whether the students studying in different types of schools differ significantly in Emotional intelligence.

METHODOLOGY

Sample

A random sampling technique was adopted to select the higher secondary school students for collecting the relevant sample for study. The sample size of this study was total 300 students were taken for the study of which 100 from government schools, 100 from government aided school and 100 from private schools. In each category it contains 50 boys 50 girls all the students chosen for the study were studying in higher secondary from vellore district.

Design

In this study was adopted by survey method. The research design is descriptive design.

Tools

A) Emotional intelligence Scale was consist of 34 simple statements. The statements are drawn from emotional intelligence devised by Anukool, Hyde and sanjyotpethe. Statements were rated on the basis of five point scale.

Results

The results of the present study are discussed under the following table.

TABLE
EMOTIONAL INTELLIGENCE OF HIGHER SECONDARY STUDENTS WITH
RESPECT TO GENDER, MEDIUM, TYPES OF SCHOOL

Variable		N	M	S.D	t.value	S.L
Gender	Male	150	136.6	16.0	1.63	N.S
	Female	150	139.8	16.2		
Medium	Tamil	200	140.3	15.0	2.98	S
	English	100	134.0	18.2		
Types of school	Government	100	142.0	14.9	1.62	N.S
	Government Aided	100	134.6	13.9		

From the table the result indicates that there is no difference between male and female in Emotional intelligence. The students whether studied in Tamil Medium had better E.I than studied in English medium. The result indicates that there is no significant difference between Government and Government Aided school students with respect to their Emotional intelligence.

FINDINGS

1. Male students do not differ significantly from the female students in their Emotional intelligence .
2. Tamil medium students differed significantly from the English medium students in their Emotional intelligence .
3. Government school students do not differ significantly from the government aided school students in their Emotional intelligence.

CONCLUSION

The present investigation aimed at analyzing Emotional intelligence with reference to some selected variables like gender, medium and family, types of school. The study indicated significant relationship among some variables and no significant difference for some variables. Students with low emotional intelligence may struggle to focus and have relationships with their peers or may even show aggression. Students with lower emotional intelligence tend to struggle to communicate their feelings with their peers, and in struggling to form friendships with classmates or even relationships with adults. Moreover, high emotional abilities tend to develop positive images about the life. The study could enhance the Emotional intelligence and the findings of this study may certainly serve as a database for the future research in advanced investigation.

REFERENCES

1. Austin, E.J., Saklofske, D.H., Egan, V. (2005). Personality, well-being and health correlates of trait emotional intelligence. *Personality and Individual Differences*, 38 (3), 547–558.
2. Avsec, A., Kavcic , T. (2011). Importance of the Alternative Five and Trait Emotional Intelligence for Agentic and Communal Domains of Satisfaction. *Psychological Topics*, 20 (3), 461-475.
3. Ciarrochi, J., Chan, A.Y.C., Bajgar, J. (2001). Measuring emotional intelligence in adolescents.
4. *Personality and Individual Differences*, 31 (7), 1105–1119.
5. Diener, E., Emmons, R.A., Larsen, R.J., Griffin, S. (1985). The satisfaction with life
6. Scale. *Journal of Personality Assessment*, 49 (1), 71–75.
7. Dong, Q., Urista, M. A., & Gundrum, D. (2008). The impact of emotional intelligence,
8. Self-esteem and self-image on romantic communication over MySpace. *Cyber psychology*
9. *& Behavior*, 11 (5), 577–578.
10. Extremera, N., Fernández-Berrocal, P. (2005). Perceived emotional intelligence and life
11. Satisfaction: Predictive and incremental validity using the Trait Meta- Mood Scale.
12. *Personality and Individual Differences*, 39, 937–948.
13. Gallagher, E.N., Vella-Brodrick, D.A. (2008). Social support and emotional intelligence
14. As predictors of subjective well-being. *Personality and Individual Differences*, 44
15. (7), 1551–1561.
16. Gignac, G.E. (2006). Self-reported emotional intelligence and life satisfaction: Testing
17. incremental predictive validity hypotheses via structural equation modeling (SEM)
18. In a small sample. *Personality and Individual Differences*, 40 (8), 1569–1577.
19. Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.

20. Huebner, S. (2001). Manual for the Multidimensional Students' Life Satisfaction Scale. *University of South Carolina (Department of Psychology Columbia)*, SC 29208.
21. Hayes, A.F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76 (4), 408-420.
22. Kong, F., Zhao, J., You, X. (2012). Emotional intelligence and life satisfaction in Chinese University students: The mediating role of self-esteem and social support. *Personality and Individual Differences*, 53 (4), 1039–1043.
23. Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators*, pp. 3-31. New York: Basic Books (cited by: Extremera, N., & Fernandez-Berrocal, P., 2005. Perceived emotional intelligence and life satisfaction: perceived and incremental validity using the Trait Meta-Mood Scale. *Personality and Individual Differences*, 39, 937-948).
24. Marian, M., Roşanu, G. (2005). Positive causal attributions, social support and self-esteem as predictors of life satisfaction. *Analele Universităţii din Oradea, Fascicula Psihologie*, VIII, 84-96.
25. Naderi, F., Asgari, P., & Roushani, KH. (2010). The relationship between Spiritual Intelligence, Emotional Intelligence, and Life Satisfaction among Senile in Ahwaz City. *New findings in Psychology*. 5(13):127-138.
26. Palmer, B.R., Donaldson, C., Stough, C. (2002). Emotional intelligence and life satisfaction. *Personality and Individual Differences*, 33, 1091–1100.
27. Piaget, J. (1972). *The psychology of intelligence*. Totowa, NJ: Littlefield Adams.
28. Perone, K., Webb, L., Wright, S., Jackson, Z., & Ksiazak, T. (2006). Relationship of spirituality to work and family roles and life satisfaction among gifted adults. *Journal of Mental Health Counseling*, 28 (3), 253-268.
29. Rey, L., Extremera, N., Pena, M. (2011). Perceived Emotional Intelligence, Self-Esteem and Life Satisfaction in Adolescents. *Psychosocial Intervention*, 20 (2), 227-234.
30. Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J., Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25 (2), 167-177.
31. Schutte, N.S., Malouff, J.M., Simunek, M., McKenley, J., Hollander, S. (2002). Characteristic emotional intelligence and emotional well-being. *Cognition and Emotion*, 16 (6), 769-785.
32. Stevens, M.J., Constantinescu, P.-M., Lambru, I., Butucescu, A., Sandu, C.G., Ursulescu, L. (2012). Romanian adaptation of the Satisfaction With Life Scale. *Journal of Psychological and Educational Research*, 20 (1), 17-33.
33. Westaway, M., Martiz, C., Golele, N. (2001). *Life satisfaction and self-esteem of black and white South Africans: a pilot study*. Retrieved on November 21st, 2012 from http://worlddatabaseofhappiness.eur.nl/hap_bib/freetexts/westaway_ms_2001.pdf
34. Wong, C.S., Law, K.S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The Leadership Quarterly*, 13(3), 243–274.
35. Yamawaki, N., Peterson Nelson, J.A., Omori, M. (2011). Self-esteem and life satisfaction as mediators between parental bonding and psychological well-being in Japanese young adults. *International Journal of Psychology and Counselling*, 3(1), 1-8.
36. Zeidner, M., Matthews, G., Roberts, R. D. (2012). The emotional intelligence, health, and

53. Well-being nexus: What have we learned and what have we missed? *Applied*

54. *Psychology: Health and Well-Being*, 4 (1), 1–30. retrieved on November 20th,

55. 2012 from [http://dx.doi.org/ 10.1111/j.1758-0854.2011.01062.x](http://dx.doi.org/10.1111/j.1758-0854.2011.01062.x).



PERCEPTION OF SPECIAL EDUCATIONAL NEEDS (SEN) TEACHERS ON THE AVAILABILITY OF INFRASTRUCTURAL FACILITIES IN THE SPECIAL EDUCATION SCHOOLS

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ABSTRACT

The investigators in this study explored the Infrastructural facilities available in the special schools as perceived by SEN teachers working in the Chennai city of Tamil Nadu State. A survey was carried out among 202 SEN Teachers selected using Simple Random Sampling Technique, working in the special schools meant for children with visual impairment, hearing impairment and mental retardation. The investigators developed and validated a Rating Scale (Infrastructure Facilities Scale -ISFS) to assess the availability of Infrastructural Facilities in special schools. The results revealed that around 90 - 95 percent of the SEN teachers felt that their schools are inaccessible to the facilities like: false roofing that curtail extra noise, adopted play materials, equipment and materials to identify children with different abilities, speech synthesizers for children with disabilities, talking calculators, speech therapy materials, computer assisted instruction and library with current books related to the special education, as they are available in poor and moderate levels. Likewise, more than 80 percent of the SEN teachers perceive that the ISF like magnifying devices and lenses, large print and coloured print materials, embossed teaching learning materials, audio-video materials, ramps/rails and special toilet facilities, overhead projector, physiotherapy and occupational therapy facilities, sensory training materials, mathematical devices and aids like abacus, Taylor frame and graphic aids are in poor and moderate forms in the special schools they are working. Further, the facilities such as - Braille slate and stylus, orientation and mobility materials, facilities to use hearing aids and group hearing aids, low cost multimedia materials, braille typewriters, closed circuit television and the sanitary and drinking water facilities are in poor and moderate form in the special schools as observed by more than 70 to 75 percent of the teachers. In contrast, the facilities like

furniture for seating the staff and the students, uninterrupted power supply, space and proper ventilation in the classroom and the staff rooms, health care amenities for special children within the school and school transport services for disabled students are in moderate and good forms, as perceived by around 80 to 95 percent of the SEN teachers. The implications to improve the infrastructural facilities in the special schools are discussed.

KEYWORDS: Perception, Infrastructural facilities, Special schools, Special Education Teachers

INTRODUCTION

Significance of Infrastructural Facilities in Special Education Schools

The special needs children can achieve on par with the normal children. It is not their disabilities that hamper their achievement but the negative attitudes of professionals, parents, teachers and society in general, inaccessibility to education and, inadequate human and material resources that create barriers to the children with special needs (CWSN). It is essential to arrange continuity in the environment for CWSN in order to provide equal access to education on par with other normal children (Glodsmith and Goldsmith, 1998).

The children with disabilities require accessibility to the special aids and appliances for their daily functioning and learning. Realizing this, the UGC felt the need for ramps, rails and special toilets to suit the special needs of disabled persons and ensured that all existing structures as well as future construction projects in the university / college campuses are made disabled friendly.

Also, through HEPSEN (Higher Education for Persons with Disabilities) scheme, they provided access to procure the devices such as low-vision aids, scanners, mobility devices, etc. in the institutes for enriching the educational experiences of persons with disabilities. These facilities are part and parcel of the special education schools. The special education schools should procure these aids and appliances at any cost to cater to the needs of each child. In special schools or general schools, since independence the Govt. of India is trying to provide adequate infrastructural facilities (ISF) in the form of perfect buildings and other amenities within the school premises apart from providing better trained human and material resources to facilitate the instructional process to make every child to be more inclusive in the classroom.

In India, Acts like Persons with Disability Act, 1995 and programmes like SarvaSikshaAbhiyan (SSA) insisted the schools to provide barrier free environment and universal access for CWSN. This facilities should not only be limited to physical infrastructure but also to curriculum and teaching-learning process.

Further, this Barrier Free Guidelines for CWSN in SSA has given category specific guidelines pertaining to children with moving difficulties/cerebral palsy; children with mental retardation; children with hearing disability and; children with seeing disability apart from general access guidelines related to physical environment and curriculum /teaching-learning process.

A study by Howley (1994) highlighted that lack of infrastructural facilities in schools lead to increase in school dropout rates. Likewise, SarvaShikshaAbhiyan in its National Survey estimates that 36% of children with disabilities are out of school and it is cited that poor health, financial burden and lack of facilities as reasons for keeping them out of school.

Yasin, Toran, Tahar and Bari (2010) in their study found that 42 % of teachers and administrators of special schools perceived insufficient space for learning process. Also, the teachers and administrators felt lack of resources for basic amenities like chairs, tables, fans, teaching aids, LCD, computers and, others. A study in Solomon Islands was reported with total lack of material resources in regular schools to educate students with vision and hearing impairments (Sharma, 2012).

Yasin et al., (2010) observed that the physical infrastructural facilities like space, access to wheelchair and barrier free environment are significant to students with disabilities not only for teaching-learning process but also to attain higher level in education (Lane et al., 1993). (2015) emphasised that:

“The school facilities can have a profound impact on both teacher and student outcomes. With respect to teachers, school facilities affect teacher recruitment, retention, commitment, and effort. With respect to students, school facilities affect health, behaviour, engagement, learning, and growth in achievement”.

Also, they poised that inadequate facilities and resources are essential to assist and attend large number of children with complex needs.

On one hand, good ISF in any school influences student's learning; on the other hand it impacts teacher's performance. Schneider (2002) observed that physical facilities in schools like spatial configuration, noise, heat, and cold, light and, air quality affect student's learning as well as teacher's ability to perform. Further, it is evident that good infrastructure in Indian schools make the teachers 10 % less absent on average than teachers in schools with deficient infrastructure.

Wright and Hobfoll in 2004 highlighted that lack of resources in any organization will lead to stress among employees. The Conservation of Resources theory assumes any loss of such resources having much salience in the performance and recommends for investment in the same. In a similar work, we see absence of such resources be it objects, conditions, or personal as embedded in the social ecology and having chances of 'loss spiral' can diminish possibilities of having a pro work environment (Hall et al., 2006). The incongruence stems from past practices and new situations of resource deficiency can lead to what Bourdieu would term as a kind of 'Hysteresis', be it in the case of students or in the case of teachers (McDonough and Polzer, 2012).

Researchers found that the occupational stress of special education teachers who rated the ISF as poor is higher followed by the teachers who rated ISF as good and moderate; whereas, the job satisfaction of teachers who rated the ISF as poor are lower followed by the teachers who rated the ISF as moderate and good (Poornima, 2012). It's evident that lack in ISF seriously affects not only the CWSN but also SEN teachers' wellbeing and their job performance.

It is significant to note the vital role played by the teacher or group of teachers in operating the resources /facilities that make the classroom / school to be friendlier and barrier free not only to the disabled child but also to the normal peers. This principle is more applicable to the special schools where the programmes are independent and require co-operative efforts to achieve the objectives of the special education programme whether it is for hearing impaired, visually impaired, mentally retarded or persons with multiple disabilities. In this respect, one should note that the quality of instruction in special education not only depends on the quantum of ISF

available, but also on the quality and the extent of utilization apart from sharing of resources effectively by the teachers and the schools, which requires 'whole school approach'.

In any special school, one cannot find only a particular category of the disabled child, but more than one category or multiple disabilities in a child can be observed. If it is the case, the school need not confine to its physical and instructional resources to one category but, geared up to meet the requirements of the disabled child. As such it is inferred that a school must have the resources that cater to the needs of the children with multiple disabilities, thereby better inclusiveness can be achieved at least within the disabled children and keeping this in view, the investigators developed the ISF tool comprising the facilities needed not only to a particular category, but also to all the categories of children in general. Further, the availability of ISF has been assessed by the perception of teachers working in these schools only because they are the people who are seeing, experiencing and using the facilities at every minute in discharging their roles in making the special needs children to be more dependent. Here it is to be noted that the facility may be available but may not be useful, because the facility may not be in good condition or the facility may not be available in reality or facility may be available in good condition but, incompetence of teachers may affect utilization of the facility properly. In some cases, facility available but not in adequate quantity and the centralized control over the utilization of that facility may not be up to the mark. In other sense, the issue is multifaceted, where the teachers are the better judges to say either the facility is available in good, moderate or in poor levels. Hence, the investigator has taken teachers perception as a yardstick to assess the availability of ISF in special schools.

Thus the main objective of the study is to develop a tool to assess the perception of special education teachers on the availability of infrastructural facilities in the special schools they are working in.

METHODOLOGY USED IN THE STUDY

Survey method is used in the study. For the purpose of the study, the investigators developed a Rating Scale (Infrastructure Facilities Scale -ISFS) to assess the availability of Infrastructural Facilities in special schools with 30 statements. To measure the infrastructure facilities available in the special schools, three gradations namely 'Poor', 'Moderate' and 'Good' having the scores of 1, 2 and 3 respectively are given against each statement. A pilot study has been carried out by the investigators to find out the suitability of the test items for the investigation. The reliability of the Infrastructure Facilities Rating Scale (0.86), has been established using Split-half method. The content validity, face validity and intrinsic validity (0.92) have also been established for the developed tool. The sample consisted of 202 teachers working in the schools for the visually impaired, hearing impaired and mentally retarded children in Chennai city of Tamil Nadu State, selected using simple random sampling technique. The statistical techniques like number, percentage, mean, SD and, mean \pm SD are used to analyse the data. The results are tabulated and are discussed hereunder.

RESULTS AND DISCUSSION

Number and Percentage of SEN Teachers Perception on the Availability of ISF in the Special Schools

For identifying the infrastructure facilities in the special schools, the perception of the SEN teachers working in the respective schools is sought using the Infrastructural Facilities Rating

Scale (ISFRS). The number and percentage of 202 SEN teacher's ratings about the level of availability of ISF (poor, moderate and good) has been worked out and the same is presented in table -1.

TABLE- 1
NUMBER AND PERCENTAGE OF SEN TEACHERS WORKING IN THE SPECIAL
EDUCATION SCHOOLS WITH POOR, MODERATE AND GOOD ISF,AS
PERCEIVED BY THEM

S.No.	Nature of Infrastructure Facilities	Level of ISF available in Special Education Schools as Perceived by the Number and Percentage of SEN Teachers		
		Poor ISF	Moderate ISF	Good ISF
(1)	(2)	(3)	(4)	(5)
1.	Braille slate and stylus	135 (66.83)	16 (7.92)	51 (25.25)
2.	Magnifying devices and lenses	125 (61.88)	40 (19.8)	37 (18.32)
3.	Large print and colour print materials	139 (68.81)	26 (12.87)	37 (18.32)
4.	Embossed teaching learning materials	123 (60.89)	43 (21.29)	36 (17.82)
5.	Audio-video instructional materials	82 (40.59)	92 (45.54)	28 (13.86)
6.	Orientation and mobility materials	82 (40.59)	66 (32.67)	54 (26.73)
7.	Ramps / rails and special toilet facilities	85 (42.08)	84 (41.58)	33 (16.34)
8.	Facilities to use Hearing aids and group hearing aids in the classroom	145 (71.78)	8 (3.96)	49 (24.26)
9.	False roofing that facilitates to curtail extra noise	190 (94.06)	12 (5.94)	0
10.	Overhead projector	152 (75.25)	23 (11.39)	27 (13.37)
11.	Computer assisted instruction	51 (25.25)	133 (65.84)	18 (8.91)

12.	Physiotherapy and occupational therapy material	137 (67.82)	24 (11.88)	41 (20.3)
13.	Lighting arrangements in the classroom	28 (13.86)	104 (51.49)	70 (34.65)
14.	Low-cost multimedia	37 (8.32)	142 (70.3)	23 (11.39)
15.	Adapted play materials for the disabled children	123 (60.89)	79 (39.11)	0
16.	Speech therapy materials	62 (30.69)	131 (64.85)	9 (4.46)
17.	Sensory training materials	91 (45.05)	82 (40.59)	29 (14.36)
18.	Equipment and materials to identify children with different disabilities	71 (35.15)	131 (64.85)	0
19.	Speech synthesizers for children with disabilities	153 (75.74)	49 (24.26)	0
20.	Braille Typewriters	114 (56.44)	34 (16.83)	54 (26.73)
21.	Talking calculators and books	166 (82.18)	36 (17.82)	0
22.	Mathematical devices and aids like Abacus, Taylor frame, Graphic aids	128 (63.37)	46 (22.77)	28 (13.86)
23.	Closed Circuit Television (CCTV)	121 (59.9)	31 (15.35)	50 (24.75)
24.	Furniture for seating both the staff and the students	12 (5.94)	83 (41.09)	107 (52.97)
25.	Uninterrupted power supply	12 (5.94)	89 (44.06)	101 (50)
26.	Space and proper ventilation in the classroom and the Staff rooms	34 (16.83)	22 (10.89)	146 (72.28)
27.	Sanitary conditions and drinking water facilities	12 (5.94)	129 (63.86)	61 (30.2)

28.	Health care amenities for special children within the school	0	118 (58.42)	84 (41.58)
29.	School transport facilities for disabled students	39 (19.31)	75 (37.13)	88 (43.56)
30.	Library with current books related to special education	163 (80.69)	39 (19.31)	0

Note: Value mentioned in the brackets are in percentage

Table- 1 shows the number and percentage of teachers, who perceived the infrastructural facilities (ISF) in their special school as poor, moderate and good. From the table, it is noted that out of 30 ISF, 24 facilities are related to the teaching-learning process that helps the teachers to carry out their instructional procedures efficiently. Further, the ISF helps the students with disabilities too for reading, writing and learning the curriculum instructed. Each of these facilities will be made useful in one way or the other. Braille slate and stylus (S.No.1) which are writing media for the visually impaired children are available in good level as perceived by 25 percent of the teachers; whereas 67 and 7 percent of teachers perceived that the same is available in poor and moderate levels respectively. The students having low vision have trouble in reading the normal print. In order to read the books, they use magnifying (enlarge) devices like stand magnifiers, hand held magnifiers etc., and lenses accordingly. It is found that out of 202 teachers, 125 teachers sensed the poor availability of magnifying devices and lenses (S.No.2), while 37 and 40 teachers felt that the same are available in their schools in good and moderate levels respectively. Large print and colour print materials (S.No.3) are used by children having poor / low vision having distraction. Sixty nine percent of teachers figured out that the same material is available in their schools in poor form and 18 percent told that it is in good form and the remaining 13 percent told that it is available in moderate levels in their schools. Embossed teaching-learning materials are used by the teachers and visually impaired student to teach and learn the science related concepts, diagrams, maps etc. Eighteen percent of teachers felt that their school possessed embossed teaching - learning materials (S.No.4) in good form; whereas, 21 and 61 percent of teachers felt that the same is available in moderate and poor levels. Audio-video instructional materials and sensory training materials which make the teaching learning process more interesting are useful to teachers to teach concepts using multi-sensory approach like VAKT-Visual, Auditory, Kinesthetic and Tactile approach. More than 80 percent of special education teachers comprehended that the availability of the audio-video instructional materials (S.No.5) and the sensory training materials (S.No.17) are in poor and moderate levels; whereas, the remaining 14 percent of teachers felt the availability of the same in good form in their schools. Forty one percent of special education teachers figured out that their school had poor orientation and mobility materials (S.No.6); whereas, 33 and 27 percent of special educators felt that their school possess moderate and good level of the same facility respectively. This orientation and mobility materials make the students with disabilities to better utilize their fine and gross motor skills to move around within and outside the school independently. The availability of hearing aids and group hearing aids (S.No.8) that are used to utilize the residual hearing of the hearing impaired children is available in good form in the special schools as observed by 24 percent of special education teachers and, the availability of

the same aid is in poor and moderate form in the special schools as observed by 72 and 4 percent of special education teachers respectively.

The facilities like ramps / rails and special toilets (S.No.7) allow the children with disabilities to access the classrooms, corridors, grounds, toilets, entire school buildings effectively. Over 60 % of schools across India do not have toilet facilities (The Hindu –Young World, 21st March 2008). Only 16 percent of teachers felt that these facilities are available in good form; whereas, the same is available in poor and moderate level for about 84 percent of the teachers. Majority (i.e. 94 %) of teachers felt that the availability of false roofing that facilitates to curtail extra noise (S.No.9) is in poor form in their schools; whereas, 6 percent of teachers felt that the same is available moderately. Seventy five percent of teachers were aware of the availability of overhead projector (OHP) (S.No.10) in their special schools in poor form, while 11 and 13 percent of teachers were aware of the availability of the OHP in the schools at moderate and good levels respectively. Computer assisted instruction-CAI (S.No.11) which is used for the acquisition of the vocabulary and basic concepts, management of behaviour and learning and, solve the perceptual, motivational, communication and behavioural problems, is in poor form in special schools as felt by 25 percent of the SEN teachers. Sixty six and nine percent of the SEN teachers felt that the CAI is available at moderate and good form in their schools respectively. Physiotherapy enhances the motor development while the occupational therapies are essential to strengthen the fine motor skills like writing, cutting etc. Even-though these facilities are essential and can be used in multiple situations, these materials are limited in nature as perceived by majority of the teachers (68 %). Proper lighting arrangements are essential for better visibility and it is a pre-requisite for learning in the classroom. Majority (51 %) of the SEN teachers felt that the lighting arrangements in the classroom (S.No.3) are in moderate form and at the same time 14 and 35 percent of the teachers felt the same is available in poor and good form. The low-cost multimedia (S.No.14) like newspaper, radio, handmade simulative aids etc., are found to be available moderately as per 70 percent of the special education teachers. Only 8 and 11 percent of SEN teachers found that the same is found in poor and good levels respectively.

The CWSN may experience low self-concept and self-esteem in learning situations. To develop better self-concept and self-esteem in children particularly in special children, the school must organize activity oriented programme like play way activities, learning by doing, involving other children with the disabled child in constructing knowledge (i.e.) cooperative learning which enhances the child's self-concept and confidence. For this, the indoor and outdoor games that are suitable to the special children should be organized by adapting the play equipment's. Out of 202 teachers, 123 of them felt that the accessibility to the adapted play materials for the disabled students (S.No.15) are available in poor form, while 39 teachers felt that the same was in moderate form. Many children with disabilities will have problems regarding expressive and receptive languages such as sequencing of sounds and of words, intelligibility of speech and articulation, fluency problems, usage of short phrases or long conversations etc., The materials such as mirrors, soft boards, vibro-tactile aids, tape recorder, cassettes, speech kit, photo articulation test, Peabody picture, vocabulary test materials etc., should be made available for better planning of the speech therapy according to the problems of each child. Unfortunately, only 4 percent of the teachers felt that the facilities for speech therapy (S.No.16) are available in good form, while, 96 percent of special education teachers felt that the same is in moderate and poor levels.

Equipment and materials to identify the children with different disabilities (e.g. Audiometer, Sequin form board test, Raven progressive matrices, Intelligence tests, Optical and Functional assessment items etc.(S.No.18) are available moderately as observed by 131 teachers and are poor as observed by 71 teachers. Majority (76 %) of the teachers felt that the speech synthesizer which allows to convert the text sentences to voice output are available in poor grades, while 24 percent of teachers felt that the same ISF is available in moderate grades (S.No.19). Likewise, the Braille type writers are found in good form in the special schools to meet the needs of the visually impaired students as perceived by 27 percent of teachers; while 56 and 17 percent of SEN teachers felt the same is available in poor and moderate forms. Talking calculators and books facilitates the visually impaired child to listen, hear and learn the textual materials and perform mathematical calculations at his / her own pace and time. Eighty two and eighteen percent of teachers felt that the talking calculators and books (S.No.21) are in poor and moderate grades respectively.

Mathematical devices and aids like abacus, Taylor frame and graphic aids (S.No.22) that help the visually impaired child to solve the mathematical problems involving addition, subtraction, multiplication, division, ratios, fractions etc., are in poor form in special education schools as perceived by 63 percent of SEN teachers, while 14 and 23 percent of teachers felt that those devices are in good and moderate levels in their schools. Closed circuit television (CCTV) helps the special needs students to read the charts, graphs, pictures and text materials. Fifty nine and fifteen percentage of teachers figured out that the CCTV (S.No.23) is available in poor and moderate grades in the special education schools in which they are working and for 25 percent of teachers it was available in good forms. The furniture for sitting both by the staff and the students (S.No.24) are adequate and are in good form as observed by 107 teachers and 46 percent of the teachers felt the same facility is in poor and moderate levels. Un-interrupted power supply (S.No.25) in the school is not a problem for the majority of the special educators (50 %), while 6 percent felt that it is a major problem. Seventy two percent of teachers felt that the space and proper ventilation in class and staffrooms (S.No.26) is good; whereas, 17 percent felt that the space and ventilation in rooms are poor.

Lack of safe water and sanitation can have severe health implications caused by diarrhoea or infections. A proper water and sanitation facility at schools would improve the special needs children's school attendance and their learning quality. It would also prevent dropout rates, especially among girlswith disabilities in higher classes. The sanitary conditions and drinking water facilities (S.No.27) are good in special schools as observed by 30 percent of SEN teachers; while 70 percent observed the same in poor and moderate levels. Majority (58%) of teachers perceived that the health care amenities within the school to look after the special children (S.No.28) are in moderate levels, while 42 percent felt the same in good form in the special schools they are working in. School transport facilities for the disabled students (S.No.29) are found to be good in the special schools as perceived by 44 percent of teachers, while 56 percent of teachers perceive the same facility is in poor and moderate forms in their schools. One hundred and sixty three SEN teachers felt that the library facilities (S.No.30) are inadequate and are in poor grade, while 39 percent of teachers felt that the same facility is available in moderate level.

In nutshell, it can be concluded that around 90 - 95 percent of the SEN teachers felt that their school is inaccessible to the facilities like false roofing that curtail extra noise, adapted play materials, equipment and materials to identify children with different disabilities, speech

synthesizers for children with disabilities, talking calculators, speech therapy materials, computer assisted instruction and the library with current books related to the special education as they are available in poor and moderate levels. Likewise, more than 80 percent of the SEN teachers perceive that the ISF like magnifying devices and lenses, large print and colour print materials, embossed teaching learning materials, audio-video materials, ramps/rails and special toilet facilities, overhead projector, physiotherapy and occupational therapy facilities, sensory training materials, mathematical devices and aids like abacus, Taylor frame and graphic aids are in poor and moderate forms in the special schools they are working. Further, the facilities such as - Braille slate and stylus, orientation and mobility materials, facilities to use hearing aids and group hearing aids, low cost multimedia materials, braille typewriters, closed circuit television and the sanitary and drinking water facilities are in poor and moderate form in the special schools as observed by more than 70 to 75 percent of the teachers working in the special education schools. In addition to these, the facilities like furniture for seating the staff and the students, uninterrupted power supply, space and proper ventilation in the classroom and the staff rooms, health care amenities for special children within the school and school transport services for disabled students are in moderate and good forms as perceived by around 80 to 95 percent of the teachers.

The present findings corroborate with the results of Reddy (2007) where only less than 50 percent of the special education schools are with magnifying devices, large print materials, overhead projector, computer assisted instruction materials and speech synthesizer. Also, Pandey (2009) found that 80 percent of the schools (Govt. and Public schools) did not have essential physical ISF. Further, the same study revealed that 91.9 percent schools do not have teaching learning materials like braille papers, tactile maps, embossed diagram, large print books etc., and also 87.22 percent govt. schools and 72.2 percent public schools did not have educational aids and appliances like Braille duplicators and writers, writing devices etc., for educating CWSN in inclusive classroom. Similarly in Malaysia, teachers perceived to have insufficient ISF in their schools (Yasin et al., 2010).

The results of the present study and other studies reported in this paper grabs the attention of stakeholders in the field of Education to work in order to enhance the ISF in all schools in general and special schools in particular.

Implications to Improve ISF in Special Schools

As majority of SEN teachers perceived lack of access to many of the infrastructural facilities in their schools, it is obligatory on the part of the school management to provide the facilities to transact the curriculum into practice in an effective way to enhance teaching –learning process thereby bringing quality special education programme.

The Govt. and NGO's shall allot funds to procure the infrastructural facilities that are lacking in special education schools. A major Survey exploring the availability and the quality of the resources shall be ascertained periodically by the Research institutions. This will facilitate the Govt., to allocate funds appropriately.

Also, the school management should be aware of the schemes available and should make use of those schemes to enhance the infrastructural facilities in schools. This may be done through awareness and orientation programmes to the school heads or management.

The other ways to enhance the ISF in special schools is through collaborative partnerships with the special schools, University Departments and other research institutions having wide resources pertaining to the education of the CWSN. These resources shall be utilized on sharing basis for the benefit of the CWSN.

Also, the teachers and school management shall motivate and organize the community people to mobilize funds to procure the essential resources. At the same time, teachers concerned and students working in the field of CWSN can develop and prepare teaching-learning resources and other physical facilities using locally available materials and technology.

Enhancing the special schools with the essential ISF may aid in lending a helping hand to the nearby regular schools to teach not only the CWSN but also other students in their schools. Each special school shall act as a resource centre and pave way for the success of the inclusive education in the regular schools.

REFERENCES

1. ----- (2015). Can school infrastructure can make any difference to students. Retrieved from <http://www.edsys.in/can-school-infrastructure-make-any-difference-to-students/>
2. Goldsmith, J. & Goldsmith, L. (1998) Physical Management in Lacey, P. and Ocvry (Eds). People with Multiple Learning Disabilities. London: David Fulton Publishers.
3. Hall, B. J., Rattigan, S., Walter, K. H., & Hobfoll, S. E. (2006). Conservation of resources theory and trauma: An evaluation of new and existing principles. In Petra Buchwald (Ed.), Stress and Anxiety—Application to Health, Community, Work Place, and Education (pp. 230-250). Cambridge Scholar Press Ltd.
4. Howley, C. (1994). The academic effectiveness of small-scale schooling. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED 372 897)
5. Lane, K. E., Swartz, S. L & McNair, L. (1993). Implications of Special Education on School Design: Practically, Not Theory. Educational Facility Planner, 31, 7-9.
6. Pandey, Y. (2009) 'A study of barriers in the implementation of inclusive education at the elementary level', Ph.D. Thesis in Education submitted to the Jamia Millia Islamia, A Central University, New Delhi
7. Peggy McDonough, P. and Polzer, J. (2012). Habitus, Hysteresis, and Organizational Change in the Public Sector, *Canadian Journal of Sociology*, 37(4), 357-379.
8. Poornima, R. (2012). Emotional intelligence, occupational stress and job satisfaction of special education teachers, Discovery Publishing House, New Delhi.
9. Reddy, G.L. (2007) 'Occupational stress, professional burnout and job satisfaction of special education teachers', Major Research Project, Ministry of Social Justice and Empowerment, Govt., of India, New Delhi.
10. Schneider, M. (2002) Do School Facilities Affect Academic Outcomes? Posted by the National Clearinghouse for Educational Facilities. Retrieved from <http://www.ncef.org/pubs/outcomes.pdf>
11. Sharma, U. (2012) Inclusive and Special Education: A way forward in the Solomon Islands. Research Report submitted to Australian Agency for International Development (AusAID). Retrieved from www.inclusive-education-in-action.org/downloads/129EN-attachment-2.pdf

12. Wright, T. A. and Hobfoll, S. T. (2004). Commitment, psychological well-being and job performance: An examination of conservation of resources theory and job burnout, *Journal of Business and Management*, 9 (4), 389-406.
13. Yasin, M.H.M., Toran, H., Tahar, M.M. &, Bari, S. (2010). Special Education Classroom Infrastructure: Teacher's Views . *Procedia Social and Behavioral Sciences*, 7(C), 601-604, doi:10.1016/j.sbspro.2010.10.081



DEVELOPING MENTAL ROTATION SKILL AMONG VISUALLY IMPAIRED STUDENTS

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ABSTRACT

Mental rotation tasks have been used to probe the mental imagery of both sighted and visually impaired people. People who have been blind since birth display a response pattern which is qualitatively similar to that of sighted people but tend to respond more slowly or with a higher error rate. It has been suggested that visually impaired people code the stimulus and its (or their own) motion in a different way from sighted people - in particular, congenitally blind people may ignore the external reference framework provided by the stimulus and surrounding objects, and instead use body-centred or movement-based coding systems. Congenitally blind and partially sighted children were tested for their ability to learn and recall a layout of tactile symbols. Children explored layouts of one, three or five shapes which they then attempted to reproduce. In an aligned condition children reproduced the array from the same position at which they had explored it; in a rotated condition children were asked to move 90° round the table between exploring and reproducing the layout. Thus, representation of self-relevant past or future events may underlie successful rotation. This may explain why it is not related to mental scanning, which relies on developments in visual working memory and distance coding ability.

KEYWORDS: Stimulus, Congenitally, Tactile, Dimensional, Accurately, Surrounding, Progressive

INTRODUCTION

Mental rotation is the ability to rotate mental representations of two dimensional and three dimensional objects. It means code the stimulus and identifies the motion of the object. Mental rotation is involves the ability to rapidly and accurately rotate a two- or three dimensional figure. Tests for mental rotation include the Shepard-Metzler Mental Rotation Test, Flags and Cards, Primary Mental Abilities space, Hidden Patterns, Paper Form Board, Progressive Matrices, and the Vandenberg test. Mental rotation is imagining what a stimulus would look like if it would be rotated. Mental rotation tasks are difficult. Mental rotation on the other hand is the mental ability to manipulate and rotate 2D or 3D objects in space quickly and accurately. Mental rotation is also unique and distinct from the other spatial abilities because it also involves areas associated with motor simulation in the brain.

Importance of Mental Rotation

Mental folding is a complex spatial visualization that involves the *folding* of 2D pattern or material into 3D objects and representations. Compared to other studies, mental folding has had relatively little research and study. In comparison to mental rotation, mental folding is a non-rigid spatial transformation ability which means features of the manipulated object end up changing unlike mental rotation. Mental folding in tasks usually require a series of mental rotations to sequentially fold the object into a new one. Classic mental folding tests are the Paper folding task which is similar to Origami. Origami also requires mental folding by assessing folding a 2D paper enough times to create a 3D figure.

Congenitally blind and partially sighted children were tested for their ability to learn and recall a layout of tactile symbols. Children explored layouts of one, three or five shapes which they then attempted to reproduce. In an aligned condition children reproduced the array from the same position at which they had explored it; in a rotated condition children were asked to move 90° round the table between exploring and reproducing the layout. Both congenitally blind and partially sighted children were less accurate in the rotated condition than in the aligned condition.

Two spatial imagery tasks were presented to the three groups of participants: a mental rotation task and a task of mental representation of the path of a spot. In the first one, participants were asked to explore haptically Thermoformed drawings of shapes and to imagine their rotations, whereas in the second task, participants stored in memory the path of an imagined moving spot and then reproduced this path through raised-line drawings. Both tasks have often been used in recent research on mental imagery.

Participants haptically explored a geometrical Thermoformed shape model, and were then asked to indicate whether four rotated comparison shapes were the same or a mirror image of the model. Only the correctness of the response was considered, since this measure has led to contradictory results in the literature.

The Rotation is a circular movement of an object around a center or point of rotation. A three-dimensional object always rotates around an imaginary line called a rotation axis. If the axis passes through the body's center of mass, the body is said rotate upon it, or spin. A rotation about an external point, e.g. the Earth about the Sun, is called a revolution or orbital revolution, typically when it is produced by gravity.

SAMPLE

The sample selected for the study consisted of 30 students, 15 Visually Impaired and 15 Blind-folded Sighted students. The Visually Impaired students were in the Experimental Group and the Blind-folded Sighted in Control Group.

Assessment of Mental Rotation Skill

The Mental Rotation test the student was given a stimulus and asked to rotate the shape to any of the angles 45° , 90° , 135° , 180° and 225° about their major axis. An example is given in Fig. 3.2 (a) and 3.2(b). Zero degree was considered as reference point.

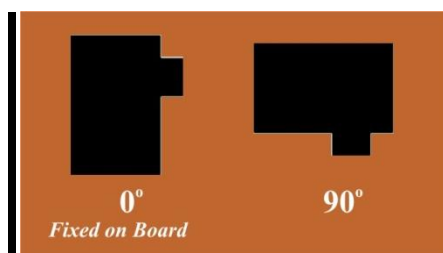


Fig. (a)

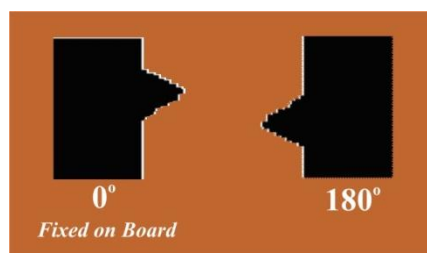


Fig. (b)

The stimulus was fixed to each degree. If the student could rotate the stimulus to the given angle correctly, one score was given if not the score was zero.

Intervention for Mental Rotation Skill

- Angles were taught using hand and also protractor and relief sheet which embosses the diagram.
- Also taught mirror image using hand, shapes and letter 'P', 'R', number '7' and comb.
- Positional concept such as Horizontal, Vertical, Diagonal, Near and far have been taught using 3 dimensional items and 2 dimensional tactile diagrams.
- Time taken for all the activities ranged from 30-45mts.

RESULT

Test	Type of Students	No.	Mean	SD	t-value
Pretest	Visually Impaired (Experimental)	60	1.55	1.11	59.98**
	Blind-folded Sighted (Control)	60	7.60	2.76	
Posttest	Visually Impaired (Experimental)	60	14.02	0.89	3.56**
	Blind-folded Sighted (Control)	60	9.08	3.48	

From the table, it is evident that the *t*-value for Mental Rotation for pretest compared between Visually Impaired and Blind-folded Sighted students is 59.98 with *df*=59 which is significant at 0.01 level. It indicates that the pre scores of Mental Rotation of visually impaired and blind-folded sighted students differ significantly. It means that blind-folded sighted students secured higher score than the visually impaired students in the pretest. In the light of this, the null

hypothesis stated that *“there is no significant difference in mean Mental Rotation of visually impaired and blind-folded sighted students”* is rejected. It may therefore be concluded that blind-folded sighted students showed higher Mental Rotation than the visually impaired students in Pretest.

From the table, it is evident that the *t*-value for **Mental Rotation** for posttest compared between Visually Impaired and Blind-folded Sighted students is 3.56 with *df*=59 which is significant at 0.01 level. It indicates that the post scores of Mental Rotation of visually impaired and blind-folded sighted students differ significantly. It means that visually impaired students secured higher score than the blind-folded sighted students in the posttest. In the light of this, the null hypothesis stated that *“there is no significant differences in mean Mental Rotation of visually impaired and blind-folded sighted students”* is rejected. It may therefore be concluded that the intervention helped improving Mental Rotation of visually impaired students.

CONCLUSION

The aims of the present study were to examine the performance of individuals with visual impairments on spatial tasks. This study stands evidence that participants with visual impairments were competent to perform spatial task systematic training is provided. Developments of visual-working memory may be linked to developments in mental scanning. Additionally, developing abilities in distance coding might allow children to mentally scan in a manner linearly related to the distance in real space, revealing the effect of linearity.

Mental rotation is linked to episodic recall for self-generated events suggesting a link between representing past self-relevant events and representing the end position of a transformed stimulus. Thus, representation of self-relevant past or future events may underlie successful rotation. This may explain why it is not related to mental scanning, which relies on developments in visual working memory and distance coding ability.



NUTRITIONAL PROFILE AND FORMULATION OF HEALTH MIX FOR SELECTED SPORTS PERSON

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ABSTRACT

India has a rich tradition of sports and physical fitness. Performance in any sporting event is the result of a multitude of factors, which includes the amount of training performed, the body's adaptation to the training, motivation level, nutritional status etc. Nutrition is an important component of any physical fitness program. The present study was conducted to assess the nutritional status of selected sports person, formulation and popularization of health mix to improve their performance. A total of 100 players engaged in different sports disciplines from the physical education department of Bharathiar University, Coimbatore were selected through purposive random sampling technique. An interview schedule was developed to assess their nutritional status. The survey results revealed a poor nutritional status among the selected sports person and most of them were anemic. Based on the results of the survey, a health mix was formulated using rice, germinated sorghum, germinated green gram and rice bran. Milk powder and jaggery were added for improving the palatability of the mix. After analyzing the nutrient content and storage stability of the mix, it was popularized among sports person. The formulated mix had a welcoming response among the sports person.

KEYWORDS: *Nutrition, Comparatively, Motivation, Purposive*

INTRODUCTION

A sport is significant part of a society, a country, and every part of our World. In one way or the other, everyone is involved in sport or some sports; “Sport” activity is vital to all round development of the personality. Accomplishment in sports has considerable bearing on a national prestige and morale (Nichols et.al. 2005).

Today Sports has become very competitive. It is not just participation or practice that brings out success to a person. All the coaches, trainers, physical education personnel and doctors are doing their maximum to develop the performance of the players of their country (Amudhan, 2012).

Nourishment plays a chief role in reaching a high level of accomplishment in sports. Athletes world over are in a continuous search of a ideal diet to bring about high level of performance. There is still no sphere of nutrition in which faddism and ignorance are more apparent than in athletics. Athletes often put coaches as a main source of information. The other sources are peers, coaches, electronics and print media. There is a emerging need for sports nutrition counseling and education to facilitate athletes to improve their eating habit (Marquart and Sobel, 2000).

Nutritional status has a direct bearing on the level of physical performance. Hence, physical fitness and training are very much dependent on nutritional status of sports personnel (Beals and Manore, 1998).

In India the sciences of sports nutrition is comparatively new and specific efforts of establishing nutritional principles for a sport persons have gained thrust over the last two decades. Rigorous efforts have been made to strengthen the Indian sport persons.

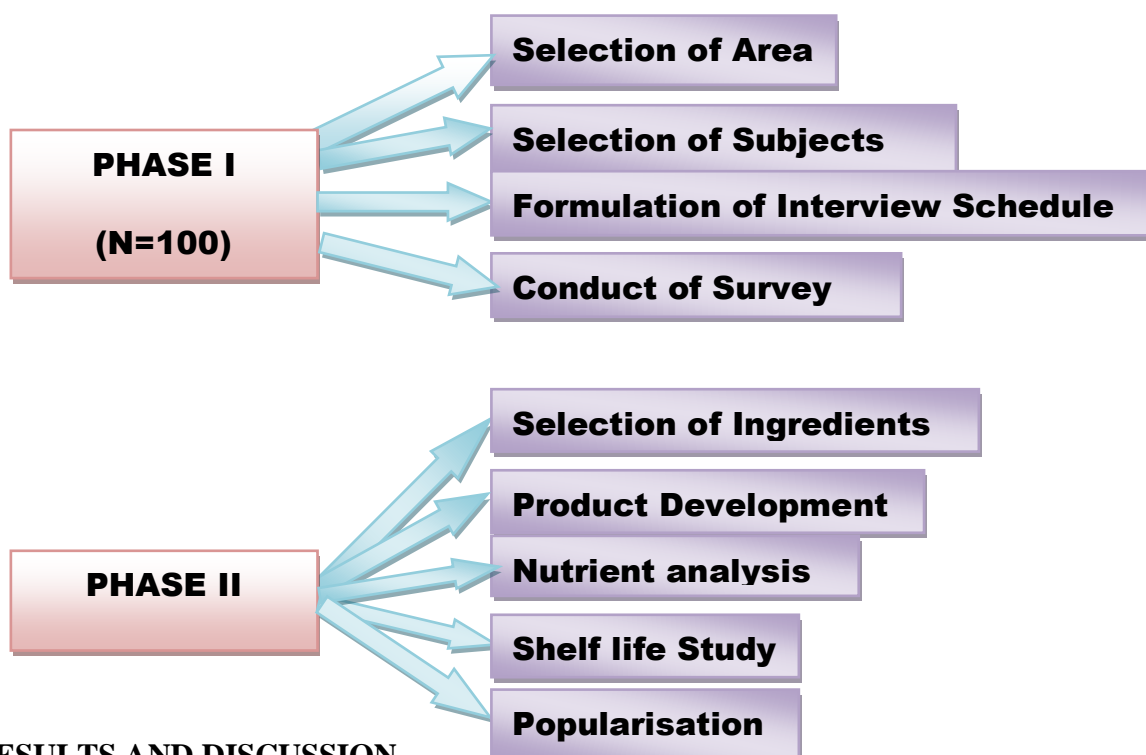
OBJECTIVES

Based on the above discussions, the present study was undertaken with the following objectives:

- to assess the nutritional profile of the selected sports persons
- To formulate health mix from locally available foods.
- to analyse the nutrient content of the mix
- to study the storage stability of the health mix
- to popularise the health mix among selected sports person

METHODOLOGY

The experimental procedure adopted for the present study is given as flow diagram in Figure 1.



RESULTS AND DISCUSSION

PHASE I

The details regarding demographic profile of the selected sports persons is given in Table I.

Table - 1
DEMOGRAPHIC PROFILE OF THE SPORTS PERSONS N=100

S No	Particulars	Percent
1	Age(yrs)	
	20-24	56
	25-29	30
	30-34	14
2	Gender	
	Male	90
	Female	10
3	Religion	
	Hindu	80
	Christian	16
	Muslim	04
4	Type of Family	
	Nuclear	62
	Joint	38
5	Family Income	
	Low Income	22
	Middle Income	58
	High Income	20

From the Table I, it is noted that of the selected subjects, the majority (56%) belongs to 20-24 years, while 30% were within 25-29 years of age and the 14% were between 30-34 years. About 90 % of the selected subjects were males and only 10 % were females. The observations of the present study goes in accordance with Kothekar and Kanitkar (2005) who opined Indian women are disempowered discouraged from participating and prevented from attaining psychological health that comes from pride and pleasure in their physically active bodies. About 80 percent of the subjects were Hindus, 16 per cent were Christians and 4percent were Muslims. India is one of the most religiously diverse nations in the world, with some of the most deeply religious societies and cultures. Religion still plays a central and definitive role in the life of many of its people.

Among the subjects, 62% subjects hailed from nuclear family back ground, while 38% hailed from the joint family system. Economic status of the subjects showed that majority(58%) were from middle income category, while 22 and 20 percent subjects were from low and high income respectively.

The details regarding Body Mass Index of the selected subjects is given in Figure 2.

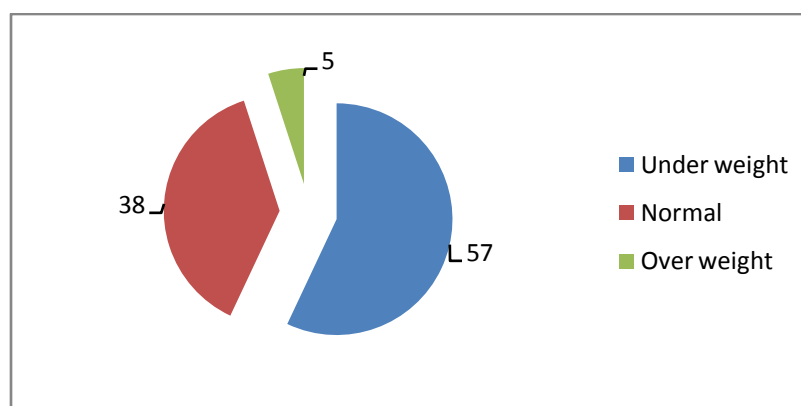


Figure 2

BODY MASS INDEX OF THE SELECTED SUBJECTS

Figure 2 shows thatt, among 100 subjects 57% were under weight, 5% were over weight, while 38%had normal BMI.

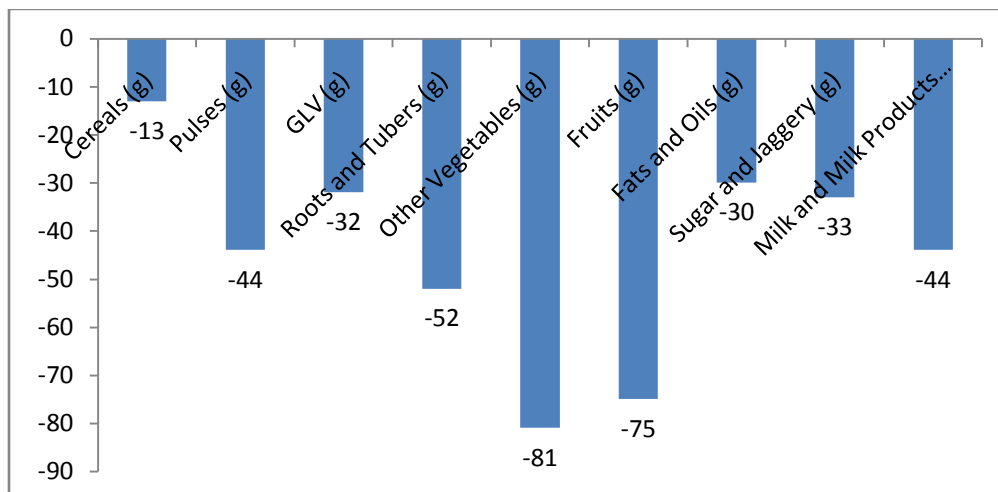
The details regarding the hemoglobin level of the selected subjects is given in Table II

Table - 2
HEMOGLOBIN LEVEL OF THE SELECTED SUBJECTS N=20

S.No	Particulars	Number of subjects	Percent (%)
1	Below normal	19	95
2	Normal	1	5
3	Above normal	0	0

From the Table II it is clear that about 95% of subjects were anemic and 5% had the normal hemoglobin level.

The details regarding mean food and nutrient intake of the selected subjects is given in Figure 3



RDA: ICMR, 2010

Figure 3
MEAN FOOD INTAKE OF SELECTED SUBJECTS (N=20)



Figure 4

MEAN NUTRIENT INTAKE OF SELECTED SUBJECTS (N=20)

RDA: ICMR, 2010

From Figure 3 and 4, it is clearly understood that there is a deficit intake of all food groups when compared to RDA.

4.2PHASE II

The details regarding the mean sensory scores obtained by varying proportions of rice bran incorporated Health Mix given in Table III.

Table - 3
MEAN ORGANOLEPTIC SCORE OBTAINED BY VARYING PROPORTION OF
HEALTH MIX

S.No.	Criteria	Max Score	Standard Mean±SD	Sample A Mean±SD	Sample B Mean±SD	Sample C Mean±SD	Sample D Mean±SD
1	Appearance	5	4.93±0.55	4.60±0.53	4.76±0.64	4.30±0.51	4.30±0.57
2	Colour	5	4.96±0.64	4.66±0.52	4.76±0.55	4.00±0.54	3.86±0.54
3	Texture	5	4.83±0.50	4.73±0.55	4.60±0.62	4.60±0.55	4.36±0.63
4	Flavour	5	4.90±0.67	4.53±0.63	4.76±0.54	4.33±0.61	4.30±0.61
5	Taste	5	4.93±0.66	4.46±0.54	4.83±0.61	4.36±0.41	4.28±0.55
	Overall acceptability		4.91±0.60	4.60±0.55	4.74±0.59	4.32±0.52	4.22±0.58

From the Table III it is observed that the mean overall acceptability of Standard was 4.91 ± 0.60 , sample A was 4.60 ± 0.55 , sample B was 4.74 ± 0.59 , sample C was 4.32 ± 0.52 and sample D was 4.22 ± 0.58 . From the organoleptic scores, sample B which had higher mean overall acceptability score was selected for further study.

The details regarding the nutrient content of standard and selected proportion of Health Mix given in Table IV

Table 4
NUTRIENT CONTENT OF SELECTED PROPORTION OF HEALTH MIX (PER 100 G)

S.No	Nutrient	Standard	Sample
1	Moisture(g)	3.4	3.1
2	Energy (Kcal)	304.71	290
3	Protein (g)	13.5	12.88
4	Carbohydrate (g)	52.8	49.23
5	Iron (mg)	7	12
6	Dietary Fibre(g)	3	8

From the above Table it is noted that there was a negligible decrease in moisture content by 0.3g, energy content by 14.71 calories, protein content by 0.62 g, carbohydrate content by 3.57g, whereas iron and fibre content increased by 5 mg and 5g respectively when compared with the standard.

The details regarding the microbiological analysis Standard and Selected Proportion of health mix on storage is given in Table V

Table 5
MICROBIAL LOAD IN STANDARD AND SELECTED PROPORTION OF
HEALTH MIX ON STORAGE

S.No.	Product	Immediately after preparation		7 th day		15 th day	
		No. of Bacterial Colonies	No. of Organism	No. of Bacterial Colonies	No. of Organism	No. of Bacterial Colonies	No. of Organism
1	Standard	Nil	Nil	Nil	Nil	TFTC	TFTC
2	Sample	Nil	Nil	Nil	Nil	TFTC	TFTC

From the above Table it is noted that no microbial growth was seen in standard and sample till 7th day of storage. On 15th day of storage, the standard and the sample health mix had bacterial colonies, but were too few to count. So it can be concluded that the formulated health mix had a good shelf life of upto 15 days when packed in polyethylene bag and kept in air tight container.

The details regarding ANOVA for Mean Organoleptic Scores Obtained by Standard and Selected Proportion of Health Mix On Storage is given in Figure 5

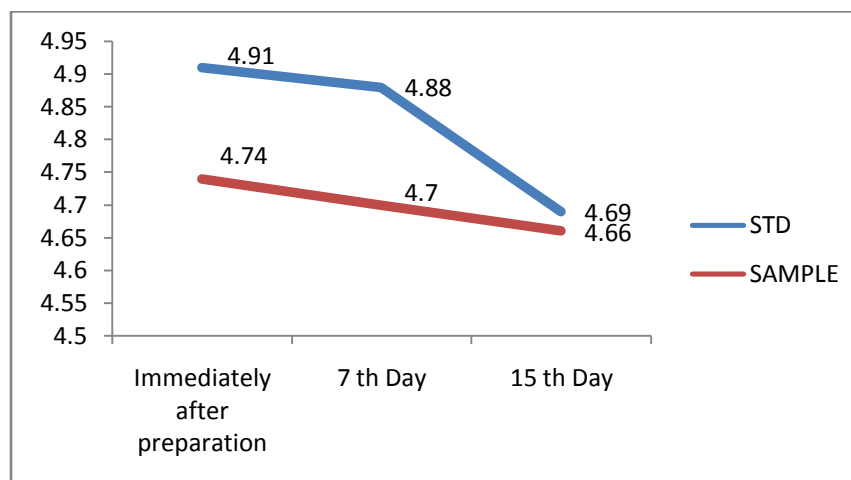


Figure 5

MEAN ORGANOLEPTIC SCORES OBTAINED BY STANDARD AND SELECTED PROPORTION OF HEALTH MIX ON STORAGE

From the above Figure it can be observed that organoleptic score for both standard and the selected sample decreased on storage. However on examining the scores, it can be concluded only a negligible decrease was noted.

Table VI shows the Sensory Score Obtained By health mix among Selected Subjects

Table - 6
SENSORY SCORE OBTAINED BY HEALTH MIX AMONG SELECTED SPORTS PERSON (N=50)

S.No.	Criteria	Percent (%)
1	Like Extremely	56
2	Like Very Much	20
3	Like Moderately	24

All the sports person liked the health mix. About 56 per cent sports person extremely liked (sensory score of 9) the product. About 20 and 24 per cent sports person liked very much (sensory score of 8) and moderately (sensory score of 7) respectively.

Table VII shows the reason for preference of health mix among Selected Sports person

Table - 7
REASON FOR PREFERENCE OF HEALTH MIX AMONG SELECTED SPORTS PERSON (N=50)

S.No	Reason	Percentage %
1	Good taste	62
2	Nutrient food	38

From the above Table it is noted that 62 per cent of selected sports person liked health mix for taste, and 38 per cent of selected sports person liked for its nutritional value.

CONCLUSION

The present study reveals that the nutritional status of the sports persons is very poor with unhealthy dietary practices. Locally available foods suited well in formulation of health mix. Popularization showed a welcoming response among the sports person.

RECOMMENDATION

- The ingredients can be incorporated in various other ready to eat foods and studied for its acceptability.
- The formulated products can be supplemented to sports person to study its impact on their performance.
- Long term shelf life study of the health mix can be carried out.

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BIBLIOGRAPHY

- ❖ Nichols PE, Jonnalagadda SS, Rosenbloom CA, Trinkaus M (2005). Knowledge, attitudes and behaviours regarding hydration of collegiate athletes. *International Journal of Sport Nutrition and Exercise Metabolism*. Vol.15:Ppb515–527

- ❖ Amudhan,(2012), “Comparative analysis of fitness variables among district level handball players at different topographies in tamilnadu”, *Jl of Phy Edu And Sports Sci*, 4 (2)Pp 53-58.
- ❖ Marquart,LF and Sobel, J (2000) “weight loss beliefs , practice, support system for high school wrestlers” *Journal of Adolescent Health* vol 15 .pp410.
- ❖ Beals KA, Manore MM.(1998) Nutritional status of female athletes with subclinical eating disorders. *J Am Diet Assoc*.98:419–25.
- ❖ Kothekar M and Kanitkar J (2005) A Study on Gender Issues in Sports in India, Report from National commission for women, India. P 7.



A STUDY ON THE FACTORS MOTIVATING WOMEN STUDENTS TO PARTICIPATE IN SPORTS

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ABSTRACT

The purpose of the present study was to identify the reasons that restrict women participation in sports and also to motivate the women to take up sports as a profession and to make them to participate in sports. The study was conducted to 120 Chennai women, who were fit in all aspects and fit for analysis,. Both primary and secondary data were used for the study. Primary data a well structured questionnaire and secondary data from books, journals and internet. 150 questionnaire were distributed, in that only 120 responded. SPSS and Excel were used to analyze the results, statistical tool used for analyzing the data are the Percentage analysis, chi-square test with the help of cross-tabulation, rank analysis and weighted average score. Social and cultural factors that also motivate women participation in sports. Participation rates among girls and women are much lower than men; this gender gap is caused by many barriers which can be categorized as Practical, personal, social and cultural. These play a significant role in women and girls attitudes and behavior with recommendations how sports delivers can help to overcome them. Fitness must be made essential for all women students. An array of sports programmes can be started for all the age group of women students. It can be initiated with right efforts and there is lot of scope in the future for women to participate further.

KEYWORDS: Questionnaire, Primary Data,.

INTRODUCTION

A strong women are the ones, building each other up. She in her essence is a gift to the world. Studies showed that physical activity had a positive effect for disease free life. Regular participation in physical activities will yield longer and better quality of life reduced risks of a variety of diseases. Women who begin sports in younger life are more likely to continue being active as they get older. The growing rates of complacent lifestyles and obesity point to the importance of sports participation and the role in influencing later lifestyle choices. Benefits of sports and physical activity improve their physical health, mental health, educational and intellectual development, social inclusion. There are some factors that motivates to participate woman in sports personal factors like age, heredity, obesity, fitness level, motivation, perceived barriers ,competence, attitudes and environmental factors like peer group, family, culture, role models, access, type of activity, school, independent mobility. Social and cultural factors that also motivate women participation in sports. Participation rates among girls and women are much lower than men; this gender gap is caused by many barriers which can be categorized as Practical, personal, social and cultural. These play a significant role in women and girls attitudes and behavior with recommendations how sports delivers can help to overcome them.

Practical barriers are lack of time, lack of money, lack of transport, personal safety, funding, Access to facilities, body images, clothing and equipment, lack of self confidence, parental and adult influence. Social and Cultural barriers are male dominated culture in sports, attitude and prejudices about sexuality, attitude and prejudices about disability, sexual harassment and abuse, female invisibility-media representations and lack of role models in sport.

This study aims to identify the reasons that restrict women participation in sports. It also proposes to list the factors that motivate women participation thereby ensuring that sports can also be taken up as a profession.

METHODOLOGY

To achieve the purpose the study was conducted to 120 Chennai women, who were fit in all aspects and fit for analysis, Both primary and secondary data were

Used for the study. Primary data a well structured questionnaire and secondary data from books, journals and internet.150 questionnaire were distributed, in that only 120 responded. SPSS and Excel were used to analyze the results, statistical tool used for analyzing the data are the Percentage analysis, chi-square test with the help of cross-tabulation, rank analysis and weighted average score.

The questionnaire was structured and questions were close ended in nature. The first part of the questionnaire was designed to collect demographic information of the respondent for a more meaningful interpretation of the result. Such as covered age, education, family income, event involved, experience in sports. The second part was designed to understand the sources of awareness and the motivational factors for women in sports. The third part was designed to understand the barriers involved and suggestion given.

Frame work of analysis was frequency distribution, cross tabulation and chi square test. The results are finally summarized and presented in the form of tables and interpretations.

AGE

Age	Frequency	Percentage
15-20 yrs	12	10
21-25yrs	41	34
Above 25yrs	67	56
Total	120	100

Total respondents 34% belong to the age group of 21-25years. Maximum respondents (56%) belong to the age group above 25yrs. only 10% belong to the age group 15-20yrs

EDUCATIONAL QUALIFICATION

Educational Qualification	Frequency	Percentage
Higher Secondary	13	11
UG/Diploma	44	37
PG	59	49
Other	4	3
Total	120	100

37% of the respondents have done the under graduation. 11% respondents have completed higher secondary and 49% post graduation level.

MONTHLY INCOME

Monthly Income	Frequency	Percentage
Upto 30,000/-	26	22
Rs 30,0001 to Rs 60,000	26	22
Rs 60,001 to Rs 90,000/-	58	48
Above Rs 90,000/-	10	7
Total	120	100

7% respondents have a monthly income greater than Rs 90,000/- 48% respondents ranges between Rs 60,000/- to 90,000/-. 22% respondents ranging between Rs 30,0001 to Rs 60,000/-

SPORTS EVENTS INVOLVED

Events	Frequency	Percentage
Volley Ball	11	9
Basket Ball	15	13
Throw Ball	42	35
Hand Ball	52	43
Total	120	100

43% respondents took part in handball only 13% respondents played Basket Ball and 35% played Throw Ball and 9% Played Volley Ball.

ENTRY LEVEL IN SPORTS

Level	Frequency	Percentage
Elementary School	7	6
Middle School	27	23
Hr Secondary school	60	50
College	26	22
Total	120	100

22% college level, 6% in elementary school level ,50% in hr secondary level were responded.

YEARS OF SPORTS PARTICIPATION

Participation	Frequency	Percentage
1 to 3 years	16	13
3 to 5 years	24	20
5 to 10 years	48	40
Above 10 years	32	27
Total	120	100

40% respondents took part in sports for 5-10 years, 13% respondents took part in sports for 1-3 years, 27% % respondents took part in sports for a period of above 10 years.

Current level of sports participation

Current level	Frequency	Percentage
Zone/District	9	8
Inter zone/divisional	12	10
State	36	30
University	32	27
National	31	25
Total	120	100

SUGGESTIONS TO MOTIVATE MORE WOMEN IN SPORTS

Suggestions	Frequency	Percentage
Better sports infra structure	1	8
Job Guarantee/ scholarship	13	11
Scientific Training	22	18
Government support	39	32
Society Acceptance	33	28
Awareness about sports	12	10
Total	120	100

**CHI SQUARE VALUE FOR AGE AND THE PERSONAL FACTOR THAT MOTIVATES
SPORTS PARTICIPATION- I LIKE TO WIN**

	value	Df	Asymp.Sig (2-sided)
Pearson Chi-Square	2.365a	8	.968

A chi square test was applied to find out if there was any relationship between the age and the personal factor i like to win. The pearson's chi-square test at 5% level of significant was .968.It can be inferred that it is not statistically significant

**CHI SQUARE VALUE FOR AGE AND THE PERSONAL FACTOR THAT MOTIVATES
SPORTS PARTICIPATION- I LIKE TO PLAY**

	value	Df	Asymp.Sig (2-sided)
Pearson Chi-Square	13.435a	8	.058

A chi square test was applied to find out if there was any relationship between the age and the personal factor i like to play. The pearson's chi-square test at 5% level of significant was .058.It can be inferred that it is statistically significant

**CHI SQUARE VALUE FOR AGE AND THE PERSONAL FACTOR THAT
MOTIVATES SPORTS PARTICIPATION- PARTICIPATION IN SPORTS**

	value	Df	Asymp.Sig (2-sided)
Pearson Chi-Square	6.228a	8	.622

A chi square test was applied to find out if there was any relationship between the age and the personal factor participation in sports. The pearson's chi-square test at 5% level of significant was .622.It can be inferred that it is not statistically significant

**RELATIONSHIP BETWEEN INCOME AND THE BARRIERS TO CONTINUED
PARTICIPATION IN SPORTS-DOPING CHI SQUARE TESTS**

	value	Df	Asymp.Sig (2-sided)
Pearson Chi-Square	8.862a	12	.715

A chi square test was applied to find out the relationship between income and the barriers to continued participation in sports-Doping. The pearson's chi-square test at 5% level of significant was .715. It can be inferred that it is not statistically significant

**RELATIONSHIP BETWEEN INCOME AND THE BARRIERS TO CONTINUED
PARTICIPATION IN SPORTS-MISREPRESENTATION OF AGE CHI SQUARE TESTS**

	value	Df	Asymp.Sig (2-sided)
Pearson Chi-Square	28.731a	18	.082

A chi square test was applied to find out the relationship between income and the barriers to continued participation in sports, Misrepresentation of age. The Pearson's chi-square test at 5% level of significant was .082. It can be inferred that it is not statistically significant

CONCLUSION

This study shows that sports participation among women students are comparatively less. This may be due to paucity in motivation factors. Education institutions like schools, colleges etc and sports institution must make a genuine initiative in this direction. Fitness must be made essential for all women students. An array of sports programmes can be started for all the age group of women students. It can be initiated with right efforts and there is lot of scope in the future for women to participate further.

REFERENCES

1. Johnson,L.D.,Delva,J.,& O'Malley,P.M(2007)
2. Joseph,P.T.,(2007)
3. Anoop.K.V.,(2007)



VISUALLY IMPAIRED TEACHERS ATTITUDE TOWARDS TEACHING

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ABSTRACT

Teacher's attitude is an important variable in classroom application of new ideas and novel approaches to instruction. Visually Impaired teachers appear in literature from both Indian and Chinese antiquity. Legal and charitable provisions existed and a few blind persons played a role in epic history. In spite of the problem and some others, teaching profession is still promising for blind people all over the world. Hence a study is planned in this direction which intends to bring forth visually impaired teachers attitude towards teaching. Descriptive survey design was adopted in this study. A sample of 60 visually impaired teachers from schools and higher education programme were interviewed on their attitudes towards teaching profession. The result revealed that visually impaired teachers have high positive attitude towards teaching profession.

KEYWORDS: *Application, Contemporary, Provisions, Instruction, Antiquity*

INTRODUCTION

An attitude is an important concept to understand human behaviour. Attitude means the individual's prevailing tendencies to respond favourably or unfavourably to an object, person or group of people, institutions or events.

Teacher's attitude is an important variable in classroom application of new ideas and novel approaches to instruction (Reinke & Moseley, 2002). Methods must be established that facilitate the development of teacher's attitude that supports contemporary instructional applications of research conclusions and correspond with best practices in education (Kennedy & Kennedy, 1996).

Visually Impaired teachers appear in literature from both Indian and Chinese antiquity. Legal and charitable provisions existed and a few blind persons played a role in epic history, while most blind Asians probably lived quite constricted lives. The 'official' starting dates for formal blind schools are 1874 in China and 1886 in India, but in fact there was well documented educational work with blind people from the 1830s onward and of blind people teaching others to read from the 1850s onward in both countries.(M. Miles, West Midlands, UK)

The most obvious problem they are facing is the lack of handbooks in Braille. Very often they must spend a lot of time transcribing their own handbooks into Braille manually. Assistive technology is still too expensive for the majority of blind people. However, in spite of the problem and some others, teaching profession is still promising for blind people all over the world. Hence a study is planned in this direction which intends to bring forth visually impaired teachers attitude towards teaching.

REVIEW OF STUDIES

Didi Tarsidi (2005) stated in Teaching Profession For Blind People in The Indonesian Context that Teaching seems to be the most favourite profession among blind intellectuals.

National Association for the Blind Teachers 1971) listed 52 subjects handled by visually impaired teachers ranging from elementary to graduate school including languages, economics, psychology, social studies, music and so on

J. Patchaivaziamman (2010) reported that, The quality of teaching mostly depends on the positive attitude of the teacher which is reflected to a very great extent in the quality of students' care taken by the teacher. Since, the teaching profession deals with human minds, teachers have a higher responsibility to the society to produce competent and compassionate students with adequate knowledge and skill. As a result, enormous demands and responsibilities were imposed on teacher's professionalism.

International Commission on Education for the 21st century in their report "Learning the Treasure Within" have identified and suggested four pillars to be constructed for rectifying the various tensions and crises of the modern society. Learning to know, Learning to do, Learning to live together and Learning to be are the four pillars which can strengthen the quality of present education system. A teacher who has a positive attitude towards teaching profession and dedication to teaching can effectively build up these four pillars.

Restad, Raymond O investigation on "A Survey of Attitudes Held by School Administrators toward Blind Teacher Applicants", this study focused on the general attitudes held by school administrators toward the blind teacher. A two-part questionnaire, consisting of 13 descriptive

items and a 10-item attitude scale, was completed by 553 elementary and secondary school administrators in the state of Minnesota. Attitudes were compared on the basis of administrator's age, highest degree held, geographic area from which the degree was earned, the type of school where the administrator was located, the level of his school, the population of the community in which he worked, and the degree of experience he had working with blind teachers. The responses indicated a positive attitude toward blind teachers. The level of education of the administrators and the degree of experience they had working with blind teachers were the two factors which resulted in differentiating attitudes. Administrators with the most education tended to be more positive in their view of employing teachers. Administrators with prior experience with blind teachers also tended to be more positive.

METHOD

The area selected for the study included Coimbatore and Chennai districts of Tamilnadu. Descriptive survey design is adopted in this study. Descriptive research which include selection, surveys and fact-finding enquiries of different kinds were collected. The present state of affairs was discussed. The study adopted purposive sampling technique to select the sample. The sample comprised of visually impaired teachers from Schools and College/University. Gender issues were considered and both male and female teachers were equally selected.

The attitude of visually impaired teachers towards teaching was assessed in the study. An adaptation was made in the standardized scale developed by Dr. Ibtesam Halawah (2008). The scoring was done in the following scheme. The tool consists of 15 items. It is a three point rating scale of the format of 'Agree', 'Neutral' and 'Disagree' that evaluates the attitude of teachers who are visually impaired. These items represented different and broad issues in teaching such as Curriculum, Teaching Regulations, Job Satisfaction and Teachers' Work-load.

Data Collection Procedure

The study was conducted in two phases.

In the first phase the investigator made a survey to identify visually impaired teachers working in various schools and Colleges/University in Coimbatore and Chennai districts of Tamilnadu .

In phase two the investigator administered the Attitude Scale to 60 selected visually impaired teachers to assess their attitude towards their profession. The investigator carried out the assessment as direct interview with the sample selected.

RESULT

TABLE - 1
LEVEL OF VISUALLY IMPAIRED TEACHERS ATTITUDE TOWARDS TEACHING

Level	No.	Percent
Low(<40)	20	33.3
Moderate(41-42)	19	31.7
High(>42)	21	35.0
Total	60	100.0

A qualitative analysis was done to find out the level of Teachers Attitude towards Teaching in terms of low, Moderate and high considering the total score of 45. The results revealed 33% were at low level in Attitude, whereas nearly 32 % were at moderate level and 35% at high positive Attitude.

DISCUSSION

A teacher is central and formal to the whole education system. Therefore, positive attitude towards teaching profession plays an important role. The major objective of this study was to identify and analyze the specific level and attitude towards teaching profession of visually impaired teachers.

Banerjee, Srijita & Behera, S.K. have conducted a study on “The Attitude of Secondary School Teachers towards Teaching Profession in Purulia District of West Bengal, India.” The study revealed that: The attitude of school teachers of Purulia district of West Bengal is neither more favourable nor unfavourable towards Teaching profession that is, satisfactory or average in attitude towards Teaching profession.

The analysis of present study of participants’ responses, showed that the visually impaired teachers’ attitude towards teaching profession is positive. This result is on par with the result of a study on Attitude of Student Teachers towards Teaching Profession by Anupama Bhargava & MK Pathy(2014) that Mean scores indicated that student teachers attitudes towards the teaching profession were positive on average.

Since Teaching profession is a very promising career among visually impaired, positive attitude towards teaching profession can bring the desired quality in the education sector by developing sense of duty, professional competence and by giving them an insight of the student’s needs and problems.

REFERENCES

- Benjamin, A. E. W.; Sahayarani, J. & Stanly, L. S. (2011). A study on attitude towards teaching profession and achievement in teaching competency of B.Ed. trainees. *New Frontiers in Education*, 44(3), 250- 253.
- Bozdogan, A. E. Aydin D. & Yildirim, K. (2007). Teachers’attitudes towards teaching profession. *Kirsehir, j. Educ* .8(2);83 - 97
- Capa, Y.& Cil, N. (2000). Teachers’ Attitudes towards teaching profession An Investigation of different variables. *Hacettepe University J. Educ...*, 18;69-73.
- Cornelius, (2000). Teacher competence associated with intelligence, attitude towards teaching profession and academic achievement of teacher trainees. Unpublished M.Phil Thesis, University of Kerala
- Celikoz, N. & Cetin, F. (2004). Anatolian teacher high school students’ attitudes about the factors affecting the teaching profession. *National Educ.J.*,(162).
- Deborah Kendrick, (1998). *Teachers Who Are Blind or Visually Impaired*, New york, AFB press, Newyork.
- Ghosh, S. and Bairgya, S. (2010). Attitude of secondary school teachers towards teaching profession in relation to some demographic variables, *Edusearch* 1(1), 55 - 58.
- Lewis, S., Corn, A. L., Erin, J. N., & Holbrook, C. (2003). Strategies used by visually impaired teachers of students with visual impairments to manage the visual demands of their professional roles. *Journal of Visual Impairment and Blindness*, 97, 157-168.



BODY IMAGE AND WELL BEING AMONG COLLEGE STUDENTS

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ABSTRACT

The study was conducted on 'Body Image and Well Being among College Students'. One hundred and fifty college students (Boys = 96, Girls = 54) from Dhanalakshmi Srinivasan College of Engineering and NR School of Architecture, Coimbatore, were selected for the study by Purposive Sampling Method and they were administered with Body Image – Acceptance and Action Questionnaire (BI-AAQ) and General Well Being Questionnaire (GWB). The result shows that there is positive correlation between Body Image and Well Being among College Students. Eating disorders can develop during any stage in life but typically appear during the teen years or young adulthood. Classified as a medical illness, appropriate treatment can be highly effectual for many of the specific types of eating disorders. Research shows that homosexual men are more vulnerable to eating disorders than heterosexual men in western society; dissatisfaction with the body has become a cultural norm. Most individuals have experienced the desire to modify some aspect of their appearance, for an example, hair that is too curly, a nose that is too long, or a scar that does not fade. The result showed that there will be no significant difference between male and female subjects in Body Image and Well being with Reference to Gender, Weight, Height, Religion, Area of Residence, Number of Siblings, Family Setup and Family Background and significant difference in well being with reference to Birth Order.

KEYWORDS: administered, significant, appearance,

INTRODUCTION

Relating to people who are between 17 and 25 years old are called Late Adolescents and Young Adults. It is a transitional stage of physical and psychological development that generally occurs during the period from puberty to legal adulthood. It is usually associated with the teenage years, but its physical, psychological or cultural expressions may begin earlier and end later.

College students face real problems on a daily basis during the most awkward growth stages of their lives; between 17 and 19 years old. During this time, college students are exposed to some overwhelming external and internal struggles. College students go through, and are expected to cope with hormonal changes, puberty, social and parental forces, work and school pressures, as well as encountering many conditions and problems. College students feel overwhelmed when faced with unprecedented stresses concerning school and college, and career confusion situations. Those who have absentee parents are exposed to more unfavourable states of life. The issues that college students face today vary but these issues can be dealt with easily if parents and other guardians can understand the symptoms of their problems. Parents need to approach their children, who have been suffering from one or more teenage problems, carefully and in a friendly manner to discuss the problem. Many college students feel misunderstood. It is vital that their feelings and thoughts are validated and that the validation comes from their parents.

The most common problems that college students face today include: Self Esteem and Body Image, Stress, Bullying, Depression, Cyber Addiction, Drinking and Smoking, Teen Pregnancy, Underage Sex, Child Abuse, Peer Pressure and Competition Eating Disorders.

Surprisingly, all of these problems are connected to one another, like a chain reaction. When the college students face self esteem and body image problems, they can become frustrated, resulting in eating disorders. The college students start feeling stress when they are exposed to peer pressure and competition at school, or child abuse at home. Many college students are drinking and smoking in order to relieve the stress. Majority of college students may run away from home, play computer games, and start chatting online with strangers. Computer games and online chatting can result in addiction. Many college students feel further stress when they get bullied online. Others may become easy targets of online predators and once treated badly, they turn to more harmful practices. Those who cannot find love at home or support at schools start to build relationships with friends in school or local areas, resulting in unsafe or underage sex, and possible teen pregnancy. Many become addicted to drugs and harm themselves when they cannot get results. Many college students resort to crimes once they feel they cannot get any help or support.

Eating Disorders describe illnesses that are characterized by irregular eating habits and severe distress or concern about body weight or shape. Eating disturbances may include inadequate or excessive food intake which can ultimately damage an individual's well being. The most common forms of eating disorders include Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder and affect both females and males. Eating disturbances may include inadequate or excessive food intake which can ultimately damage an individual's well being. Eating disorders can develop during any stage in life but typically appear during the teen years or young adulthood. Classified as a medical illness, appropriate treatment can be highly effectual for many of the specific types of eating disorders.

Although these conditions are treatable, the symptoms and consequences can be detrimental and deadly if not addressed. Eating disorders commonly coexist with other conditions, such as anxiety disorders, substance abuse, or depression.

The three most common types of Eating Disorders are as follows: Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder.

The male or female suffering from anorexia nervosa will typically have an obsessive fear of gaining weight, refusal to maintain a healthy body weight and an unrealistic perception of body image. Many people with anorexia nervosa will fiercely limit the quantity of food they consume and view themselves as overweight, even when they are clearly underweight. Anorexia can have damaging health effects, such as brain damage, multi organ failure, bone loss, heart difficulties, and infertility. The risk of death is highest in individuals with this disease.

Bulimia Nervosa is characterized by repeated binge eating followed by behaviours that compensate for the overeating, such as forced vomiting, excessive exercise, or extreme use of laxatives or diuretics. Men and women who suffer from Bulimia may fear weight gain and feel severely unhappy with their body size and shape. The binge eating and purging cycle is typically done in secret, creating feelings of shame, guilt, and lack of control. Bulimia can have injuring effects, such as gastrointestinal problems, severe dehydration, and heart difficulties resulting from an electrolyte imbalance.

Individuals who suffer from Binge Eating Disorder will frequently lose control over his or her eating. However, episodes of binge eating are not followed by compensatory behaviours, such as purging, fasting, or excessive exercise. Because of this, many people suffering from Binge Eating Disorder may be obese and at an increased risk of developing other conditions, such as cardiovascular disease. Men and women who struggle with this disorder may also experience intense feelings of guilt, distress, and embarrassment related to their binge eating, which could influence the further progression of the eating disorder.

Eating Disorders are complex disorders, influenced by a facet of factors. Though the exact cause of eating disorders is unknown, it is generally believed that a combination of biological, psychological, and/or environmental abnormalities contribute to the development of these illnesses.

The highest concern in the treatment of eating disorders is addressing any health issues that may have been a consequence of eating disordered behaviours. This would involve weight restoration and stabilization, guidance for normal eating, and the integration of an individualized meal plan.

Different forms of psychotherapy, such as individual, family, or group, can be helpful in addressing the underlying causes of eating disorders. Therapy is a fundamental piece of treatment because it affords an individual in recovery the opportunity to address and heal from traumatic life events and learn healthier coping skills and methods for expressing emotions, communicating and maintaining healthy relationships. Some medications may be effective in helping resolve mood or anxiety symptoms that can occur with an eating disorder or in reducing binge eating and purging behaviours.

Depression is more than just the feeling of sadness; it is a medical condition where most people go through periods of feeling persistently downhearted for weeks or months, rather than just a few days. People often assume that depression is a trivial health condition but, that's wrong. It is a real medical illness with genuine causes and symptoms. Avoid food intake that can adversely

affect one's mood such as: Caffeine, Alcohol, Trans fats, Sugar, Refined carbs, Increase intake of mood enhancing nutrients such as Omega-3 fatty acids, keep engaged, spending time with nature, volunteering, caring for pets and develop hobby.

Body image is influenced strongly by self esteem and self evaluation rather than external evaluation. It can, however, be powerfully influenced and affected by cultural messages and societal standards of appearance and attractiveness. Given the overwhelming prevalence of thin and lean female images and strong and lean male images common to all westernized societies, body image concerns have become widespread among adolescents.

Fifty to eighty eight percent of adolescent girls feel negatively about their body shape or size, 49% of teenage girls confirms that they know someone with an eating disorder. Only 33% of girls say they are at the "right weight for their body", while 58% want to lose weight, 9% want to gain weight. Females are much more likely than males to think their current size is too large (66% vs. 21%). Over one third of males think their current size is too small, while only 10% of women consider their size too small. Survey reveals that 30% of older adolescents considered that their current size acceptable to them, 85% of females and 95% of males considered their current size socially acceptable by others, 85% of young women worry "a lot" about how they look and twice as many males as females say they are satisfied with their appearance.

The American Association of University Women indicated that for girls, "the way I look" is the most important indicator of self worth, while for boys, self worth is based on abilities, rather than looks. Going through puberty can amplify body image concerns. Puberty for boys brings characteristics typically admired by society - height, speed, broadness, and strength. Puberty for girls brings with it characteristics often perceived as less laudable, as girls generally get rounder and have increased body fat. These changes can serve to further enhance dissatisfaction among girls.

An impact on body image as well as psychological health depends on the puberty is earlier or later than peers. Generally, early development for girls and late development for boys present the greatest challenges to healthy body image. Body image relates to a person's perceptions, feelings and thoughts about his or her body, and is usually conceptualized as incorporating body size estimation, evaluation of body attractiveness and emotions associated with body shape and size.

Body image refers to how people see themselves. Distorted body image (also called negative body image) refers to an unrealistic view of how someone sees their body. Like eating disorders, it is seen most commonly in women, but many men also suffer from the disorder. People begin to forming the perceptions of the body's attractiveness, health, acceptability and functionality in early childhood. This body image continues to form as one age and receive feedback from peers, family member, coaches, etc. Personality traits such as perfectionism and self criticism can also influence the development of a negative internalized image of one's body. It is believed that the anorexic/bulimic eating disorders are at least partially the result of negative body image. Unfortunately, many people have skewed or unrealistic body image. They look in the mirror and may see something very different than the real reflection - for example, someone thin may see someone with excess body fat, even though none exists.

Body image is the dynamic perception of one's body - how it looks, feels, and moves. It is shaped by perception, emotions, physical sensations, and is not static, but can change in relation to mood, physical experience, and environment. Because adolescents experience significant physical changes in their bodies during puberty, they are likely to experience highly dynamic

perceptions of body image. This problem can affect people from childhood across the lifespan and are as prevalent in midlife as young adulthood in women. However, beliefs about body image are frequently shaped during late childhood and adolescence so this is a particularly crucial time. Adolescent girls are more prone to body image dissatisfaction than adolescent boys; however the rate of body dissatisfaction in males is rapidly approaching that of females.

People who experience low self esteem and/or have depression, perfectionist tendencies (e.g. people who feel a need for everything in their lives to be perfect), high achievers and people who cognitively are more 'black and white' in their thinking, those who internalize and value beauty ideals, and people who tend to compare themselves to others, are at higher risk of developing body dissatisfaction.

People who are teased for their appearance, especially weight, regardless of actual appearance or weight, are at a greater risk of developing body dissatisfaction than those who are not. When a person in an environment in which central people express body image concerns and model weight loss behaviours, they are more likely to develop body dissatisfaction themselves regardless of actual appearance or weight. In the weight conscious society, larger body size increases risk of body dissatisfaction.

Research shows that homosexual men are more vulnerable to eating disorders than heterosexual men in western society; dissatisfaction with the body has become a cultural norm. Most individuals have experienced the desire to modify some aspect of their appearance, for an example, hair that is too curly, a nose that is too long, or a scar that does not fade. In many cases, these perceived imperfections do not create significant anxiety and have little impact on a person's overall sense of self. Individuals who accept and love their bodies without dwelling on what they believe to be flaws can be said to have a generally positive or healthy body image.

Some people might modify parts of the body they do not like: cover freckles with makeup, use hair loss treatment, work out, and so on. These actions do not necessarily imply one has a negative body image. According to Hatvany (2006) *Licensing Marriage and Family Therapy*, a "healthy body image means an individual is comfortable with the body he has. It does not mean he thinks his body is perfect, rather, that he accepts it and commit to loving and caring for it."

Individuals who have what can be considered a negative or unhealthy body image tend to become preoccupied with what they feel to be bodily flaws and may have a distorted perception of physical features. They may feel uncomfortable in their own bodies; find it difficult to accept the way they look; or experience discomfort, dissatisfaction, shame, or even disgust in relation to their appearance.

Though some may have a predominantly positive body image and others may more often feel negatively about their bodies, body image is categorized into two categories. More accurately, body image can be said to be experienced along a continuum. Most individuals experience different degrees of positive and negative feelings about their bodies at different times. Further, body image is subjective and does not always reflect reality: One's mental image of one's own body may therefore be at odds with what an outside observer sees. The causes for the poor body image problem are Criticism, Incorrect evidence, and Media.

Having a long lasting negative body image can affect both the mental and physical health. People who have a long lasting negative body image are more likely than people with a positive body image to have anxiety, depression, low self esteem, shame, and trouble concentrating take risks

with their sexual health cut themselves off from being with other people socially stop doing healthy activities that require them to show their bodies, such as exercising, having sex, going to the doctor, or swimming suffer from serious mental health problems, such as anorexia, bulimia, over exercising, or overeating. These disorders can be very serious.

Symptoms of unhealthy or negative body image may include obsessive self scrutiny in mirrors, thinking disparaging comments about the body and frequent comparison of one's own shape and size to other people and envy a friend's body or celebrity or media personnel

Recognizing and acknowledging one's feelings and accompanying body sensations will help an individual to become more comfortable with his body and lessens the tendency to suppress feelings and revert to unhealthy, negative inner diatribes to escape uncomfortable feelings. In Cognitive Behavioural Therapy, the irrational thoughts are recognized, analyzed and restructured to more rational self talk. Additionally, dance and movement therapy are often employed to develop a greater trust and appreciation of one's body based upon creating internal experiences, rather than simply evaluated one's body aesthetically.

Mental health is defined as a state of well being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.

People with negative body image can become fixated on trying to change their actual body shape. This can lead to people engaging in unhealthy practices with food and exercise with the hope that the change in body shape will alleviate negative feelings. These practices do not usually achieve the desired outcome (physically or emotionally) and can result in more intense negative feelings of disappointment, shame and guilt, as well as place a person at greater risk of developing an eating disorder.

It is important to remember that an individual cannot change some aspects of his appearance, height, muscle composition and bone structure are determined by the genes. A person can change some things but is important to understand and believe that there is no right or wrong when it comes to body shape or appearance. This can be hard to accept if a person has negative body image however, challenging beauty ideals and learning to accept the body shape is a crucial step towards feeling positively about the weight, shape, size and appearance.

While changing the actual appearance may be difficult and complicated, changing the body image is an achievable goal. The tips to overcome the problems are focus on positive qualities, skills and talents - this can help an individual to learn to accept and appreciate the whole self. A person is much more than just a physical being; say positive things to oneself every day; avoid self talk that is berating or negative; focus on the body; set positive, health related focused goals rather than weight loss related ones - engaging in practices with food and exercises that promote health over weight loss/management is more positive for the overall well being. Remember many people who are normal or underweight are unfit and many physically fit people (think about rugby players) are higher than average in body weight; avoid making body comparisons to others; make a conscious decision about what to read and look at. Common life events that can affect one's mental well being include loss or bereavement, loneliness, relationship problems, issues at work, worry about money and Connecting with others can help us to feel a greater sense of belonging and can help to challenge feelings of loneliness.

The tips to improve well being make time for the people one may personally love; Keeping regular contact with friends and family; Join a group; Drawing, gardening or sport and look for local groups; Talk about the way one's feel; Opening up to a trusted friend or family member; Use peer support; Talk to people who have similar feelings or experiences; Volunteer at a local school or hospice; Giving the time to those that need it can be extremely fulfilling and can help him to look at things from a different perspective.

The five steps can really help to boost the mental well being are connecting with the people around by a person: family, friends, colleagues and neighbours; Take a walk, go cycling or play a game of football; Learning new skills can give an individual a sense of achievement and a new confidence; Even the smallest act can count whether it's a smile, a thank you or a kind word; Be more aware of the present moment, including one's thoughts and feelings, the body and the world around him.

Deb (2015) assessed "The effects of generational status on college adjustment and psychological well being" among South Asian, American college students. One Hundred subjects selected for the study were above 18 years. They were administered by Student adoption to college questionnaire and the Scale of Psychological Well Being (SPWB). Research shows that First Generation College Student (FGSC) experienced higher levels of psychological distress and lower level of Psychological Well Being (PWB). This study found that First Generation College Student were significantly more likely to live and work off campus and spend few hours per week participating in co-curricular activities than their Continuing Generation College Students peers.

Bergeron (2007) explored on "The relationship between body image dissatisfaction and psychological health among young male adults. Three hundred and sixty eight subjects were selected for the study (males). They were administered by General Health Questionnaire, Depression Scale, Rosenberg Self Esteem Scale, The Satisfaction with Life Scale, The Male Body Dissatisfaction Scale, the Drive for Muscularity Scale and examined the relationship between body dissatisfaction and psychological health. Scholars have suggested that body image is an increasingly relevant issue for men. There was also increasing literature suggesting that factors such as muscularity, a central component of body image in men may be related to psychological health.

METHOD

Objectives

- To assess the level of Body Image and Well Being among College Students
- To find out the significant difference in Body Image and Well Being among College Students with Reference to Gender, Weight, Height, Religion, Area of Residence, Birth Order, Number of Siblings, Family Setup, Family Background and Socio Economic Status.

Null Hypotheses

- There will be no significant difference in Body Image and Well Being among College Students with Reference to Gender
- There will be no significant difference in Body Image among College Students with Reference to Weight

- There will be no significant difference in Body Image and Well Being among College Students with Reference to Height
- There will be no significant difference in Body Image and Well Being among College Students with Reference to Religion
- There will be no significant difference in Body Image and Well Being among College Students with Reference to Area of Residence
- There will be no significant difference in Body Image and Well Being among College Students with Reference to Birth Order
- There will be no significant difference in Body Image and Well Being among College Students with Reference to Number of Siblings
- There will be no significant difference in Body Image and Well Being among College Students with Reference to Family Setup
- There will be no significant difference in Body Image and Well Being among College Students with Reference to Family Background
- There will be no significant difference in Body Image and Well Being among College Students with Reference to Socioeconomic Status

Area

The area selected for conducting the research was Dhanalakshmi Srinivasan College of Engineering and NR School of Architecture, Coimbatore. The reason for choosing these areas is as follows:

- Availability of the required number of subjects for the study
- Permission, cooperation and facilities provided by the authorities to conduct the research
- Transport Convenience
- Easy accessibility

One Hundred College Students from Dhanalakshmi Srinivasan College of Engineering and Fifty College Students from NR School of Architecture, Coimbatore, were selected for the study. The age range of subjects was 17-23 years. They were selected by Convenience Sampling starts with a purpose in mind and the subject is thus selected to include based on interest.

Tools

The present research used the following research instruments (tools) for the purpose of collecting the data. **Body Image – Acceptance and Action Questionnaire (BI-AAQ)** constructed and standardized designed by Emily K. Sandoz and Kelly G. Wilson (2006) was used to assess the level of Body Image in the subjects. The questionnaire consists of 29 statements with 7 possible responses with 7 point rating scale that ranges from 1 - Never True, 2 - Very Seldom True, 3 - Seldom True, 4 - Sometimes True, 5 - Frequently True, 6 - Almost Always True and 7 - Always True. The inventory was given to each subject and they were asked to read the statements carefully and choose any one of the responses that applies to them. There is no right or wrong answers. They were asked to do the test honestly and as quickly as possible. Norms are provided by the authors.

General Well Being Questionnaire (GWB) constructed and standardized by Santhosh K. Verma and Amita Verma (1989) was used to assess the level of Well Being in the subjects. The questionnaire consists of 20 items. The inventory was given to each subject and they were asked to tick the statements that they feel applicable to them based on past one month. There is no right

or wrong answers. They were asked to do the test honestly and as quickly as possible. Norms were provided by the author.

Procedure

The research topic was well explored and the hypotheses and objectives were found. One Hundred and Fifty subjects were chosen from Dhanalakshmi Srinivasan College of Engineering and NR School of Architecture, Coimbatore. They were debriefed about the research and administered by Body Image – Acceptance and Action Questionnaire and General Well Being Questionnaire. The scoring is done according to the scoring key and they were interpreted using the norms provided by the author. The results were analyzed and the hypotheses were verified.

Analysis of Data

The data was analyzed statistically using SPSS.

- Mean
- Standard Deviation
- ANOVA
- Correlation

Results and Discussion

The results of the study are analyzed, tabulated and discussed below.

Table 1: Demographic Variables of the College Students
N = 150

Variables	College Students	Number	Percentage
Gender	Male	94	63
	Female	56	37
Weight	30	5	3
	40	38	25
	50	53	35
	60	32	21
	70	19	13
	80	3	2
Height	140	3	2
	150	44	29
	160	43	29
	170	46	31
	180	14	9
Religion	Hindu	94	63
	Christian	20	13
	Muslim	36	24
Area of Residence	Urban	98	65
	Rural	52	35
Birth Order	First	83	55

	Second	48	32
	Third	15	10
	Fourth	1	1
	Fifth	3	2
Number of Siblings	None	10	7
	One	77	51
	Two	45	30
	Three	12	8
	Four	6	4
Family Setup	Nuclear	105	70
	Joint	39	26
	Extended	6	4
Family Background	Educated	116	77
	Uneducated	34	23
Socio Economic Status	Upper	2	1
	Middle	140	93
	Lower	8	5

Percentage are rounded off

Table 1 shows the demographic variables of the subjects. It shows that 63% of the subjects were males and 37% were females, 3% were around 30 kg, 25% were 40kg, 35% were 50kg, 21% were 60kg, 13% were 70kg and 2% were 80kg; 2% were 140cm in height, 30% were 150cm, 29% were 160cm, 31% were 170cm, 9% were 180cm; 63% were Hindu, 13% were Christian and 24% were Muslim; 65% belongs to Urban and 35% belongs to Rural; 55% were first child, 32% were second child, 10% were third child, 1% were fourth child, 2% were fifth child; 7% subjects had no siblings, 51% had one siblings, 30% had two siblings, 8% had three siblings and 4% had four siblings; 70% belongs to nuclear family, 26% belongs to joint family, 4% belongs to extended family; 77% belongs to educated family, 23% belongs to uneducated family; 1% belongs to upper socioeconomic status, 93% belongs to middle socioeconomic status, 5% belongs to lower socioeconomic status.

Table 2: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with reference to Gender N=150

Variables	Gender	Mean	S.D.	F
Body Image	Male	34.85	30.74	2.37 N. S.
	Female	43.25	34.91	
TOTAL		37.99	32.50	
Well Being	Male	11.96	4.55	2.74 N. S.
	Female	10.70	4.46	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 2 shows the Mean, Standard Deviation and F scores for Body Image and Well Being among College Students with reference to gender. The mean value indicates that body image was high among males and well being is slightly higher than females and 'F' value indicates that there is no significant difference among male and female College Students. The Null Hypothesis "There will be no significant difference in Body Image and Well Being among College Students with Reference to Gender" is accepted.

Table 3: Mean, Standard Deviation and F Value of Body Image and Well Being among College Students with reference to Weight N=150

Variable	Weight	Mean	S.D.	F
Body Image	30	40.60	36.10	0.41 N. S.
	40	44.26	34.37	
	50	34.77	31.61	
	60	36.19	32.61	
	70	36.63	33.61	
	80	38.67	22.15	
TOTAL		37.99	32.50	
Well Being	30	10.20	5.76	2.69 N. S.
	40	10.39	4.41	
	50	11.66	4.29	
	60	12.56	4.28	
	70	10.58	4.86	
	80	18.67	2.31	
TOTAL		11.49	4.54	

Table 3 shows the Mean, Standard Deviation and F scores for the Body Image and Well Being for College Students with reference to weight. The mean value of body image indicates that when the weight increases the body image starts decreasing and in well being the weight increases the well being decreases and the 'F' value indicates that there is no significant difference among College Students with reference to weight. The null hypothesis "There will be no significant difference in Body Image and Well Being among College Students with Reference to Weight" is accepted.

Table 4: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with reference to Height N=150

Variable	Height	Mean	S.D	F
Body Image	140	58.00	43.50	0.79 N. S.
	150	43.20	33.63	
	160	36.38	33.17	
	170	34.66	31.22	
	180	33.14	89.79	
TOTAL		37.99	32.50	
Well Being	140	11.33	6.66	0.18 N. S.
	150	11.39	4.42	

	160	11.30	4.70	
	170	11.93	4.62	
	180	10.93	4.34	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 4 shows the Mean, Standard Deviation and F scores for the Body Image and Well Being for College Students with reference to height. The mean value for height increases the body image increases but the well being remains the same but 'F' value indicates that there is no significant difference among male and female College Students. The null hypothesis **"There will be no significant difference in Body Image and Well Being among College Students with Reference to Height"** is accepted.

Table 5: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with reference to Religion N=150

Variable	Religion	Mean	S. D.
Body Image	Hindu	36.85	32.25
	Christian	45.78	38.09
	Muslim	36.34	30.08
TOTAL		37.99	32.50
Well Being	Hindu	11.81	4.30
	Christian	9.75	4.63
	Muslim	11.61	5.00
TOTAL		11.49	4.54

N. S. = Not Significant

Table 5 Mean, Standard Deviation and F Value for the Body Image and Well Being for College Students with reference to religion. The mean value indicates that Hindus and Muslims are in same wave length in body image and well being compared to Christians and 'F' value indicates that there is no significant difference among male and female College Students. The null hypothesis **"There will be no significant difference in Body Image and Well Being among College Students with Reference to Religion"** is accepted.

Table 6: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with Reference an Area of Residence N=150

Variables	Area of Residence	Mean	S.D.	F
Body Image	Rural	39.21	33.24	0.40 N. S.
	Urban	35.68	31.23	
TOTAL		37.99	32.50	
Well Being	Rural	11.54	4.79	0.04 N. S.

	Urban	11.38	4.08	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 6 shows the Mean, Standard Deviation and F Value for Body Image and Well Being among College Students in Area of Residence. The 'F' value indicates that there is no significant difference in the area of residence among male and female College Students in Body Image and Well Being. The null hypothesis "**There will be no significant difference in Body Image and Well Being among College Students with Reference to Area of Residence**" is accepted.

Table 7: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with Reference to Birth Order N=150

Variables	Birth order	Mean	S.D	F
Body Image	First	38.27	32.94	0.89 N. S.
	Second	39.24	33.64	
	Third	27.07	23.17	
	Fourth	72.50	22.32	
	Fifth	53.17	44.30	
TOTAL		37.99	32.50	
Well Being	First	11.05	4.22	3.23 **
	Second	12.90	4.25	
	Third	8.73	5.95	
	Fourth	15.00	4.23	
	Fifth	13.67	3.06	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 7 shows the Mean, Standard Deviation and F scores for Body Image and Well Being among College Students in Birth Order. The mean value indicates that the order of birth I more the body image and well being is high and 'F' value indicates that there was no significant difference in Body Image and there was a significant difference among male and female College Students in Well Being. The null hypothesis "**There will be no significant difference in Body Image and Well Being among College Students with Reference to Birth Order**" is partially accepted.

Table 8: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with Reference to Number of Siblings N=150

Variables	Number of Siblings	Mean	S. D.	F
Body Image	None	37.90	38.39	0.05 N. S.
	One	37.26	33.08	
	Two	38.33	32.57	
	Three	38.67	27.88	
	Four	43.50	33.07	

TOTAL		37.99	32.50	0.71 N. S.
Well Being	None	11.40	3.27	
	One	11.96	4.19	
	Two	11.29	5.17	
	Three	10.00	4.99	
	Four	10.00	5.18	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 8 shows the Mean, Standard Deviation and F scores for Body Image and Well Being among College Students with reference to Number of Siblings. The 'F' value indicates that there is no significant difference among male and female College Students in Body Image and Well Being with reference to number of siblings. The null hypothesis "**There will be no significant difference in Body Image and Well Being among College Students with Reference to Number of Siblings**" is accepted.

Table 9: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with Reference to Family Setup

Variables	Types of Family	Mean	S. D.	F
Body Image	Nuclear	39.63	33.83	0.60 N. S.
	Joint	33.08	28.96	
	Extended	41.08	32.31	
TOTAL		37.99	32.50	
Well Being	Nuclear	11.50	4.75	0.01 N. S.
	Joint	11.46	3.66	
	Extended	11.33	6.68	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 9 shows the Mean and Standard Deviation scores for Body Image and Well Being among College Students in Family Setup. The 'F' value indicates that there was no significant difference among male and female College Students in Body Image and Well Being with reference to Family Setup. The null hypothesis "**There will be no significant difference in Body Image and Well Being among College Students with Reference to Family Setup**" is accepted.

Table 10: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with Reference to Family Background N=150

Variables	Family Background	Mean	S. D.	F
Body Image	Educated	38.62	33.42	0.19 N. S.
	Uneducated	35.82	29.49	
TOTAL		37.99	32.50	
Well Being	Educated	11.70	4.68	1.11 N. S.
	Uneducated	10.76	4.01	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 10 shows Mean, Standard Deviation and F scores for Body Image and Well Being among College Students in Family Background. The 'F' value indicates that there was no significant family background difference among male and female in Body Image and Well Being. The null hypothesis "There will be no significant difference in Body Image and Well Being among College Students with Reference to Family Background" is accepted.

Table 11: Mean, Standard Deviation and F Value of the Body Image and Well Being among College Students with Reference to Socio Economic Status N=150

Variables	Socio Economic Status	Mean	S.D	F
Body Image	Upper	14.50	00.00	1.82 N.S.
	Middle	37.29	31.69	
	Lower	56.13	44.75	
TOTAL		37.99	32.50	
Well Being	Upper	8.00	7.07	1.30 N.S.
	Middle	11.43	4.57	
	Lower	13.38	3.07	
TOTAL		11.49	4.54	

N. S. = Not Significant

Table 11 shows the Mean and Standard Deviation scores for Body Image and Well Being among College Students with reference to Socio Economic Status. The 'F' value indicates that there is no significant difference among male and female College Students in Body Image and Well Being. The null hypothesis "There will be no significant difference in Body Image and Well Being among College Students with Reference to Socio Economic Status" is accepted.

CONCLUSION

The result showed that there will be no significant difference between male and female subjects in Body Image and Well being with Reference to Gender, Weight, Height, Religion, Area of

Residence, Number of Siblings, Family Setup and Family Background and significant difference in well being with reference to Birth Order.

Recommendations

- Counsellors can be appointed in the college to help the students to improve their Body Image and Well Being
- Social Skills Training to be given to the students to lead a healthy and prosperous life

REFERENCES

Bergeron, M. A. (2007). The Relationship between Body Image Dissatisfaction and Psychological Health: An Exploration of Body Image in Young Adult Man (107-116).

Retrieved from

https://etd.ohiolink.edu/!etd.send_file?accession=osu1183499977&disposition=inline, on 12-7-2017.

Deb, M. (2015). The Effects of Generational Status on College Adjustment, Psychological Well Being among South Asian American College Students (101-108). Retrieved from <http://ir.uiowa.edu/cgi/viewcontent.cgi?article=6299&context=etd>, on 10-7-2017

Ekern, J. (2017). Eating Disorders: Causes, Symptoms, Signs & Treatment Help. Retrieved from <https://www.eatingdisorderhope.com/information/eating-disorder>

Grogan, S. (2008). Body Image: Understanding Body Dissatisfaction in Men, Women and Children (2nd Ed.). New Latest Census Data shows Youth Surge: Routledge.

Retrieved from <https://www.helpguide.org/articles/stress/stress-symptoms-signs-and-causes.htm>

Retrieved from <http://dro.deakin.edu.au/eserv/DU:30072847/chung-theassociation-2014A.pdf>, on 13-7-2017.

Retrieved from

http://esource.dbs.ie/bitstream/handle/10788/242/ba_badero_o_2011.pdf?sequence=1, on 9-7-2017.

Retrieved from <http://repositorio.ispa.pt/bitstream/10400.12/2736/1/TES%20DACH1.pdf>, on 12-7-2017.

Retrieved from <http://www.firstpost.com/india/latest-census-data-shows-youth-surge-nearly-41-of-indias-population-is-below-the-age-of-20-2581730.html>

Retrieved from

<http://www.macrothink.org/journal/index.php/jsss/article/viewFile/6843/5646>, on 10-7-2017.

Retrieved from <http://www.webmd.com/anxiety-panic/guide/anxiety-disorders>

Retrieved from

https://deepblue.lib.umich.edu/bitstream/handle/2027.42/93961/sabik_1.pdf?sequence=1, on 13-7-2017.

Retrieved from

https://mspace.lib.umanitoba.ca/bitstream/handle/1993/14438/gupta_charulata.pdf?sequence=1, on 13-7-2017.

Retrieved from <https://www.merriam-webster.com/dictionary/teenage>

Retrieved from

<https://www.ncbi.nlm.nih.gov/m/pubmed/18712205/?i=11&from=/25574864/related>, on 14-7-2017.

Retrieved from <https://www.ncbi.nlm.nih.gov/m/pubmed/22090673/>, on 11-7-2017.

Retrieved from

<https://www.ncbi.nlm.nih.gov/m/pubmed/27925798/?i=2&from=/26995158/related>, on 14-7-2017.

Retrieved from

<https://www.ncbi.nlm.nih.gov/m/pubmed/28203256/?i=12&from=body%20image%20of%20college%20students>, on 11-7-2017.

Retrieved from

<https://www.ncbi.nlm.nih.gov/m/pubmed/28264461/?i=31&from=reviews%20of%20literature%20on%20adjustment%20and%20well%20being>, on 13-7-2017.

Retrieved from

<https://www.ncbi.nlm.nih.gov/m/pubmed/28601701/?i=3&from=body%20image%20of%20college%20students>, on 11-7-2017.

Retrieved from

<https://www.ncbi.nlm.nih.gov/m/pubmed/28603420/?i=2&from=body%20image%20of%20college%20students>, on 11-7-2017.

Retrieved from

<https://www.ncbi.nlm.nih.gov/m/pubmed/28688197/?i=52&from=well%20being%20of%20college%20students>, on 12-7-2017.

Retrieved from <https://www.ncbi.nlm.nih.gov/m/pubmed/8545219/>, on 13-7-2027.

Retrieved from

https://www.researchgate.net/publication/289157867_Body_Image_Eating_Disorders_and_Role_of_Media_among_Indian_Adolescents, on 6-7-2017.

Sandoz, E. K. & Wilson, K. G. (2006). Body Image – Acceptance and Action Questionnaire (BI-AAQ). **Retrieved from**

<https://www.sciencedirect.com/science/article/pii/S0005789417301028>

Verma, S. K. & Verma, A. (1989). General Well Being Questionnaire. **Retrieved from**

http://shodhganga.inflibnet.ac.in/bitstream/10603/6870/8/08_chapter%203.pdf



EFFECTS OF MCT OIL (COCONUT OIL) ON THE LIPID PROFILES AND BODY WEIGHT AMONG ADULTS

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ABSTRACT

The purpose of the study was to find out the effects of coconut oil (MCT oil) on lipid profile, triglycerides and body weight of adults. Participants included individuals aged between 35 and 65. Thirty adults were selected randomly. Informed consent was obtained from all participants. A systematic review and statistical-analysis of randomized group comparing the effects of MCTs after consumption for 45 days was the approach in analysing data for summarizing the objectives of the study and to test the hypothesis. HDL cholesterol, LDL cholesterol, total cholesterol, triglycerides, and body weight were the main factors to be considered. Regular diet patterns of the subjects were not altered except for the consumption of MCT oil. Subjects were advised to consume 15 ml of MCT oil twice daily. (Therefore 30 ml). The results of the study show that the intake of MCTs in the diet could potentially induce modest reductions in body weight and consumption of optimal amount of saturated fat in the form of MCT oil shows modest changes in the lipid profile as well. Long term consumption of MCT oil might make further possible changes in the results positively.

KEYWORDS: Fat, Medium Chain Triglycerides, Lipid Profile, Body Weight, Triglycerides, HDL Cholesterol, LDL Cholesterol, Total Cholesterol Etc.,

INTRODUCTION

Fats are an essential part of our diet and are important for good health. Coconut oil adds a twist of flavour to many popular foods. Coconut oil is high in fat, however, particularly in saturated fat. Although that sounds intimidating, you're supposed to have some fat in your diet. Natural dietary fats are divided according to the source of origin. Saturated fatty acids are the most prevalent in plant and animal fats. Vegetable and fish fats mainly include mono- and polyunsaturated fatty acids. Unsaturated fats are healthier than saturated fats. They come from plants and are found in vegetables, olives, nuts, and seeds. Some fish also contain unsaturated fats.

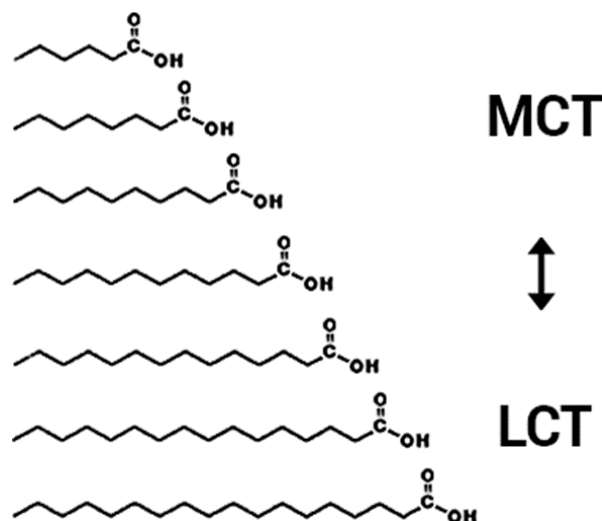
Saturated fats are considered unhealthy and several health authorities recommend limiting their intake in the diet. Animal fat products such as cream, cheese butter, other whole milk dairy products, fatty meats, certain vegetable products contain saturated fats. Coconut oil is a saturated fat. But what's interesting about coconut oil is that, the saturated fats in it are quite heterogeneous in nature in their health effects. In fact, based on their structure, saturated fats can be sub-classified into short chain, medium chain, and long chain fats whereas mono- and polyunsaturated fats are all long chain fats. Short chain fatty acids are considered to have 6 or fewer carbon atoms, **medium chain fatty acids (MCFA)** have 8–12 carbons, and long chain fatty acids (LCFA) generally have 12 or more carbon chains. The short chain fatty acids are produced by the friendly bacteria in the gut and are the main source of energy for the cells lining the gut. On the other hand, medium chain triglycerides are easier to digest and can be burned almost immediately.

Coconut oil contains **medium chain triglycerides (MCT)** that have unique properties to promote health and reduce your risk of disease. Triglyceride is one type of fatty acid. MCTs are extracted from a natural source, like organic coconut, through the processes called fractionation, and Molecular Distillation which separate the lipids. The latter involves no chemicals in the separation of oils but only physical treatments are used to separate the lipids. Further stages of refinement can be used to create 100% pure MCT oil. Unlike other fats, the medium-chain fats found in coconut oil are **directly** absorbed from the stomach and into the liver, where they are used as fuel, through portal vein. So consuming MCT oil will not increase body weight as it is not stored, and instead, they are immediately used as fuel.

MCT oil can be divided into four subcategories.

1. C6 (also called Caproic acid or Hexanoic acid)
2. C8 (also called Caprylic acid or Octanoic acid)
3. C10 (also called Capric acid or Decanoic acid)
4. C12 (also called Lauric acid or Dodecanoic acid)

Structure of fatty acids



Origin of the problem

Coconut oil being used for generations is one of the basic sources of fat in almost all parts of the country. Nowadays people suffer many diseases due to the wrong consumption of fats. Many adulterated edible oils are found to prevail in the market. Lack of awareness seems the main concern. Our ancestors who used only coconut oil along with some other vegetable oils, stayed yet stronger and healthier than we are. Nowadays, many people suffer cardiovascular diseases, many types of cancer chase us, and many types of diseases prevail which could not be numbered. Coconut oil effectively enhances one's health and fights diseases. This awareness must be created among the consumer group and hence is the origin of this research problem.

OBJECTIVES OF THE STUDY

- Discusses how coconut oil helps in weight loss
- Discusses about how coconut oil is digested and processed by the liver and effectively burned
- Describes the benefits of Medium Chain Triglycerides and how it differs from other fatty acids.
- Discusses the effects of MCTs on lipid profile, triglycerides, and body weight.

HYPOTHESIS

- It was hypothesized that the intake of MCT oil may help in keeping the lipid profile, triglycerides in their optimal level.
- It was also hypothesized that regular intake of MCT oil may show considerable change in the body weight.

REVIEW OF RELATED LITERATURE

Mumme. K and Stonehouse, found that replacement of MCTs with LCTs in the diet could potentially induce modest reductions in body weight. As reported in February 2015 randomized controlled trials were conducted for 3 weeks in healthy adults.

Marie-Pierre St-Onge found that MCT oil can be incorporated into a weight loss program without fear of adversely affecting metabolic risk factors.

Marie-Pierre St-Onge and Robert Ross proved that consumption of diet rich in MCTs results in greater loss of AT compared with LCTs perhaps due to increased energy expenditure and fat oxidation observed with MCT intake. Thus, MCTs may be considered as agents that aid in the prevention of obesity or potentially stimulate weight loss.

METHODOLOGY

Men and women, age 35 to 65 y, were selected randomly and they were made to consume MCT oil for 45 days. All subjects were provided informed consent prior to starting the study. Upon entry into the study, the subjects were put to test of their lipid profile, triglycerides, and their body weight initially before the start of the study. They were counselled to consume 30 ml of MCT oil (15 ml for each consumption) along with their food without heating the oil, twice a day. The regular diet of the subjects was not altered by any means except for the intake of MCT oil. The subjects could continue their own regular diet regime. The intake of other sources of fat also was not altered. The subjects participated in the study did not follow any regular exercise regime. No any further restrictions on the diet pattern and the fitness regime were imposed on the subjects. Therefore, all subjects were counselled to just consume the given oil, along with their regular life routine. Individuals were excluded if they were currently participating in active weight loss with drug treatment or taking any medication known to affect weight. Pregnant or breast-feeding women, patients with hypertension and diabetes were excluded from the study. A systematic review and statistical-analysis of randomized group comparing the effects of MCTs after consumption for 45 days was the approach in analysing data for summarize the objectives of the study and to test the hypothesis.

ANALYSIS OF THE STUDY

Table 1
COMPUTATION OF 'T' RATIO ON CHOLESTEROL
COMPONENTS OF MCT OIL GROUP

Variables		Mean	N	Std. Deviation	Std. Error Mean	T ratio
Total Cholesterol	Pre-Test	210.57	30	28.19	1.06	1.53
	Post Test	119.73		26.65		
HDL Cholesterol	Pre-Test	51.93	30	9.15	1.009	0.072
	Post Test	52.1		9.06		
LDL Cholesterol	Pre-Test	150.1	30	10.02	0.97	3.52*
	Post Test	140.86		10.30		
Triglycerides	Pre-Test	119.53	30	48.52	1.16	0.54
	Post Test	113.13		41.81		
Body weight	Pre-Test	75.63	30	11.87	1.004	0.3074
	Post Test	74.69		11.82		

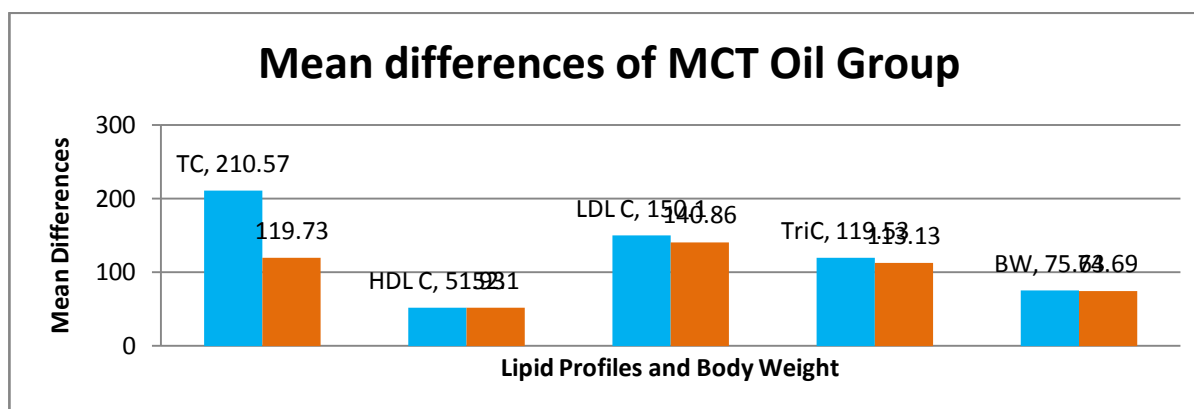


Figure – 1 – MEAN DIFFERENCES OF MCT OIL GROUP

FINDINGS

- Good cholesterol is needed for the healthy function of the body and the brain. It is an essential component of every cell membrane, and helps maintain the health of the cell wall by repairing and replacing damaged cells.
- Less LDL helps to maintain healthy neurological function. The pre and post-test score mean difference was 9.24 is significant at 0.05 level of confidence. It is also needed to make bile and digestive juices to help digest fats.
- Good level of triglycerides is needed to keep ourselves healthy and reduce the risk of heart disease.

DISCUSSION

This study shows that consumption of optimal level of saturated fat in the form of MCT oil, shows modest changes in the lipid profile and the body weight. But yet the effect of MCT oil on LDL cholesterol shows significant results. Since the intake of other fats was not altered among the subjects, substantial results were not obtained in other components, however the results show modest changes in all the variables measured. As the study period was limited to 45 days only, the results seemed to show only minimal changes. However, consumption of MCT oil along with the diet did make significant changes in all the five variables. But if consumed for long term, it might show vast results. A large and well-designed study could confirm the efficacy of MCT and to determine the dosage needed for the management of a healthy body weight and maintenance of good level of lipid profile.

CONCLUSION

Intake of MCT in the diet could potentially induce modest changes in the body weight. Consumption of a diet rich in MCT for 45 days shows modest changes in the lipid profile, triglycerides as well. Results from the present trial suggests that MCTs may be considered as a potential tool in the prevention of weight gain and maintaining good lipid levels.

REFERENCES

1. Christian Nordqvist. (2017). Types of fat: The good and the bad. <https://www.medicalnewstoday.com/articles/141442.php?sr>

2. Eduard de Wilde. (2016).10 Benefits of MCT oil/ Medium chain triglycerides.<https://blog.livehelpfi.com/en/10-benefits-of-mct-oil-medium-chain-triglycerides>.
3. Wikipedia, The free encyclopaedia.https://en.wikipedia.org/wiki/Medium-chain_triglyceride.
4. Sarah Cuff. (2015). Can medium chain triglycerides improve performance? <https://eat2run.com/2015/04/30/can-medium-chain-triglycerides-improve-performance/>.
5. Jeffrey Traister. (2017). Coconut oil and medium chain triglyceride.<https://www.livestrong.com/article/510928-coconut-oil-medium-chain-triglycerides/>.
6. Lana Burgess. (2017). what are the possible benefits of MCT oil.
7. Melodie Anne. (2017). Nutrition facts of coconut oil. <https://www.livestrong.com/article/261372-coconut-oil-nutrition-facts/>.



PERFORMANCE ANALYSIS OF THE INDIAN FOOTBALL TEAM IN THE FIFA U- 17 WORLD CUP

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ABSTRACT

The purpose of the study was to analyse the performance of Indian football team in the FIFAU-17 world cup in India. The FIFAU-17 world cup was stirred by the Lion city cup, that was formed by the Singapore Football association, in 1977, it was the first U-16 tournament in the world .Following FIFA formed FIFAU-16 competition .The first tournament was started In china(1985) and tournament have been played each 2 years since. The current edition of the tournaments was hosted by India for the first time in 2017, which become most attended in the history of the tournament. Every competition comprises of a gathering stage, in which four teams play against each other and standings in the gathering table choose which team progress, trailed by a knockout period of progressive matches where the triumphant group propels through the opposition and the losing group is disposed of. This proceeds until the point that two groups stay to challenge the last, which chooses the competition victor. The losing semi-finalists additionally challenge a match to choose third place. 24 teams are taken an interest in the competitions. India played against USA, Columbia and Ghana, India loosed all the games, England won the title, Spainwon the runners up and Brazil won the third place. The performance analysis includes selected offensive and defensive variables. The primary data were collected by the video analysis with the expert. The findings of the study shows that From the descriptive analysis all the selected offensive variables were Dominated by USA , Columbia and Ghana against Indian team, all the selected defensive variables Indian team performance was slightly better than other teams. Finally I concluded that in FIFA U-17 world cup Indian team played with more defensive strategies and tactics, so Indian team wants to better improvement in offensive strategies and tactics also improve the defensive strategies and tactics.

KEYWORDS: *Offensive And Defensive, FIFA U-17 World Cup.*

INTRODUCTION

Soccer is described as a high-intensity intermittent team activity requiring jumping, shooting, handling, turnings, sprinting, controlling the ball under pressure, running at various speeds, and sliding handles. Many factors, for example, specialized, strategic and physical aptitudes can influence player execution in soccer. Moreover, physical limits that can possibly influence execution amid a match, speed, crest running pace, and high-power discontinuous exercise limit with changes of headings are likely the most determinants. It is by and large expected that as the years progressed, the amusement has created to end up noticeably quicker, with more force and forceful play than seen already. Therefore, players require very much created oxygen consuming perseverance and anaerobic limit.

FIFA U-17 WORLD CUP

The FIFA under 17 world cup was stirred by the Lion city cup, that was formed by the Singapore Football association, Singapore in 1977, it was the first U-16 tournament in the world. Following FIFA formed FIFA U-16 competition. The first tournament was started in China (1985) and tournament became have been played each 2 years because then. The current edition of the tournaments was hosted by India for the first time in 2017, which become most attended in the history of the tournament. Every competition comprises of a gathering stage, in which four teams play against each other and standings in the gathering table choose which team progress, trailed by a knockout period of progressive matches where the triumphant group propels through the opposition and the losing group is disposed of. This proceeds until the point that two groups stay to challenge the last, which chooses the competition victor. The losing semi-finalists additionally challenge a match to choose third place. 24 teams are taken an interest in the competitions.

METHODOLOGY

The purpose of the study is to compare the performance analysis of Indian football team against USA, Columbia and Ghana. The following variables were selected to find out the validity and reliability of the study with the available statistics through observation method.

Table – 1
VARIABLES OF THE STUDY

variables	
offensive	Defensive
shot on target	Blocks
shot of target	Offside trap
goal score	Set pieces breaks
Corner kick	Goalkeeper Saves
Ball possession	

RESULTS AND DISCUSSION

Table - 2
DESCRIPT PERFORMANCE ANALYSIS BETWEEN INDIA VS. USA

INDIA	Variables(offensive)	USA
1	shot on target	8
5	shot of target	9
0	goal score	3
3	Corner kick	3
43%	Ball possession	57%
INDIA	Variables(defensive)	USA
3	Blocks	3
5	Goalkeeper Saves	1
3	Offside trap	0
85%	Set pieces breaks %	100%

From the above table showing that the selected offensive and defensive variables such as shot on target, shot of target, goal scoring, and ball possession was dominated by USA, and in corner kick and blocks both team have equal points. In defensive variables Goalkeeper Saves and offside trap Indian performance was better than USA, in Set pieces breaks USA performance was better than India.

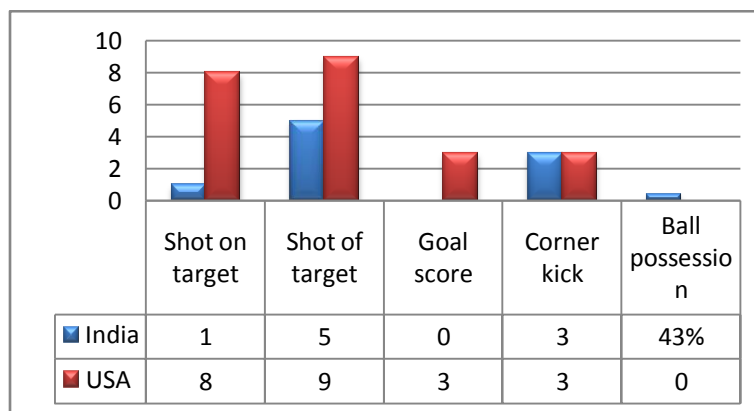


Figure 1-DESCRIPT PERFORMANCE ANALYSIS BETWEEN INDIA VS. USA

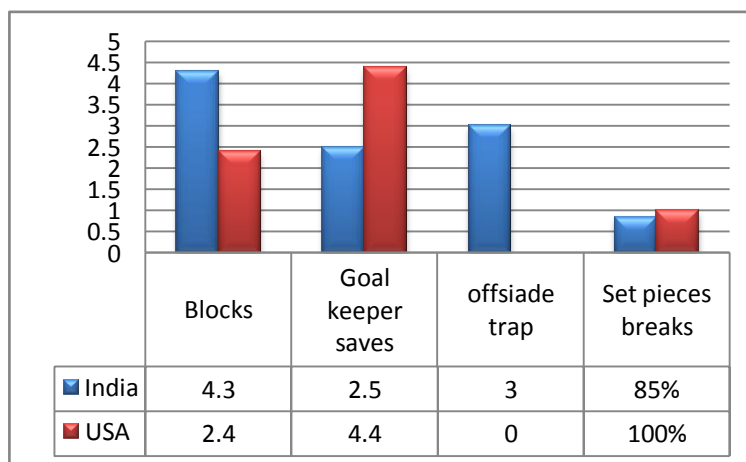


Table - 3
DESCRIPT PERFORMANCE ANALYSIS BETWEEN INDIA VS COLUMBIA

INDIA	Variables(offensive)	Columbia
4	shot on target	7
2	shot of target	8
1	goal score	2
2	Corner kick	8
32%	Ball possession	68%
INDIA	Variables(defensive)	Columbia
3	Blocks	0
5	saves	3
8	Offside trap	3
100%	Set pieces breaks	95%

From the above table showing that all the selected offensive variables was dominated by Columbia except goal scoring. All defensive variables Indian performance was better than Columbia

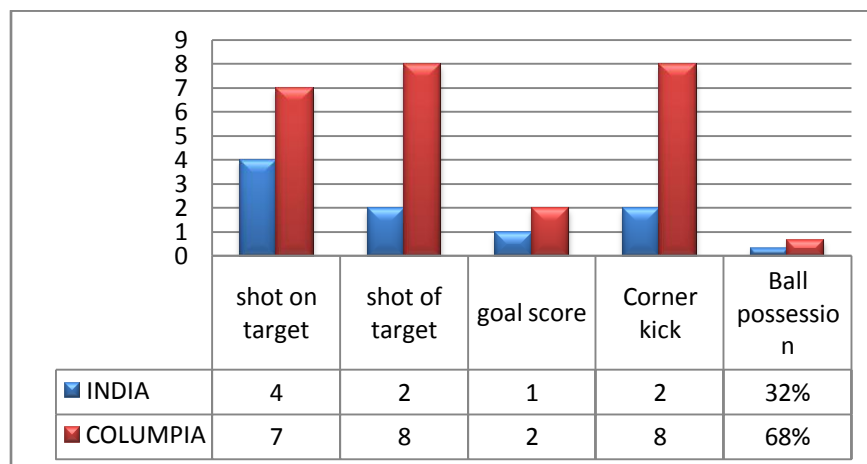


Figure 2-DESCRIPT PERFORMANCE ANALYSIS BETWEEN INDIA VS COLUMBIA

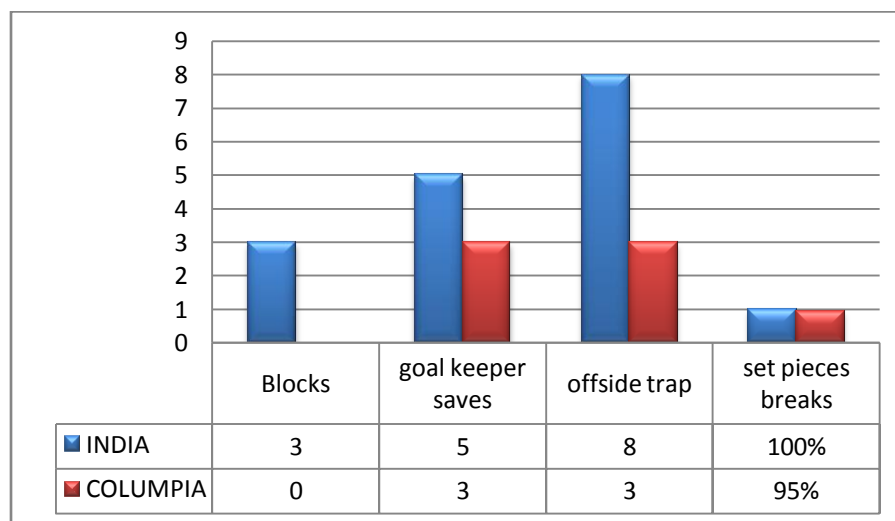


Table – 4
DESCRIPT PERFORMANCE ANALYSIS BETWEEN INDIA VS GHANA

INDIA	Variables(offensive)	Ghana
2	shot on target	10
3	shot of target	12
0	goal score	4
1	Corner kick	5
40%	Ball possession	60%
INDIA	Variables(defensive)	Ghana
5	Blocks	1
6	Goalkeeper Saves	2
0	Offside trap	5
100%	Set pieces breaks	100%

From the above table showing that all the selected offensive variables was dominated by Ghana. In defensive variables Goalkeeper Saves, offside trap and blocks Indian performance was better than Ghana and in Set pieces breaks both team performances was equal.

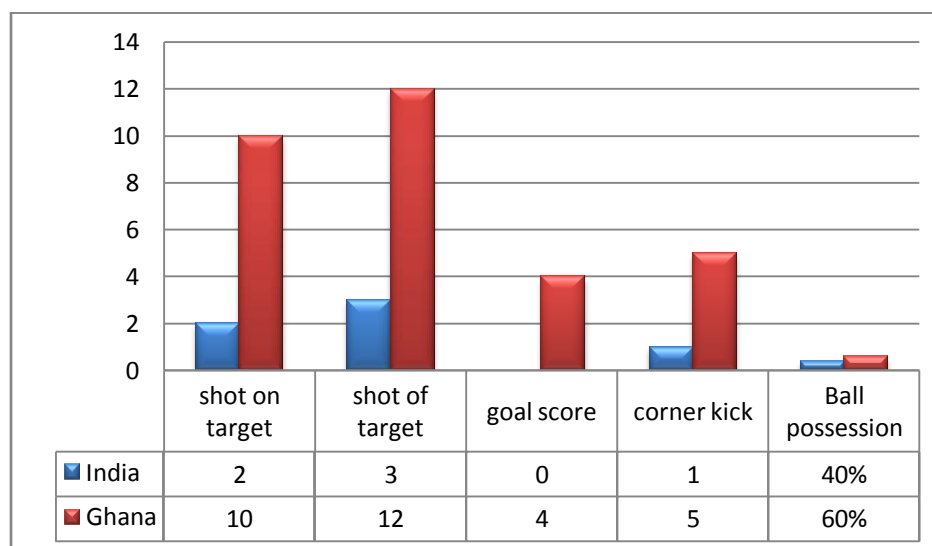
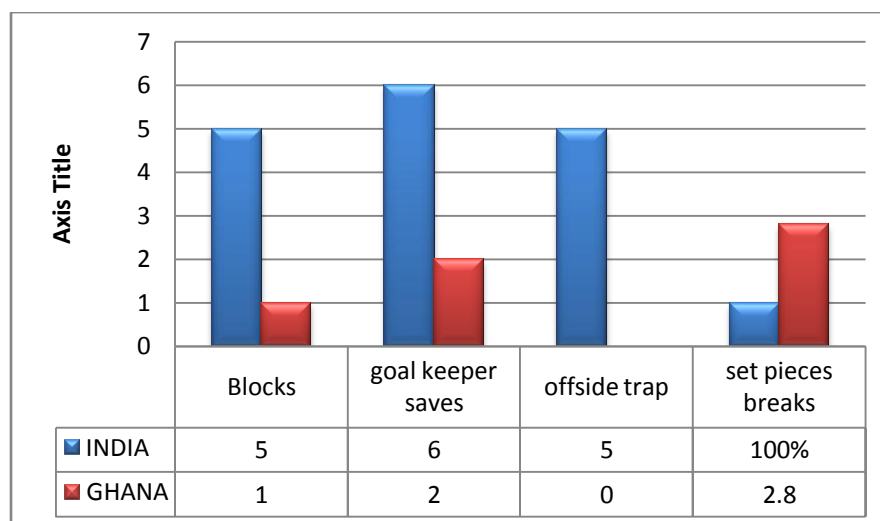


Figure 3-DESCRIPT PERFORMANCE ANALYSIS BETWEEN INDIA VS GHANA



DISCUSSION OF FINDINGS

From the descriptive analysis the selected offensive variables such as shot on target, of target, goal scoring, corner kick and ball possession were dominated by USA, Columbia and Ghana against Indian team and in the selected defensive variables such as blocks and Goalkeeper Saves, Set pieces breaks and offside trap Indian team performance were bettering variably than other teams and defensive variables USA, Columbia and Ghana are dominated against India. Finally I concluded that in FIFA U-17 world cup Indian team played with more defensive strategies and tactics, so Indian team wants to better improvement in offensive strategies and tactics as well as improve the defensive strategies and tactics.

CONCLUSION

- USA dominated in all selected offensive variables
- Columbia dominated in all selected offensive variables except goal scoring
- Ghana dominated in all selected offensive variables
- In selected defensive variables such as blocked, Goalkeeper Saves, offside trap and set pieces breaks Indian team performance was better than other teams

REFERENCES

- 1- Kaka.T.S & Biru.M (1986) Improve Football Techniques Patiala.NSNIS Publication.
- 2-Lago-Peans,C.,Lago –Ballesteros.J. Dellal.A, & Gomes.M. (2010) Games related statistics that discriminated winning, drawing and losing teams from Spanish soccer league.
- 3- Journal of Sports Science and Medicine,9(2),288.
- 4- Luxbacher.J.A (1996).Soccer Steps to Success. Human Kinetic Publisher.
- 5-Arrow.H.Sniezek.J.A.(1996) Hoping, Performance, Learning and Predicting :changes in the Accuracy of Self –Evaluation of Performance. Human Performance,9(1),23-49.
- 6-www.fifa.com/U-17 world cup/teams/index.html
- 7- www.fifa.U-17 world cup Wikipedia



MAXIMIZING THE HUMAN CAPITAL THROUGH SPORTS AND PHYSICAL ACTIVITIES

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ABSTRACT

Human capital is the stock of Knowledge, Habits, Social and Personality attributes, including creativity embodied in the ability to perform labor so as to produce economic value. Human Capital is the backbone of Human Development and Economic Development in every nation. Sports also is an educational tool which fosters cognitive development; teaches social behaviour; and helps to integrate communities. Every nation tries to find the Human Development Index and the basic factors for the Human Development are Healthy living and the fitness level of the mankind. It is very obvious, this is achieved by participating in sports. The sports field, help us not only to develop fitness components but it helps us to draw talents, develop talents and deploy talents. History shows that young men who excelled in the field of sports could prove their worth in the battle field as valiant soldiers in later life and get the laurels of victory. Sports is a category that covers numerous different activities. Many sports involve high degrees of physical activity whilst others focus more on strategy and mental exertion. Some types of sport involve playing in a team whilst others do not. Sports can be played for fun, or at a professional level. Sports is an underrated tool that can improve the lives of future generation, and improve the status of our country as a whole. The Government initiates may not be satisfying but the Non Profit Organizations like STAIRS, India for Sports, Go Sports Foundation, Khel Khel Mein Foundations and so many other organizations have come forward developing a powerful human capital.

KEY WORDS: *Human Capital, Economic Development, Non Profit Organizations*

INTRODUCTION

Human Capital is a term popularized by Gary Becker, an economist from the University of Chicago, and Jacob Mincer, that refers to the stock of Knowledge, Habits, Social and

Personality attributes, including creativity embodied in the ability to perform labor so as to produce economic value (Gary 1993). Human Capital is the backbone of Human Development and Economic Development in every Nation. Mahroum (2007) suggested that at the macro-level, human capital management is about three key capacities, the capacity to develop talent, the capacity to deploy talent, and the capacity to draw talent from elsewhere. Collectively, these three capacities form the backbone of any country's human capital competitiveness. Recent U.S. research shows that geographic regions that invest in the human capital and economic advancement of immigrants who are already living in their jurisdictions help boost their short and long-term economic growth. There is also strong evidence that organizations that possess and cultivate their human capital outperform other organizations lacking human capital (Crooket.al. 2011).

Participation in sports is an 'Investment good' as well as a 'Consumption good' which adds to student's human capital. The value of sports is hard to measure because people who already possess the skills needed to succeed in school and beyond might be more likely to participate in sports.

Sports as tool for Human Development

"Sports is an universal language that can bring people together no matter what their origin, background, religious belief or economic status" says Koffi Annan. Bloom (1985) highlighted three distinct stages of development in the athletic career (Initiation, Development and Mastery) and stressed the influence of environment on the progress of individuals within each of these stages. For example, Bloom highlighted that champion tennis players benefited from being instructed by increasingly able coaches as they progressed.

"Sport is not just physical activity; it promotes health and helps prevent, or even cure, the diseases of modern civilization. It also is an educational tool which fosters cognitive development; teaches social behaviour; and helps to integrate communities" says Thomas Bach,

IOC President. Sports is a category that covers numerous different activities. Many sports involve high degrees of physical activity (for instance, running or rugby) whilst others focus more on strategy and mental exertion (for example, chess is considered to be a sport). Some types of sport involve playing in a team (such as football) whilst others do not (for example, running).

Sports can be played for fun, or (as Olympic athletes do) at a professional level.

Sports as a determinant of fostering Community.

Sports are the sources of recreation. They provide relief and a sense of relaxation in a life of monotony of routine marked by miseries, hardships and hurdles.(i) They instill or infuse a sportive spirit to take up the heavy burden of life in a lighter vein and not to think of life either as a tragedy or a comedy but as the ordinary business of living.(ii) It is very essential to maintain health and physical fitness.(iii) It encourages the growth of team-spirit.(vi) Sports and games bring about various methods of diversions.

Incorporating some sport into our lives is so important because it helps us to stay active and it connects us with other sport lovers across the world. Sports foster a real sense of community and they help us to achieve our personal best every time, no matter if we are just doing them for fun as amateurs or if we are professional athletes. The Olympic Games, held with an interval of 4 years, foster the sense of oneness and the true sportive spirit among nations. It is argued that sports should be made compulsory right from the primary classes and form a part of educational curriculum. Children from their start must realize the utility of sports and games. Drills and other methods of physical fitness should be introduced from the beginning by well trained teachers and coaches.

Sports Culture in Ancient Era

India has a tradition of sports and physical fitness. From the Vedic times, sport, fitness, and competitions have always been part of the Indian culture and folklore. The Epics of Maha Bharatha and Ramayana describe the physical fitness and competitive successes of their heroes.

The five Pandava brothers of Maha Bharatha specialized and excelled in specific physical activities. Dronacharya was the mentor and coach of these five heroes. Infact, the highest award granted by the Government of India for a sports person is the Arjuna Award, named after the famous archer and one of the Pandava brothers. The Highest award for a coach is named the

Dronacharya Award. As far as India is concerned, it has a very old and rich culture of traditional sports (Packianathan et.,al. 2002)

Why sports culture in India is still in infancy?

Sports culture in our country continues to be in infancy and no sincere efforts are being made to rejuvenate this sector. There are a number of factors responsible for the poor sports culture. Some of these factors are natural and some are acquired through environment. Sports spirit and professionalism is lacking in the people of our country which is so important towards promoting a healthy sports culture. Another important factor which is lacking is that as an independent discipline, sports not finding its due place in academics in higher education. The result of this is that research in this field is not promoted. In the absence of research, sports culture cannot be promoted. A holistic approach has to be made, which will encompass all the factors and ground work has to be done to address this issue of poor sports culture. Some kind of respectability has to be restored to promote sports culture so that flag of nation may hoist in the international sports events. Sports lovers also have to rethink and imbibe a sports spirit in them rather than simply be euphonic for winning spree.

Governments initiatives for a powerful Human Capital

The structure and levels of management of sporting activities in India is explained by Chelladurai et.,al (2013). However, to develop a culture of sports, the most important element is a mindset change on the part of parents. Because Indian parents often do not see the important role that sports play in the development of our children, coupled with the fact that currently in India sports is not yet considered as a viable career path, parents generally discourage children from spending too much time on the playing field. In this age of increasing child obesity, it has never been more important to encourage children to turn off the television, shut off the video games, and go outside to play. Sports teach our children valuable life skills that will be carried into adulthood regardless of their ultimate profession. These include perseverance, cooperation, teamwork, leadership, and conflict resolution.

India's Power House of Sporting talents

As per a study published in the British Journal of Sports Medicine, levels of physical activity may start tailing off as early as the age of seven. As children get older, it can be a challenge for them to get adequate daily physical activity. Hence, parents along with schools must take initiatives to inculcate a culture of 'playing' from early childhood of a student so that it follows them throughout their lives. Parents and schools should team up to encourage sports among children. As percentage of children go to school is higher, in this context, there is now an urgency to lay a strong foundation and strengthen physical education and sports in education institutions or schools.

But why should we take steps to encourage physical education and sports?

Better academic performance

The relationship between mind and body has been acknowledged scientifically. Research has proven repeatedly that physical activity can have an impact on cognitive skills and attitudes and academic behaviour, all of which are important components of improved academic performance.

These include enhanced concentration and attention as well as improved classroom behavior

Helps to forge character

When children play with others or play team sports, it creates a sense of belonging in them and encourages them to work with others. It teaches them how to accept a win or lose graciously - building a strong team spirit within. A win – win situation indeed!

Promotes a healthy lifestyle

Today's children may fantasize about growing up to be svelte celebrities, athletes, etc. The irony however, is that children are largely inactive and unhealthy due to the sedentary lifestyles they are leading. Sports and physical education is the best cure for children to lead a healthy lifestyle.

Regular physical activity helps control or reduce the risk of chronic diseases, such as heart disease, hypertension, diabetes and osteoporosis and improves their metabolism. Children who are physically active are more likely to grow into physically active and emotionally balanced adults.

Teaches life skills

By making physical education and sports more engaging and inclusive, one can make children learn respect for themselves and for others. It also teaches them team building skills, critical and creative thinking thereby making them more participative and responsible beings.

Holistic Education

Physical education and sports is an important part of holistic schooling. Physical education as an education tool can contribute significantly to the development and learning progress of children.

It acts as a balance between a student's body and mind and hence schools and parents must give their children sufficient time to play for their all-round development.

Across the globe, implementing sports education programmes is a huge challenge, considering the various constraints we are faced with. Parents and schools together can contribute to the monitoring and support required to keep up momentum of play and sports culture. It is known

that children spend a significant amount of their time in schools. The school therefore is proven to be the best place to introduce changes in the way sports or physical education is handled.

Schools come with a package of a play area, infrastructure, friends, teachers, etc. and hence provide the best environment to get children to play. Parents can contribute by encouraging their children to increase their physical activity to improve their health and displace unhealthy

behaviours. But their role shouldn't just be limited to supporting and encouraging their children to be physically active but by being physically active role models themselves. It's a fact, children who lead active lifestyles are likely to remain active as adults and pass on their healthy lifestyle habits to their own children. Thus, parents who endorse and persuade to be physically fit in their own lives are more likely to pass on these good habits to their children.

CONCLUSION

Adopting a sports culture in early levels of childhood clearly is a significant step. However, to attain this paradigm shift towards physical education and sports, it is of vital important to encourage the acceptance of this sports – oriented culture by parents, schools and community at large, which requires a collaborative effort. It is not the sound and the fury that counts but effort in the right direction to make a mark. Keeping this in view, it is high time that we spot out the values of sports and provide all necessary facilities to draw talent develop talent and deploy talent enable them to maximize the human capital for the growth and the development of the Nation Sports is an underrated tool that can improve the lives of future generation, and improve the status of our country as a whole.

REFERENCES

1. Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen, D. J. 2011. Does human capital matter? A meta-analysis of the relationship between human capital and firm performance.
2. Journal of Applied Psychology, 96(3): 443–456.
3. Gary S. Becker (1993). Human Capital: A Theoretical and Empirical Analysis, with Special
4. Reference to Education (3rd ed.). University of Chicago Press. ISBN 978-0-226-04120-9.
5. Malini Subramaniam (2003) Physical Education for Primary Schools: Role of Play in the development of the child in Preschool Education-Philosophy and Practice pp,3-5
6. Packianthan., Shanmughnathan ., Sheila Stephen Participation in Sports, International Policy perspectives (2011)India, Routledge Taylor & Francis Group pp144-157
7. Packianathan Chelladurai, Usha Nair, & Sheila Stephen (2003) Comparative Sports
8. Development, System, Participation and Public Policy ,Springer, ISBN 978:-1-4614-8904-7 pp211-236.
9. Sami Mahroum (2007). Assessing human resources for science and technology: the 3D framework. Science and Public Policy 34 (7), 489–499. [2]



EFFECTIVENESS OF TEACHING MATHEMATICS

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ABSTRACT

An approach on how to teach mathematics by integrating meaningful multimedia technology to foster the learning process. Specifically the focuses on how the integration of multimedia based teaching. A great advantage of multimedia lessons is particularly evident in chapter basics. Teachers are at the core of any living society. Technologies play an important role in training programme of teachers. Students" accesses knowledge and information through TV, digital media, cable network, internet and social media. The use of technology in education has grown rapidly in recent years. Matematics is universal in a sense that other fields of human thought are not. It fields useful application in business, industry, music, historical scholarship, politics, sports medicine, agriculture, and engineering and the social and natural sciences. "The rapid growth of multimedia technologies over the last decade has brought fundamental changes to educational system (noryhayati and siew 2004)".it will create suitable learning context which enables learner to control the learning environment.

KEYWORDS: *Industry, Music, Historical Scholarship,*

INTRODUCTION

Research into teaching and learning with new technologies is currently a very dynamic and relevant area of educational system. Many of the traditional instructional design probably offer limited utility when we are teaching complex mathematical concepts; one major limitation of traditional teaching methods is the inability to show three dimensional (3-D) graphics. Multimedia technologies are probability one of the most exiting innovation in the information age. “The rapid growth of multimedia technologies over the last decade has brought fundamental changes to educational system (noryhayati and siew 2004)”.it will create suitable learning context which enables learner to control the learning environment.

The use of multimedia in teaching and learning presents effectiveness of mathematics to upper primary students. Multimedia is a multi-sensory that stimulates multiple senses of audiences at a time. “Its interactive nature enables teachers to control the flow of information (Iqbal and khan, 2015)”. Multimedia technology affects both aspects of teaching and learning. It does this in three ways: in how it presents information; in how students interact both with the medium and through the medium with the teacher and other learners; and in how knowledge is structured within multimedia. In this paper we will show a comparative approach between the traditional way of teaching and multimedia based teaching approach.

Multimedia

Multimedia refers to any computer-mediated software or interactive application that integrates text, colour, graphical images, animation, audio sound, and full motion video in a single application. “Multimedia learning systems consist of animation and narration, which offer a potentially venue for improving student understanding (Mayer & Moreno, 2000).”

In education, multimedia is used to produce computer based training courses (popularly called CBTs) and reference books like encyclopedia and almanacs. A CBT lets the user go through a series of presentations, text about a particular topic, and associated illustrations in various information formats Edutainment is the combination of education with entertainment, especially multimedia entertainment.

Learning theory in the past decade has expanded dramatically because of the introduction of multimedia. Several lines of research have evolved, e.g. cognitive and multimedia training

From multimedia learning (MML) theory, David Roberts has developed a large group lecture practice using PowerPoint and based on the use of full-slide images in conjunction with a reduction of visible text (all text can be placed in the notes view’ section of PowerPoint). The method has been applied and evaluated in 9 disciplines. In each experiment, students’ engagement and active learning has been approximately 66% greater, than with the same material being delivered using bullet points, text and speech, corroborating a range of theories presented by multimedia learning scholars like Sweller and Mayer The idea of media convergence is also becoming a major factor in education, particularly higher education. Defined as separate technologies such as voice (and telephony features), data (and productivity applications) and video that now share resources and interact with each other, media convergence is rapidly changing the curriculum in universities all over the world.

Multimedia plays a vital role in the field of education due to its multisensory approach. It offers opportunities for almost all subjects and especially it provides a good ground for complex subject matter like science and mathematics as we had studied in chapter two. The effectiveness of

Multimedia Teaching Package in Mathematics over Traditional method of teaching has been established through the present study.

Effectiveness of Multimedia Teaching Package in Mathematics

As the investigator collected opinions from subject experts individually, it has been commented by them that it is convenient to use this package in the classroom. It was further asserted by 80% experts that the level of language distribution, arrangements of topics and sub-topics and color combination is really appreciable.

Multimedia package were relevant & interesting and the feedback given in the form of MCQs at the end of each lesson captured the attention of students beautifully. The subject experts appreciated the fact that MMTP elaborate complex concept of mathematics in a simple way and is helpful in removing the fear in students for mathematics subject. Overall the content and presentation both were stated as the strong points of MMTP which further highlights the acceptance of multimedia teaching package. The subject experts also suggested that such provisions should be made that MMTP can be used in daily classroom routine. Certain necessary steps like technical training of teachers, arrangement of resources etc. could be made by the management. They were also of the opinion that provision of such capturing sessions would be given space in time table of schools. Help of trained voice can be taken if necessary in some scenes.

One of the most rapidly changing and exciting areas of education in the world today is development of computer-based teaching materials, especially Multimedia Learning packages that run on personal computers. These new technologies offer Students and teachers access to materials as never before. Through the condensed Storage capabilities of computers, multimedia can deliver large amounts of Information in ways that make it manageable, approachable, and useful. Multimedia makes it possible to access illustrations and photographs, sound and video, as well as large amounts of text. Multimedia programmes present learning information to teachers, students and scholars in newly engaging and meaningful ways. The integration of multimedia programmes into classrooms and libraries promises not only to change the kinds of information that is available for learning, but the ways that learning takes place. One of the advantages of using multimedia is to convey information quickly and effectively to all students and keep them interested in learning (Savage and Vogel, 1996),

The multimedia approach in teaching-learning scenario means a strategy, which incorporates more than one technique/media of instructional unit. But it is not just a collection of a few media or techniques; rather it is planned combination of several technique/media with special reference to instructional objectives because different potentialities for realizing varied objectives. The Multimedia Approach aims at the maximum utilization of effectiveness of different techniques and media in proper combination to acquire the desired end.

REFERENCES

- 1) Chauhan, S. S. (1992). Innovations in Teaching and Learning process. New Delhi: Vikas Publication House Pvt. Ltd.
- 2) Dash, K. M. (2009) ICT in Teacher Development, Neelkamal Publication Pvt. Ltd. Educational Publishers, New Delhi.

- 3) UNESCO (2002). Information and Communication Technologies in Teacher Education, A Planning Guide. Paris: UNESCO.
- 4) NCTE (2002). ICT initiatives of the NCTE Discussion Document. New Delhi : National Council For Teacher Education.
- 5) Dahiya, S. S. (2005). ICT-Enabled Teacher Educator, University News, 43 page 109-114 May 2-8.
- 6) Aggarwal, J. C. (1996), Essential of Educational Technology, Vikas Publishing House, New Delhi.
- 7) ICT in Education (2006). Information and communication technologies in teacher education: A planning guide.
- 8). Kirwadkar, A & karanam, P. (2010) : E-learning Methodology. Sarup Book Publishers Pvt Ltd. New Delhi.
- 9). Agarwal, J. P. (2013): Modern Educational Technology. Black Prints, Delhi.
- 10) Venkataiah, N. (1995) "Educational Technology" Atul Publishers, daryaGanj, New Delhi.
- 11).Goel, D. R. (2003), ICT in Education, Changes and Challenges in ICT in Education. M. S. University, Baroda.
- 12). Vanaja, M. & Rajasekhar, S. (2009), Educational Technology and Computer Education, Neelkamal Publications Pvt. Ltd., Hyderabad.
- 13). [www. google. com](http://www.google.com) , [www. wikipedia. com](http://www.wikipedia.com)



INTERVENTION OF YOGA ON THE CONCENTRATION ABILITY OF COLLEGE LEVEL WOMEN STUDENTS

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ABSTRACT

The purpose of the study was to find the Intervention of yoga on the concentration ability of college level students. For these purpose 40 women students from Vyasa Arts & Science Women's Colleges in Tirunelveli in the age group of 17 to 19 years were selected at random. They were divided into two groups, group I was treated as, experimental group and group II was treated as control group. Experimental group was given six weeks yoga practice and the control group was not given any treatment. Concentration ability was selected as variable and it was assessed through grid test. The data were collected before and after the training period and collected data was computed by dependent 't' test in all cases level of significance was fixed at 0.05 level. The result concluded that there was significant improvement on concentration level due to the influence of yogic practices than the control group among College students. Thus yoga is an art, science and philosophy, which influence the life of man at each level. Therefore, the effects of yoga must be felt in every movement of our day-to-day lives. Asana posture are improves general physiological fitness of humans.

KEYWORDS: Yoga, Concentration Ability

INTRODUCTION

Yoga is a systematic practice for the realization of higher perceptions. It is the science of life and an ideal way of living, providing rhythm to the body, melody to the mind, harmony to the soul and there by symphony to life. In short, yoga is a way to achieve total health, peace, bliss and wisdom. Physical, mental and spiritual aspects of yoga help to make one's life purposeful, useful and noble. Thus yoga is an art, science and philosophy, which influence the life of man at each level. Therefore, the effects of yoga must be felt in every movement of our day-to-day lives. Asana posture are improves general physiological fitness of humans. Yoga is a holistic system of teaching skills which many activities person seeks, such as control over the mind, control over the body, good breathing habits, and relaxations under pressure, highly developed concentration skills and the ability to focus on the present study.

HEALTH BENEFITS OF YOGA

Yoga has both preventive and therapeutic benefits. It has been shown to offer both physical and mental benefits to the body and the mind. The many physical benefits of hatha yoga are: it improves flexibility and muscle joint mobility; strengthens, tones, and builds muscles; corrects posture; strengthens the spine; eases back pain; improves muscular-skeletal conditions such as bad knees, tight shoulders and neck, swayback and scoliosis; increases stamina; creates balance and grace; stimulates the glands of the endocrine system; improves digestion and elimination; increases circulation; improves heart conditions; improves breathing disorders; boosts immune response; decreases cholesterol and blood sugar levels; and encourages weight loss.

The mental benefits include: it increases body awareness; relieves chronic stress patterns in the body; refreshes the body by relieving muscle strain; relaxes the mind and body; centers attention; sharpens concentration; and frees the spirit.

Western doctors and scientists are discovering additional health benefits of hatha yoga. Studies have shown that it can relieve the symptoms of several common and potentially life-threatening illnesses; such as arthritis, arteriosclerosis, chronic fatigue, diabetes, AIDS, asthma and obesity. Many believe it even fends off the ravages of old age.

CONCENTRATION

This is the mental quality to focus on the task in hand. If the person lacks concentration then their athletic abilities will not be effectively or efficiently applied to the task. Research has identified the following types of attention focus:

- Broad Narrow continuum - the athlete focuses on a large or small number of stimuli
- Internal External continuum - the athlete focuses on internal stimuli (feelings) or external stimuli (object)

METHODOLOGY

To find out the Intervention of yoga on the concentration ability of college level women students, 40 women students from Vyasa Arts & Science Women's Colleges in Tirunelveli in the age group of 17 to 19 years were selected at random. They were divided into two groups, group I was treated as, experimental group and group II was treated as control group. Experimental group was given six weeks yoga practice and the control group was not given any treatment. The following Asanas was administered during the training period virukshasana, thadasana,

sarvangasana, bujangasana, danurasana, padahasthasana, savasana and anulomaviloma pranayama. Concentration ability was selected as variable and it was assessed through grid test. The data were collected before and after the training period and collected data was computed by dependent 't' test in all cases level of significance was fixed at 0.05 level.

RESULT OF CONCENTRATION LEVEL AMONG COLLEGE WOMEN STUDENTS

The analysis of concentration level among College women students pre test and post test data are calculated by dependent 't' test.

TABLE – I
DEPENDENT 't'- RATIO FOR COLLEGE WOMEN STUDENTS ON
CONCENTRATION LEVEL (Scores in Numbers)

S.No	Group	Mean		Standard Deviation		r	Obtained t value	Table t value
		Pre	Post	Pre	Post			
1	Control group	34.55	33.30	4.87	5.57	0.11	0.92	2.02
2	Experimental group	52.60	56.90	10.27	8.04	0.23	3.15*	

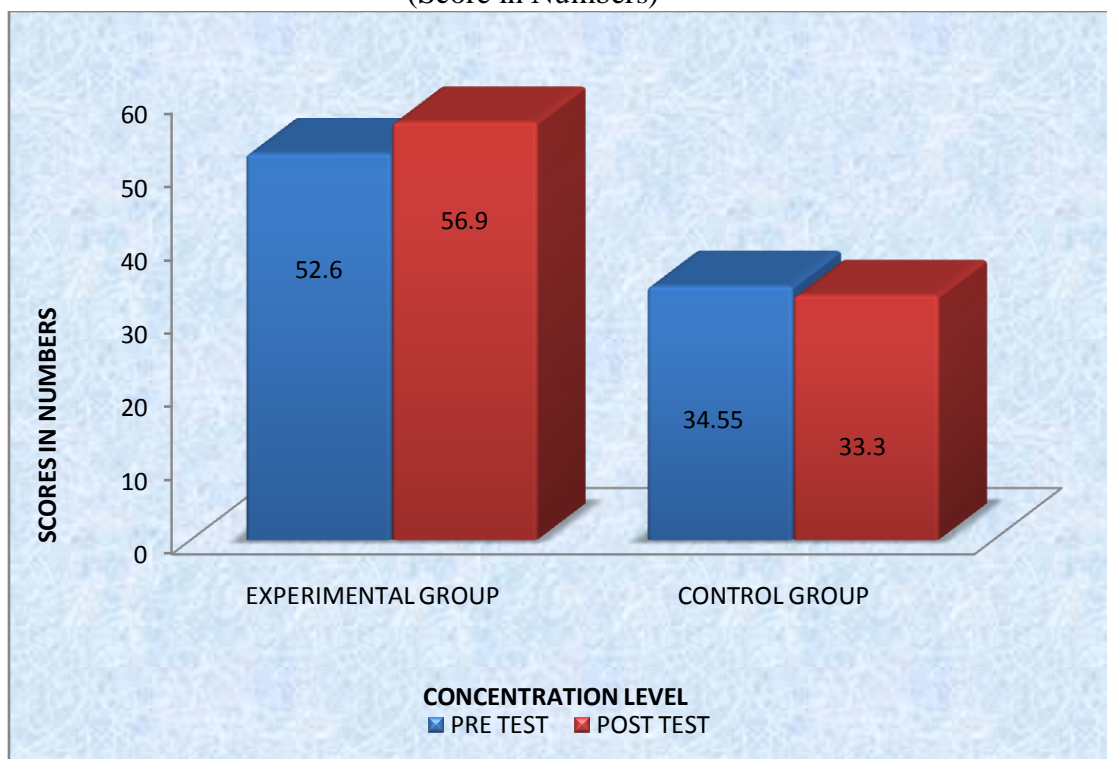
Degree of freedom= $(N - 1) = 39$. *Significant at 0.05 level of confidence. Table value at 0.05 level = 2.02

Table I shows that the mean value of pre and post test means were 34.50 and 33.30 of control group. The obtain t-ratio 0.92 was not significant this was lesser than the table t-value of 2.02.

Table I shows that the mean value of pre and post test means were 52.60 and 56.90 of experimental group. The obtain 3.15 was significant this was higher than the t-value of 2.02.

The result indicated that the yoga practice had significant improvement on concentration level.

FIGURE – 1
THE BAR DIAGRAM SHOWS IN THE RESULT OF PRE AND POST MEAN OF THE
CONCENTRATION LEVEL AMONG COLLEGE WOMEN STUDENTS
(Score in Numbers)



CONCLUSION

1. The result presented in table I concluded that there was significant improvement on concentration level due to the influence of yogic practices than the control group among College women students.
2. The result presented in table I concluded that there was significant difference between the experimental and control group on concentration level among College women students.

REFERENCE

- Yobu, A., (1987), Test and Measurement in Physical Education, Chennai: Grace Printers.P.345.
- Swami Vishnudevananda (1972), The Complete Illustrated Book of Yoga, New York: Julian Press Inc., PP.272-274.
- Clay C.C. et al. (2005), "The Metabolic Cost of Hatha Yoga".Journal of Strength Conditioning Research, 19:3, PP.604-10.



EFFECT OF LAND AEROBIC TRAINING ON SELECTED PHYSICAL VARIABLE AMONG COLLEGE STUDENTS.

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ABSTRACT

Aerobic exercise is a physical activity of low to high intensity that depends mainly on the aerobic energy-generating process. Aerobic means "relating to, or requiring free oxygen", and it refers to the use of oxygen to meet energy demands during exercise via aerobic metabolism. For the present study a total of thirty college men (N=30) was selected from Kannur University Kerala. The age of the subjects ranged from 18 to 24 years. The subjects were equally divided (n=15) into an experimental group (land aerobic) and control group. There was significant difference between the pre and post test scores on experimental group's flexibility. The calculated 't' value 2.39 is greater than tabulated 't' value of 2.145 at 0.05 level of significance with 14 degree of freedom. In the case of control group there was no significant difference found in flexibility. Based on the result twelve weeks of land aerobics training had improved all the flexibility for college students. Based on the findings of the study the hypothesis stated that there will be a significant effect of land aerobic training on flexibility was accepted.

KEYWORDS: Land Aerobics, College Students, Flexibility.

INTRODUCTION

Aerobic exercise is physical activity of low to high intensity that depends mainly on the aerobic energy-generating process. Aerobic means "relating to or requiring free oxygen", and it refers to the use of oxygen to meet energy demands during exercise via aerobic metabolism. Generally, moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for prolonged time. Aerobics is a form of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness (flexibility, muscular strength, and cardio-vascular fitness). It is usually performed to music and may be practiced in a group setting led by an instructor (fitness professional), although it can be done solo and without musical accompaniment. With the goal of preventing illness and promoting physical fitness, practitioners perform various routines comprising a number of different dance-like exercises. Formal aerobics classes are divided into different levels of intensity and complexity. A well-balanced aerobics class will have five components: warm-up (5-10 minutes), cardio vascular conditioning (25-30 minutes), muscular strength and conditioning (10-15 minutes), cool-down (5-8 minutes) and stretching and flexibility (5-8 minutes). Flexibility is one of the main fitness components, important for success in many sports; good flexibility is an important part of the overall fitness profile. Good flexibility is also important for injury prevention.

STATEMENT OF THE PROBLEM

The present study was designed to examine the Effect of land aerobics Training on selected physical variable among college men.

HYPOTHESIS

It was hypothesized that there will be a significant deference on "Effect of land aerobics Training on selected flexibility among college men".

SIGNIFICANCE OF THE STUDY

- The study will highlight the importance of land aerobics training.
- Ultimate goal of research in physical education is to help coaches and physical educators to train the athletes and players based on new concepts to improve the performance and knowledge about land aerobics.
- The study will highlight the importance of flexibility in sports,

DELIMITATIONS

- ❖ The study was delimited to thirty subjects (N=30) selected from Kerala
- ❖ The subjects were divided equally (n=15) into an Experimental group and Control group.
- ❖ The subject's age ranged between 18 to 24 years.
- ❖ The duration of the training period was restricted to twelve weeks and the number of training sessions per week was confined to three day per week.
- ❖ The duration of each training session was forty five minutes.
- ❖ The study was further delimited to the following physical related variables Flexibility

LIMITATIONS

- ❖ The previous experiences of the subjects in the field of sports and games were considered as the limitation for the study.

- ❖ The uncontrolled factors like daily habits, life style, food habits, of the subjects were considered as limitation for the study.
- ❖ Climatic conditions such as humidity and temperature was not taken in to consideration during the experimental period and administration of tests.

METHODOLOGY

For the present study a total of thirty college men (N=30) was selected from Kannur university Kerala. The age of the subjects ranged from 18 to 24 years. The subjects were equally divided (n=15) into an experimental group (land aerobic) and control group.

STATISTICAL TECHNIQUE

The data was statistically analysed by applying **Dependent ‘t’** –test.

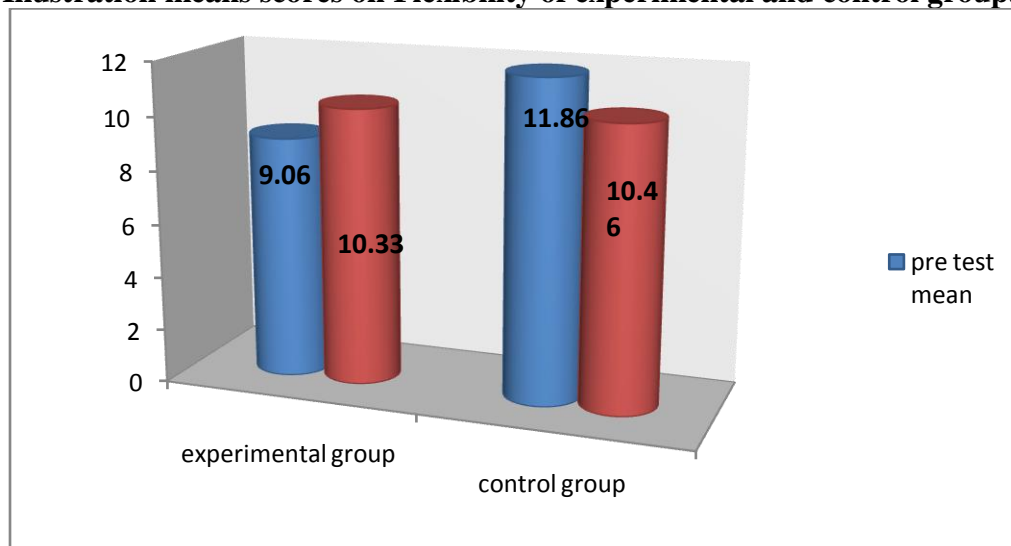
TABLE 1
‘T’ RATIO OF EXPERIMENTAL AND CONTROL GROUP ON FLEXIBILITY

Control Factors	Pre test			Post test			t-ratio	Table Value
	N	Mean	SD	N	Mean	SD		
Experimental	15	9.06	3.73	15	10.33	3.37	2.39*	2.145
Control	15	11.86	4.15	15	10.46	3.75	1.30	2.145

*Significance at 0.05 level of confidence

Table 1 above indicates that, there was significant difference between the pre and post test scores on experimental group's flexibility. The calculated ‘t’ value 2.39 is greater than tabulated ‘t’ value of 2.145 at 0.05 level of significance with 14 degree of freedom. In the case of control group there was no significant difference found inflexibility. The table representation of the pre - test and post-test means differences on flexibility is presented in the Figure 1.

Figure: 1
Illustration means scores on Flexibility of experimental and control group.



DISCUSSION ON FINDINGS

Based on the result twelve weeks of land aerobics training had improved the flexibility for college men.

DISCUSSION ON HYPOTHESIS

Based on the findings of the study the hypothesized was accepted.

REFERENCE

1. Sharon A. Plowman; Denise L. Smith (1 June 2007). Exercise Physiology for Health, Fitness, and Performance. Lippincott Williams & Wilkins. p. 61. ISBN 978-0-7817-8406-1. Retrieved 13 October 2011.
2. Kenneth H. Cooper (1997). Can stress heal Thomas Nelson Inc. p. 40. ISBN 978-0-7852-8315-7. Retrieved 19 October 2011.
3. Cooper, Kenneth H. (1983) [1968]. Aerobics (revised, reissue ed.). Bantam Books. ISBN 0553274473.
4. Netburn, Deborah (March 30, 2009), "Dr. Kenneth Cooper got a nation moving through aerobics", Los Angeles Times
5. Wayne, Jake (14 June 2011). "Aerobic Vs. Anaerobic Fitness". LIVESTRONG.COM. Retrieved 21 April 2013.
6. Muscle as a secretory organ. Pedersen BK. American Physiological Society. Compr Physiol 3:1337-1362, 2013. <http://www.inflammation-metabolism.dk/index.php?pageid=21&pmid=23897689>
7. "Fat vs. carbohydrate metabolism during aerobic exercise".
8. Matthew J Watt; et al. (June 2002). "Intramuscular triacylglycerol, glycogen and acetyl group metabolism during 4 h of moderate exercise in man". J Physiol. **541** (Pt 3): 969–78. PMC 2290362. PMID 12068055. Doi:10.1113/jphysiol.2002.018820.
9. Snowling, N. J., & Hopkins, W. G. (2006). Effects of Different Modes of Exercise Training on Glucose Control and Risk Factors for Complications in Type 2 Diabetic Patients A meta-analysis. Diabetes Care, 29(11), 518–2527. <http://doi.org/10.2337/dc06-1317>
10. 'Aerobic exercise', Food and Fitness: A Dictionary of Diet and Exercise, Michael Kent, Oxford University Press, 1997.
11. Cooper, Kenneth H. "The Benefits of Exercise In Promoting Long And Healthy Lives – My Observations". Methodist DeBakey Cardiovascular Journal. **6** (4): 10–12. Doi:10.14797/mdcj-6-4-10.
12. www.topendsports.com/fitness/flexibility.htm



ASSESSMENT OF HEALTH AND WELLNESS OF DIFFERENT PROFESSIONALS

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ABSTRACT

The purpose of this study is to assess and compare the Health and Wellness of Professionals in different Districts of Jammu and Kashmir State. For the purpose of the study 50 Doctors, 50 Engineers and 50 Physical Education Teachers randomly selected from the different Districts of Jammu and Kashmir. Corbin (2008) Questionnaire was used for data collection. The findings of the present study demonstrates that there is significant difference on emotional health, body care and environmental health ($p < 0.05$) among Doctors, Engineers and Physical Education Teachers. The Emotional Health, Fitness & Body Care and Environmental Health have a significant effect on Health and Wellness of Doctors, Engineers and Physical Education Teachers of Kashmir region. Many factors have contributed to the increased public awareness of health and wellness. Higher rates of heart diseases increase in the incidents of cancer, record numbers of clinically obese people, and various other scares have all drawn attention to the need for healthy life style choices. In modern usage, however, the combined phrase "Health and Wellness" has come to mean the pursuit the overall physical, mental and emotional health. This term is used always in various contexts all aim at promoting a better lifestyle.

KEYWORDS: Emotional Health, Fitness and Body Care, Environmental Health, Doctors, Engineers, Physical Education Teachers.

INTRODUCTION

Health and wellness are often interchangeable, but they have slightly different in meanings. Health is more of a medical term and describes the physical and mental state of a person. It usually denotes a lack of diseases or abnormality. Wellness, on the other hand, is defined as the overall process of maintaining a general state of good health. Wellness involves conscious decisions on the part of the individual, where as health simply describes a person's condition. In modern usage, however, the combined phrase "Health and Wellness" has come to mean the pursuit the overall physical, mental and emotional health. This term is used always in various contexts all aim at promoting a better lifestyle.

Health science is the branch of science focused on health. There are two main approaches of health science: one the study and research of the body and health related issues to understand how humans and animals function and the application of the knowledge for improve health and to prevent and cure the diseases and other physical and mental impairments. The science builds on many sub-fields including biology, biochemistry, physics, epidemiology, medical sociology. Applied health sciences endeavor to better understand and improve human health through applications in area such as health education, biomedical engineering, biotechnology and public health.

Many factors have contributed to the increased public awareness of health and wellness. Higher rates of heart diseases increase in the incidents of cancer, record numbers of clinically obese people, and various other scares have all drawn attention to the need for healthy life style choices. Additionally, as modern medicine has progressed, doctors and scientists have greatly expanded their knowledge of human body, exposing many health risks that were previously unknown. One-hundred years ago, doctors touted excessive sun exposure as beneficial, as heroin/cocaine combo sets, complete with syringes and needles, were sold in department stores.

The holistic perspective which is generally agreed upon as the preferred model, completely transformed this notion of health and wellness movement was perhaps the catalyst that began this transformation .It is argued that measures of physical fitness are indicators of positive health when such measures are identified under their discrete headings of agility, flexibility, power, speed and reaction time , strength, cardiovascular capacity, body composition and posture (Lamb et al. 1988 ; Tetingeer Larry Gene 1998; Mehtap et al. 2005; Daniela 2009). Wellness programs are designed to impact on employee health and indirectly, may also positively influence employee attitude and organizational outcomes. In the 1940s, the World Health Organization defined *health* as "the state of complete physical, mental, and social well-being, not merely the absence of disease" (Byer & Shainberg, 1995). The present study would be helpful for understanding the values of health and wellness through the selected subjects. The present study would reveal exact nature of the life of subjects. The present study would support to health awareness among teachers, students and parents. The present study would be helpful to other professionals to maintain proper health throughout their lives.

METHODS

Subjects

To accomplish the purpose of the study 150 Subjects were selected from different Districts of Jammu & Kashmir State. In which 50 (doctors), 50 (engineers) and 50 (physical education teachers). The 50 Doctors were selected from the district hospital (Anantnag, Kulgam and Srinager). Also the 50 Engineers were selected from IIT Srinager and NIT Srinager. Similarly 50

Physical Education Teachers were selected from four Degree collages (Govt. Degree collage Ganderbal, Govt. Collage of Physical Education Ganderbal, Boys Collage Anantnag and Govt. Degree Collage Kulgam).

Variables and tests

The data was collected from different Districts of Jammu & Kashmir State in which the simple strength was taken 150. Three Professionals (Doctors, Engineers and PET's) 50 each were taken as samples. In the present study Health and Wellness was measured using the Questionnaire designed by Corbin (2008). By this questionnaire the researcher measures the Emotional Health, Environmental Health and Fitness & Body Care.

Statistical technique

The present investigation was Statistically analyzed by the statistical 't' test and one way analysis of variance (ANOVA) and also the SCHEFFE'S Post hoc test was used to find the significant difference Between the Groups, Within the Groups and the Mean.

RESULTS

This study shows a significant difference in the emotional health among professionalists ($F = 27.907$, $p < 0.05$). Since "F" is significant, SCHEFFE'S post hoc test was applied and revealed that engineers had greater emotional health than doctors and PET's.

TABLE 1: DIFFERENCE IN EMOTIONAL HEALTH AMONG PROFESSIONALS.

Group	N	Mean	S.D.	SOV	SOS	DF	MS	F
Doctors	50	33.64\$	4.40667	Between	2188.973	2	1094.487	27.907*
Engineers	50	39.80#	7.46693	Within	5765.300	147	39.220	
PET's	50	30.62μ	6.51808					

*Significant at 0.05 level

Scheffe's post hoc test:

Doctors vs Engineers ($p < 0.05$); Doctors vs PET's ($p < 0.05$); Engineers vs PET's ($p < 0.05$).

This study also shows a significant difference in the fitness and body care among professionalists ($F = 23.013$, $p < 0.05$). Since "F" is significant, SCHEFFE'S post hoc test was applied and revealed that Doctors had greater fitness and body care than PET's followed by the Engineers.

TABLE 2: DIFFERENCE IN FITNESS AND BODY CARE AMONG PROFESSIONALS.

Group	N	Mean	S.D.	SOV	SOS	DF	MS	F
Engineers	50	30.70\$	6.30274	Betwe en	2399.08	2	1199.540	23.013*
Doctors	50	40.20#	8.28571	Within	7662.28	147	52.124	
PET's	50	33.38μ	6.92788					

*Significant at 0.05 level

Scheffe's post hoc test:

Doctors vs. Study shows a Engineers ($p < 0.05$); Doctors vs PET's ($p < 0.05$); Engineers vs PET's ($p < 0.05$).

Significant difference in the environmental health among professionals ($F = 11.990$, $p < 0.05$). Since “F” is significant, SCHEFFE’S post hoc test was applied and revealed that Doctors had greater environmental health than PET’s followed by the Engineers.

TABLE 3: DIFFERENCE IN ENVIRONMENTAL HEALTH AMONG PROFESSIONALS.

Group	N	Mean	S.D.	SOV	SOS	DF	MS	F
Engineers	50	35.24\$	4.53809	Between	1282.493	2	641.247	11.990*
Doctors	50	40.70#	8.96308	Within	7861.700	147	53.481	
PET’s	50	39.28μ	7.71439					

*Significant at 0.05 level

Scheffe’s post hoc test:

Doctors vs. Engineers ($p < 0.05$); Doctors vs. PET’s ($p < 0.05$); Engineers vs. PET’s ($p < 0.05$).

DISCUSSION

On the variable Emotional health, Engineers score high as compared to Doctors and PET’s, the probable reason for this may be that they are emotionally very strong as their minds are developed on the materialistic base. As by the studies of (Thommasen, 2001; Tyssen, 2007; Isaksson, 2008) measure the emotional exhaustion revealed that 80% of physicians were suffering from burnout showing the low level of doctors. But on fitness and body care variable, Doctors scored higher as compared to Engineers and PET’s. The reason for this might be that they acknowledge the benefits of balanced diet, regular exercises, good healthy habits and knowledge about mechanisms to protect oneself from disease causing agents. Similarly on the variable environmental health doctors makes their first presence, because they have more awareness about the negative influence of unhealthy environment on the individual’s health and how to maintain good health by keeping environment healthy and hygienic. Investigation on Environmental health practitioners has given a positive effect of professionals. The health of practitioners who are working on the wellbeing of Environmental Health. It is also clear from the work that there is a close interaction between bright future and the role of environmental health practitioners. The present study is also supported by (Ashkanasy & Daus, 2005; Barchard, 2003).

CONCLUSION

It is concluded that engineers having greater emotional strength, but doctors have greater body care and environmental health. This study provided us relevant information about the fitness and wellness among professionals of Kashmir region.

REFERENCES

Daniela. Samarin Murdoch University, (2009) *health promot. Int.* (2009) 18 (4): 275-278doi:10.1093/heapro/dag 418

Isaksson, K., E., Gude, T., Tyssen, R., & Aasland, O., G. (2008). Counselling for burnout in Norwegian doctors: One year cohort study. *British Medical Journal*, 337, a2004.

Mehtap Ozdirenc *et al.* (2005) Physical fitness in rural children compared with urban children in Turkey. *Pediatrics international journal* Vol, 47, p, 26-31

Tetingeer Larry Gene (1998) *The effects of wellness programming upon physical readiness of Naval Reservists*. Naval reserve centre, Sioux City Iowa.

Tyssen, R. (2007). *Health problems and the use of health services among physicians: A review article with particular emphasis on Norwegian studies*. *Industrial Health*, 45, 599–610.

Thompson, W.T., Cupples, M.E., Sibbett, C.H., Skan, D.I., & Bradley, T. (2001). *Challenge of culture, conscience, and contract to general practitioners' care of their own health: qualitative study*. *British Medical Journal*, 323, 728–731.

Lamb et al. (1988) *physical fitness and health-related fitness as indicators of a positive health state*. University of Liverpool United Kingdom. Oxford University press (1988), Vol 3, No.2.

Byer, C. O., & Shainberg, L. W. (1995). Introduction to Wellness. *Living Well: Health in Your Hands*. New York: Harper Collins, 5.

Ashkanasy, N. M., & Daus, C. S. (2005). *Rumors of the death of emotional intelligence in organizational behavior are vastly exaggerated*. *Journal of Organizational Behavior*, 26, 441–452.

Barchard, K. A. (2003). *Does emotional intelligence assist in the prediction of academic success? Educational and Psychological Measurement*, 63, 840–858.



ENGLISH LANGUAGE TEACHING AND LEARNING ISSUES WITH SPECIAL FOCUS ON VERNACULAR (TAMIL) MEDIUM STUDENTS AT UNDERGRADUATE LEVEL

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ABSTRACT

Though English language has been academically and officially used for the past hundred years, it still continues to pose challenges for students from vernacular (Tamil) medium. Throughout the nation, primarily, English is the medium of higher education, especially collegiate education. Therefore, students could not evade or bypass learning English as a second language. Students from Tamil medium, due to lack of adequate exposure to English language consider themselves as victims of an unfamiliar language, since; it operates as a major obstacle to exhibit their knowledge and talent. But proper intervention by means of LSRW, by the English Language Teacher could bring about positive results in Tamil medium students, who could be successful academically and in real life situations.

KEYWORDS: *LSRW, Tamil Medium, English Language Teacher, Challenges, Vernacular, Second Language) Psychologically, It (Mother Tongue) Is A System Of Meaningful Signs That In His Mind Works Automatically For Expression And Understanding. Sociologically, It Is A Means Of Identification Among Members Of The Community To Which He Belongs. Educationally, He Learns More Quickly Through It Than Through An Unfamiliar Linguistic Medium (Todd, 1983: 165).*

INTRODUCTION

The above mentioned idea is a great truth accepted by linguists, teachers, language experts, education experts, students and parents after observation, research and first-hand experience. A report on *The Use of Vernacular Languages in Schools* published by the UNESCO reiterates, “it is axiomatic that the best medium for teaching a child is his mother tongue” (Cummins, 1979: 223). But all the citizens of the world are not blessed to enjoy their entire education in their mother tongue, especially, in countries like ours, where “880 languages” (readindia.com) are across the country and “22 languages” are officially acknowledged by the government. English, though not one of our vernacular languages, it serves as a link language for communication throughout the country. It is the official language used in government offices, judiciary, legislature, educational institutions and for all official purposes. So, we are in one or the other point of our life, forced to acquire English language as a necessary communication tool.

It is a known fact that, in India, education is provided in 2 mediums, one, the vernacular language and the other, English. The percentage of opting education in vernacular language is higher in rural areas, while compared to urban areas. After school education in their mother tongue, they enter in to a new realm of acquiring knowledge in English language in under graduate level, that turns out to be an endeavor nothing short of a maze. Though medium of education in English is a century old practice in this country, students from Tamil medium suffer to cope up with the English language because of inadequate exposure to and training in language skills.

The Tamil medium students study all their subjects in their mother tongue and their opportunity to listen to English language is restricted to only one hour, during the English language class in a day in their school days. The very first skill in acquiring a language is the skill of **Listening**. This basic skill, in acquiring the language is minimized for Tamil medium students. Listening provides the students with getting familiarized with the sounds of the foreign language which makes them familiar with phonic sounds, to distinguish between various phonic sounds, vocabulary and sentence structure of the language. Unless the first skill is sufficiently practiced well, the second skill, that is speaking, cannot be achieved. Students attitude to acquiring English language is that of a tough subject, meant for academic purposes alone. Because of inadequate practice in listening and speaking, their reading and writing gets hampered. They approach, the only English language paper just for the sake of clearing their exam and as a consequence, their competence in English language is below the basic level needed for a student who is entering in to his under graduation.

As far as the curriculum for the under graduate is concerned, it is structured to operate in such a way that the students are equipped with all basic skills and knowledge of the language to face the job market. Curriculum is not tailor made that suits the specific educational needs of the students with various levels of educational skills. Tamil medium students without proper and sufficient exposure to the basic four skills of the language suffer immensely. Their academic performance is poor though they are sound in their subjects. This leads to many other complications, like lack of confidence, lack of interest in academics, general unwillingness to participate in class, and an in-built fear for English. As a reflection of these attitudes, activities like hiding their heads, avoiding eye contacts, occupying the last desks, and lack of interaction with teachers are common among these students. They also suffer from inferiority complex by looking at the language proficiency of their peers from English medium students. The utmost tragedy that is

also occasionally heard is committing of suicide by students from vernacular medium unable to withstand the pressure of acquiring knowledge in an unfamiliar language, ie., English.

As the vernacular medium student faces challenges in an undergraduate class, so the teacher too faces the problem of handling a diversified group of language learners in a class -student group from Tamil medium and student group from English medium. This difference has serious implications for language teacher. It is left to us, language teachers, to successfully make the class an 'inclusive class', where both the groups gain knowledge. **“Diagnostic assessments”**(Deborah & Shannon 19) are most advantageous and inevitable to have a perfect knowledge of a student's language competence in a mixed classroom environment. Diagnostic assessment is carried prior to the beginning of usual classroom instructions which helps the teacher to determine a student's strength, weakness, knowledge and language skills. Likewise, **“Formative assessments”**(Deborah & Shannon 19) are also advocated to evaluate the students' progress. Acquiring **ELS** (English Language skills) is actually not a complex endeavor for the student if the teacher is skillful enough to provide necessary and smart intervention in the form of language acquiring skills **LSRW**.

LSRW

Students should be trained in LSRW in the college level. This helps them not only in academic excellence, but also in the professional front in real situation.

Listening

In order to improve listening skills of students, they can be trained in various ways. **Audio Visual Aids** can serve as an innovative strategy that can be adopted by the language teacher.

Audio visual aids:

One of the best strategy that a language teacher can use to instill proficiency in English among the students is the use of audio-visual aids which the student willingly and curiously adopts apart the usual academic trainings. The language lab is the best choice to train students in listening to perfect pronunciation of sounds of the language. Also there are plenty of online resources available for free which the students can be introduced to make use of at their won convenience. This new exposure brings about a great change in their attitude and they develop a liking towards the language leaving behind their inhibitions and phobias. This new method of hearing to English language spoken by native speakers through headphones and imitating these sounds are also great fun for them. The language teachers can make use of these materials for the learning betterment of Tamil medium students who are backward in their proficiency. The process of learning becomes a welcome activity while videos of short stories along with the subtitles enable the students to enrich their knowledge in English language. The exposure to listening activities (conversations, passages, essays, listening to general content, to fill up information etc) bring huge difference on the students listening skills and thereby to the approach to English language.

Speaking

Speaking generally termed as communication skills are essential in social and professional context. Training students to speak in English is the most desired aspect in the process of learning English language. The English teacher plays the vital role here by motivating the student to come out of their inbuilt inhibitions. The student's skills in speaking is developed

through exercises based on individual and group activities (giving topics to speak for 2 minutes or more), group discussions, debate, role play and Just a Minute sessions.

One thing that the teacher and the peer group has to be conscious of is not to condemn, laugh and mock at the mistakes made while the slow learners attempt to speak. It is an accepted fact by the language experts that learning process involves committing mistakes. Motivation and encouragement are vital to slow learners.

Reading

Students in order to develop their vocabulary and fluency in language, should be equally trained in reading English. Reading skills are essential to understand the meaning of words and to draw inferences. Students should be trained in types of reading like skimming, scanning, reading between the lines, intensive reading and extensive reading. They should be given exercises on practicing these types of reading texts.

Writing

The students should be trained in preparing texts of different types. They should be creative in preparing short and simple texts, use of appropriate vocabulary, paragraph writing, essay writing, précis writing, letter writing and note making. They should be motivated for error free writing because academic and professional world demands it. The field of education has undergone drastic changes. There is a shift that prevails from traditional way of teaching to modern way, where lots of technologies can be incorporated to bring excellence in student's English language learning process. Information and communication technology tools play a vital role in training the students in English as well as any other foreign language.

A motivating teacher also makes the slow learners to understand that proficiency in language is just a matter of constant and patient practice and training. Little Wood conceptualizes the role of the teacher as a facilitator of learning, an overseer, a classroom manager, a consultant or adviser and at times a co-communicator with the learners. To Harmer, a teacher plays the role of a controller, organizer, assessor, promoter, participant, resource, tutor and observer. A competent and resourceful English teacher who is aware of his role plays it vitally to bring about see change in Tamil medium students' attitude towards English and their performance in English language.

WORKS CITED

1. Cummins, J., 1979, "Linguistic interdependence and the educational development of bilingual children". *Review of Educational Research*, 49: 222–251.
2. Deborah J. Short & Shannon Fitzsimmons. *Double The Work*. Cornege Corporation, New York, 2007.
3. Todd, L., 1983, "Language options for education in a multilingual society: Cameron", in Chris Kennedy (ed.), *Language Planning and Language Education*. London: George Allen & Unwin, 160–171.



EFFECT OF TRADITIONAL TRAINING WITH AND WITHOUT LADDER TRAINING ON MOTOR FITNESS VARIABLES OF HIGH SCHOOL KHO- KHO PLAYERS

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ABSTRACT

The purpose of the study was to find out effect of traditional training with and without ladder training on motor fitness variables of high school kho- kho players. For this study was sixty high school boys selected from Govt. Hr. Sec. School, Ganapathi, Coimbatore, Tamil Nadu and T.N.G.R Hr. Sec. School, Varatharajapuram, Coimbatore, Tamil Nadu. The subject's age was ranged from 12 to 17 years and they divided into three equal group namely Traditional Training Group (experimental group I), Traditional With Ladder Training Group (experimental group II) and control group was selected as the dependent variables. The subjects were tested to find out Motor Fitness variables namely, Speed and Agility. Experimental group I was participated in Traditional Training Group, Experimental group II was participated in Traditional With Ladder Training Group for the period of twelve weeks and control group not participate in any type of training. The data was collected before and after the training period and Analysis of co-variance (ANCOVA) used to test the adjusted post - mean difference among the experimental groups the adjusted post test result was found significant the scheffe's post- hoc test was used to determine the significance of the paired means differences. The level of significance for the study was chosen as 0.05.

KEYWORDS: *Traditional Training, Ladder Training, Motor Fitness Variables.*

INTRODUCTION

1. Sports

“Sport is a competitive physical activity, utilizing specialized equipment and facilities, with unique dimensions of time and space, in which the quest for records is of high significance” provides yet another perspective with his claim that sport should (a) be play like in nature, (b) involve some element of competition, (c) be based on physical prowess, (d) involve elements of skill, strategy and chance, and (e) have an certain outcome. These various interpretations of sport illustrate that a single definition is neither possible nor necessary. Using one or all of the definitions, we can create a workable concept of sport.

The general conclusion of Galton and Tice’s study was that “participation in sport not only makes the participant healthier, but also provides an enriched quality of life by stimulating participation in a whole range of non-sport leisure activities”. They felt for government and other agencies the policy implication of this research was clear-“greater emphasis should be placed on encouragement to take part in exercise as an important component of preventative health care” (David C Watt, 1998).

Sportsmen concentrate on the development of speed, strength, agility flexibility, endurance etc. as a part of preparation in their respective sports General motor abilities assist a sportsman in learning specific skills from a solid base 2 over which he can develop excellence in the particular game he is involved (Singh, 1991).

Ladder Training

Ladder training is the multi directional training because the elements of strength, power, balance, agility, co-ordination, core and joint stability foot speed, hand eye co-ordination, reaction time and mobility. Its component should be integrated on to daily training session. Ladder skill are fun functional ways to teach moment skill. By trinning the mind and body to understand a verty food combinations. There are four basic skills is used when training with ladder. Run skips shuffles and jump/hope. Ladder drills are fun functional ways to teach movement skill. Although linear and lateral moments are 8 bio mechanical simple combination can be complex and many time overwhelming for the athlete. Buy teaching main and body understand a verity of foot combination, change for confusion and sequent error decreases, ladder drills should be learned in slow controlled envoralmnt. Introducing movement skills to rapidly can ingrain poor motor patterns that may be difficult to override. Skilled moment should be optimized before drill is advanced. I try to incorporate 3 different types of drills. The first type of drills are steady state drill. These drill focus on quickness endurance and utilize a constant rhythm through out the ladder. Second type of drills are burst drills` these drills focus on the abilty to turn on are rapid burst of foot moment. The third type of drills are elastic response drills. These drills focus on improving the reactive speed components of the lower legs. Ladder drills are also called a speed ladder drills are very important for any sport where agility, leg explosive strength, aerobic capacity and speed are important sush as soccer basket ball or food ball it will gretly improve the player’s foot work which will improve players quickness, agility and co ordination after constantionly performing different speed ladder trining. Drill for agillty ladder training should be done right 9 after warming up so that your muscles are fresh and ready to give 100% under correct form (“ladder training is the, 2013.)

Traditional Training

Traditional training is the former and senior give some skills and technical as well as following in the game. It is called for traditional training. Traditional training is specifically referring to weight lifting programs that recommend basic movements with a set number of repetitions. The movements typically isolate one or two muscles and then work them to failure, and the goal is to create stronger, larger muscles that can handle greater weights and a larger number of repetitions over time. This article was provided by Find My Fitness Trainer, 2018.

Motor Fitness

Motor fitness is a term that describes an athlete's ability to perform effectively during sports or other physical activity. (Huang SH, 2007) started about motor fitness "An athlete's motor fitness is a combination of five different components, each of which is essential for high levels of performance. Motor fitness, or motor physical fitness, refers to how an athlete can perform at his or her sport, and involves a mixture of agility, coordination, balance, power, and reaction time. Improving this form of fitness is an indirect result of training in any of these attributes". All five components of motor fitness are essential for competing at high levels, which is why the concept is seen as an essential part of any athlete's training regime

Speed, Agility

Speed training involves development of a skill so that the technique is performed at a faster rate. To develop speed the skill must be practiced on a regular basis at a maximum or close to maximum rate of movement. Maximal running speed, for example, is developed by runs over short distances at maximum effort. The skill of moving at speed should, like all skills, be practiced before the athlete becomes fatigued. For this reason recovery times between repetitions and sets should be long enough to recover from any fatigue (Speed is, 2012).

Agility or nimbleness is the ability to change the body's position efficiently, and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength, endurance and stamina. In sports, agility is often defined in terms of an individual sport, due to it being an integration of many components each used differently (specific to all of sorts of different sports). Sheppard and Young (2006) defined agility as "a rapid whole body movement with change of velocity or direction in response to a stimulus" (Agility or, 2012).

Agility is the physical ability that enables a person rapidly to change body position and direction in a precise manner (Davis, B., Bull, R., Roscoe, J., Roscoe, D., 2000).

Statement of the Problem

The purpose of the study was to "effect of traditional training with and without ladder training on motor fitness variables of high school kho- kho players".

SIGNIFICANCE OF THE STUDY

1. The study was provide suitable traditional training with and without ladder training on high school kho- kho players.
2. The study was helpful to find out whether traditional training with and without ladder training and motor fitness variables are essential in the field of sports and games.

HYPOTHESES

- It was hypothesized that there may be a significant improvement on selected motor fitness variables (speed, agility) of high school kho-kho players due to the traditional training with and without ladder training.

DELIMITATION

1. This study was delimited to 60 high school boys Kho-Kho players, the age group ranged from 12 to 17 years.
2. The subject are equally divided into three group, randomly Experimental group I, Experimental group II, Control group.
3. The training programmed was delimited only 12 weeks.
4. The study was delimited to the motor fitness variables such as speed and agility.

LIMITATIONS

The subject 'previous training, health habits were not considered for this study.

- ❖ No special motivation techniques were used in this study.
- ❖ The student belonging to difference economic and educational background which might affect their performance has not been taken.
- ❖ Climate condition, ground condition and other environmental factors that might affect the study were also not taken into consideration.

METHODOLOGY

- ❖ The each group consisted of 20 subjects. The 60 subjects were selected at randomly and subjects divided three equal groups namely experimental group I, experimental group II and control group.
- ❖ The investigator selected motor fitness variables (speed, agility).
- ❖ Experimental group I(traditional with ladder training), experimental group II(traditional training) underwent respective training programme for the period of 12 week and control group not undergone any type of training.
- ❖ The data were collected by before and after training programme.
- ❖ The speed tested by 50 meteries dash and agility tested by shuttle run and scored as in time.

10. SELECTION OF THE VARIABLES

10.1. INDEPENDENT VARIABLES

The following were the independent variables selected for this study.

1. Traditional with ladder training
2. Traditional trianing

10.1.2. DEPENDENT VARIAABLES

The following were the dependent variables selected for this study.

10.1.2.1 MOTOR FITNESS VARIABLES

1. Speed
2. Agility

11. SELECTION OF THE TEST

S.NO	COMPONENTS	TEST ITEMS	UNITS
1	SPEED	50 Meteries Dash	Seconds
2	AGILITY	Shuttle Run	Seconds

RESULTS:

TABLE – II
COMPUTATION OF ANALYSIS OF COVARIANCE RESULTS ON SPEED AMONG
EXPERIMENTAL GROUP AND CONTROL GROUP

Test	TRADITION AL TRAINING GROUP	TRADITIO NAL WITH LADDER TRAINING GROUP	Contr ol Group	Source of Varianc es	Sum of Square s	df	Mean Square s	Obtain ed 'F' Ratio
Pre Test Mean	8.51	8.21	8.62	Between	1.77	2	0.89	1.37
SD	0.40	0.66	1.16	Within	36.87	57	0.65	
Post Test Mean	8.09	7.59	8.50	Between	8.32	2	4.17	6.63*
SD	0.41	0.69	1.12	Within	35.77	57	0.63	
Adjuste d Post Test Mean	8.03	7.80	8.35	Between	2.88	2	1.44	13.36*
				Within	6.03	56	0.11	

* Significant at 0.05 level of confidence.

Required table value at 0.05 level of significance for 2 & 56 and 2 & 57 degree of freedom = 3.19

Table II shows that the pre-test mean values of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group are 8.51, 8.21, and 8.62 respectively. And standard deviation values of experimental group I, experimental group II and control group are 0.40, 0.66, and 1.16 respectively. The obtained 'F' ratio for pre-test on speed is 1.37. It is lesser than the required table value of 2.76 for df 2 and 57 at 0.05 level of confidence on speed.

The post-test mean value on speed of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group are 8.09, 7.59 and 8.50 respectively. And standard deviation values of experimental group I, experimental

group II and control group are 0.41, 0.69 and 1.12 respectively. The obtained 'F' ratio for post-test on speed is 6.63. It is greater than the required table value of 2.76 for df 2 and 57 at 0.05 level of confidence on speed.

The adjusted post-test mean value on speed of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group are 8.03, 7.80 and 8.35 respectively. The obtained 'F' ratio for post-test on speed is 13.36. It is greater than the required table value of 2.76 for df 2 and 57 at 0.05 level of confidence on speed.

The result of the study indicated that there is significant difference among the Traditional training group, Traditional with ladder training group and control group on speed.

Whenever the obtained 'F' ratio of adjusted post-test mean was found to be significant, the investigator applied the Scheffe's post hoc test to find out the paired mean differences and it was presented in table -III

TABLE-III
SCHEFFE'S POST HOC TEST FOR THE DIFFERENCE BETWEEN
ADJUSTED POST-TEST MEAN OF SPEED

S.NO	TRADITIONAL TRAINING GROUP	TRADITIONAL WITH LADDER TRAINING GROUP	CONTROL GROUP	Mean Difference	Confidence Interval
1	8.03	7.80		0.23	0.29
2	8.03		8.35	0.32	0.29
3		7.80	8.35	0.55	0.29

*Significant at 0.05 level of confidence.

The table – III shows that the mean difference values between, experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) is 0.23 on speed. It is lesser than the confidence interval value of 0.29, it indicates that there is no significance difference between experimental group I and experimental group II on speed.

The mean difference value between, experimental group I (Traditional training group) and control group is 0.32 on speed. It is greater than the confidence interval value of 0.29, it indicates that there is a significance difference between experimental group I and control group on speed.

The mean difference value between, experimental group II (Traditional with ladder training group) and control group is 0.55 on speed, it is greater than the confidence interval value of 0.29, it indicates that there is significance difference between experimental group II and control group on speed.

The pre, post and adjusted post-test mean value of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group on speed were graphically represented in figure - I

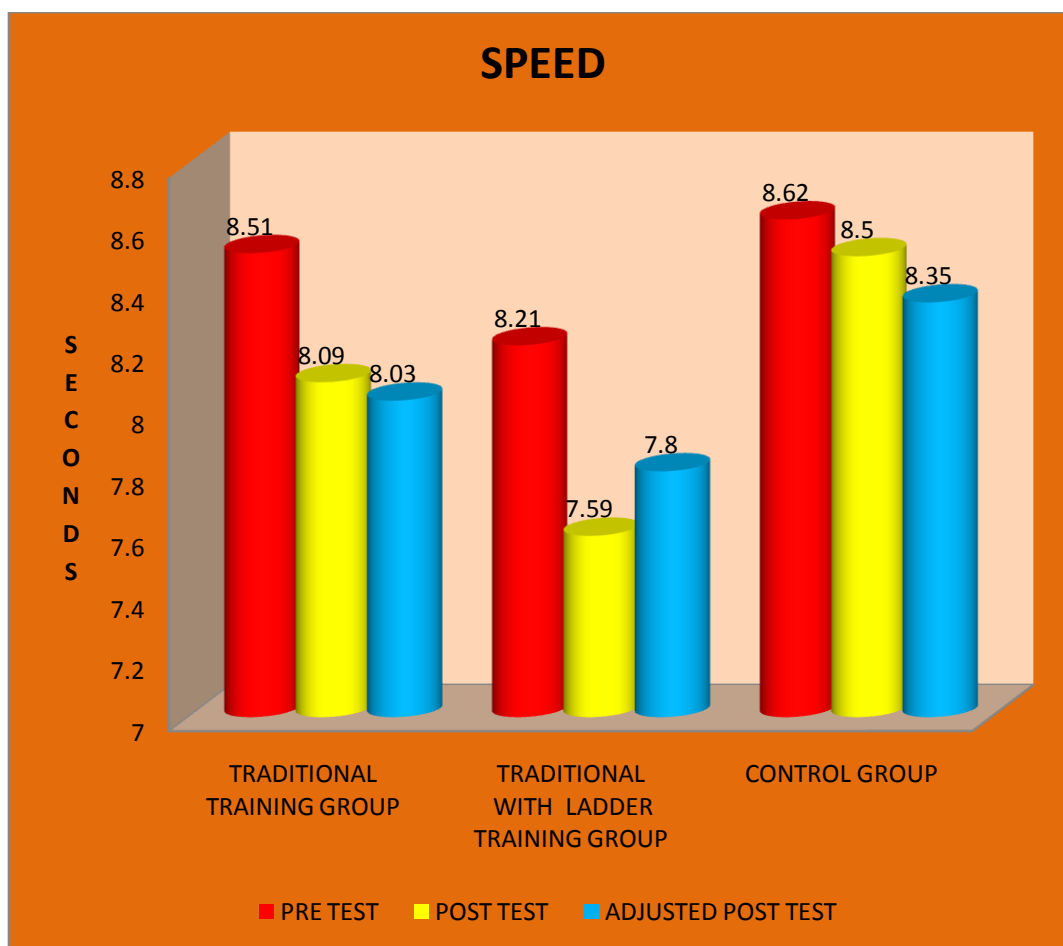


FIGURE-I
MEAN VALUES ON SPEED OF TRADITIONAL TRAINING GROUP
TRADITIONAL WITH LADDER TRAINING GROUP
AND CONTROL GROUP

TABLE – IV
COMPUTATION OF ANALYSIS OF COVARIANCE RESULTS ON AGILITY AMONG
EXPERIMENTAL GROUP AND CONTROL GROUP

Test	TRADITIO NAL TRAINING GROUP	TRADITIO NAL WITH LADDER TRAININ G GROUP	Contro l Group	Source of Variances	Sum of Squa res	df	Mean Squar es	Obtaine d 'F' Ratio
Pre Test Mean	10.44	10.73	10.88	Between	1.94	2	0.97	2.50
SD	0.52	0.65	0.69	Within	22.06	57	0.39	

Post Test Mean	10.08	10.14	10.85	Between	7.41	2	3.71	10.12
SD	0.55	0.52	0.73	Within	20.87	57	0.37	
Adjusted Post Test Mean	10.26	10.11	10.71	Between	3.77	2	1.89	12.48
				Within	8.46	56	0.15	

* Significant at 0.05 level of confidence.

Required table value at 0.05 level of significance for 2 & 56 and 2 & 57 degree of freedom = 3.19

Table IV shows that the pre-test mean values of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group are 10.44, 10.73, and 10.88 respectively. And standard deviation values of experimental group I, experimental group II and control group are 0.52, 0.65, and 0.69 respectively. The obtained 'F' ratio for pre-test on Agility is 2.50. It is lesser than the required table value of 2.76 for df 2 and 57 at 0.05 level of confidence on Agility.

The post-test mean value on Agility of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group are 10.08, 10.14 and 10.85 respectively. And standard deviation values of experimental group I, experimental group II and control group are 0.55, 0.52 and 0.73 respectively. The obtained 'F' ratio for post-test on Agility is 10.12. It is greater than the required table value of 2.76 for df 2 and 57 at 0.05 level of confidence on Agility.

The adjusted post-test mean value on Agility of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group are 10.26, 10.11 and 10.71 respectively. The obtained 'F' ratio for post-test on Agility is 12.48. It is greater than the required table value of 2.76 for df 2 and 57 at 0.05 level of confidence on Agility.

The result of the study indicated that there is significant difference among the Traditional training group, Traditional with ladder training group and control group on Agility.

Whenever the obtained 'F' ratio of adjusted post-test mean was found to be significant, the investigator applied the Scheffe's post hoc test to find out the paired mean differences and it was presented in table -V

TABLE-V
SCHEFFE'S POST HOC TEST FOR THE DIFFERENCE BETWEEN
ADJUSTED POST-TEST MEAN OF AGILITY

Adjusted Post – test Means					
S.NO	TRADITIONAL TRAINING GROUP	TRADITIONAL WITH LADDER TRAINING GROUP	CONTROL GROUP	Mean Difference	Confidence Interval
1	10.26	10.11		0.16	
2	10.26		11.71	0.45	
3		10.11	11.71	0.60	

*Significant at 0.05 level of confidence

The table – V shows that the mean difference values between, experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) is 0.16 on Agility. It is lesser than the confidence interval value of 0.29, it indicates that there is no significance difference between experimental group I and experimental group II on Agility.

The mean difference value between, experimental group I (Traditional training group) and control group is 0.45 on Agility. It is greater than the confidence interval value of 0.29, it indicates that there is a significance difference between experimental group I and control group on Agility.

The mean difference value between, experimental group II (Traditional with ladder training group) and control group is 0.60 on Agility, it is greater than the confidence interval value of 0.29, it indicates that there is significance difference between experimental group II and control group on Agility.

The pre, post and adjusted post-test mean value of experimental group I (Traditional training group), experimental group II (Traditional with ladder training group) and control group on Agility were graphically represented in figure - II

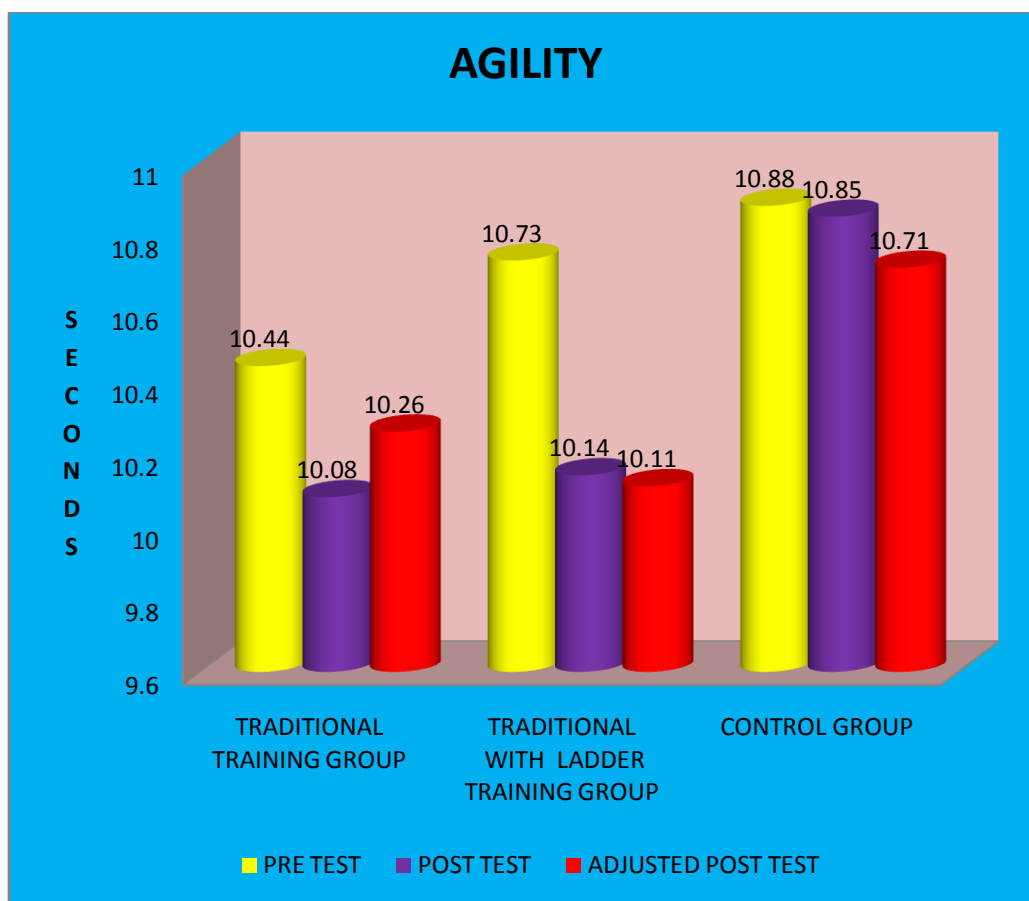


FIGURE-II
MEAN VALUES ON AGILITY OF TRADITIONAL TRAINING GROUP
TRADITIONAL WITH LADDER TRAINING GROUP JUMP ROPE TRAINING
GROUP AND CONTROL GROUP

12. DISCUSSION ON FINDINGS

The results of this study revealed that the experimental group I (traditional training group), experimental group II (traditional with ladder training group) were better than the control group on speed and agility.

The experimental group II (traditional with ladder training group) is better than the experimental group I (traditional training group) on speed and agility.

13. CONCLUSIONS

The following conclusions were drawn from the results of the study.

10. It was conclude that the experimental group II (traditional with ladder training group), experimental group I (traditional training group) were significantly improved on than the control group on speed.
11. It was conclude that the experimental group II (traditional with ladder training group), experimental group I (traditional training group) were significantly improved on than the control group on agility.

12. It was conclude that the experimental group II (traditional with ladder training group) is better than the experimental group I (traditional training group) on speed.
13. The experimental group II (traditional with ladder training group) is better than the experimental group I (traditional training group) on agility.

REFERENCE

- Harrison, A.J., & Bourke, G. (2004). The effect of resisted sprint training on speed and strength performance in male rugby players. *J Strength Cond Res*, 18:2, p-316-23.
- Jones, P., Bampouras, T.M., & Marrin, K. (2009). An investigation into the physical determinants of change of direction speed. *Percept Mot Skills*, 108:3, p-873-7.
- Lemmink, K.A., Verheijen, R., & Visscher, C. (2004). The Discriminative Power of the Interval Shuttle Run Test and the Maximal Multistage Shuttle Run Test for Playing Level of Soccer. *Journal of Sports Medicine and Physical Fitness*, 44:3, P-233-9.
- Milanovic, Z., Sporis, G., Trajkovic, N., James, N., & Samija, K. (2013). Effects of a 12 Week SAQ Training Programme on Agility with and without the Ball among Young Soccer Players. *J Sports Sci Med*, 12:1, p-97-103.
- Oxyzoglou, N., Kanioglou, A., & Ore, G. (2005). Velocity, agility, and flexibility performance after handball training versus physical education program for preadolescent children. *J Sports Med Phys Fitness*, 45:3, p-284-90.

Book

- Brown LE, Ferrigno VA, and Santana JC. (2000). *Training for Speed, Agility and Quickness*. Champaign, Illinois: Human Kinetics.
- Bompa, T.O. (1999). *Periodization: Theory and Methodology of Training* (4th ed), Champaign, Illinois: Human Kinetics.
- Dick, Frank W., *Sports Training Principles*. Great Britain: University Press Cambridge.1992.
- David, H. Clarke and H. Harrison Clarke, *Research Process in Physical Education*. (New Jersey :Prentice Hall Inc., 1976), p.175



“INNOVATIVE PACKAGE OF PHYSICAL TRAINING DETRAINING AND RETRAINING ON SPEED AMONG COLLEGE MEN SPRINTERS”

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ABSTRACT

The purpose of the study was to find out the Innovative package of physical training, detraining and retraining on speed among college men sprinters. To achieve the purpose of this study, 60 college men sprinters were selected as subjects from different colleges in Chennai, who had represented their colleges in inter-collegiate athletic meet. The selected subject's age group ranged from 19 to 24 years. The selected package of physical exercises was administered to the sprinters in a circuit manner at different stations for eight weeks and measured of their speed and performance of 100 meters run time which formed the training effects. Measurements data were collected on selected variables after two weeks on completion of training, which was considered as the short term detraining effect. Measurements data were collected on selected variables after four weeks completion of training, which was considered as long term detraining effect. After the completion of detraining phase, the subjects were again retrained following the selected package of physical exercises. After the completion of two weeks retraining, measurements taken on speed and 100 meter run time which were considered as short term retraining. On completion of four weeks of retraining, measures were taken and considered as long term retraining. The differences among means of initial, final, short term detraining, long term detraining, short term retraining and long term retraining were subjected to statistical treatment using repeated analysis of variance (Repeated ANOVA). In all cases to test the hypothesis, 0.05 level was fixed. It was concluded that. The package of physical training would improve the speed and 100 meter performance compared to pre training levels of college men 2. The long term detraining, retraining would significantly impact selected speed and 100meter performance compared to pre training levels of college men sprinters.

KEYWORDS: Speed, Training, Detraining, Retraining,

INTRODUCTION

Athletics is the mother of all sports and so it has assumed great importance in recent years. Athletics is a collective name for physical exercise and game requiring skill and activity. The preparation of an athlete for achievement today is a complex dynamic matter, characterized by a high level of physical and physiological efficiency and the degree of perfection of necessary skills, knowledge and proper teaching tactics. An athlete arrives at this state only as a result of corresponding training sports activity directed at steadily enhancing the preparation of an athlete and grooming him for a higher level achievement. Athletic performance has dramatically progressed over the past few years. Performance levels unimaginable before are now common place, and the number of athletes capable of outstanding results are increasing. One factor is that athletics is a challenging field, and intense motivation has encouraged long, hard hours of work. Also, coaching has become more sophisticated, partially from the assistance of sport specialists and scientists. A broader base of knowledge about athletes now exists, which is reflected in training methodology (Bompa, 1999). Sprint is known as short running in athletics. They are roughly classified as events in which top runners will not have to “pace themselves”, but can run as fast as possible for the entire distance. These are often some of the more glamorous events in the Olympic Games. Basic speed is the hardest aspect to improve. A list of factors associated with successful sprinting would accurately include speed of muscular contraction, strength, flexibility, local muscular endurance, looseness and good technique.

TRAINING

The term “training” is widely used in sports. There are however some disagreements among sports coaches and also sports scientists regarding the exact meaning of the word. Some experts, especially belonging to sports medicine understand sports training as basically doing physical exercise, several terms used in trainings for example, strength training, interval training, bench step training, technical training and statistical training reflect the line of thinking. The Basic training procedures will serve better when utilized with modification suited to individuals or a group dealt with. The training programme should look into improving the performance of the athletes and at the same time should prevent injury taking place (Davis, 2000).

DETRAINING

Detraining refers to the bodily effect experienced when one takes an extended break from regular, vigorous fitness training. Fitness levels and muscle mass can decline during a break that lasts between two to four weeks. While this sort of long-term break may reduce current fitness levels, it may also offer long-term benefits if the person starts retraining, allowing them to achieve higher levels of fitness than before detraining (Oxford Dictionary of Sports Science & Medicine, 2007).

RETRAINING

Retraining should begin slowly, allowing the body to acclimatize to regular physical exercise. Activity may begin with walking everyday and lifting light weights. To gradually increase intensity one may alternate days of walking with more intense cardio activity and longer intervals of weight training. Over the course of several months, training regimens may be increased to eventually exceed the past levels (Dunn, 2001).

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the Innovative package of physical training, detraining and retraining on speed among college men sprinters

HYPOTHESES

It is hypothesized that:

1. The package of physical training would improve the speed and 100 meter performance compared to pretraining levels of college men
2. The long term detraining, retraining would significantly impact selected speed and 100meter performance compared to pretraining levels of college men sprinters.

METHODOLOGY

The purpose of the study was to find out the Innovative package of physical training, detraining and retraining on speed among college men sprinters. To achieve the purpose of this study, 60 college men sprinters were selected as subjects from different colleges in Chennai, who had represented their colleges in the inter-collegiate athletic meets. The selected subjects' age groups were ranging from 19 to 24 years. The selected package of physical exercises was administered to the sprinters in a circuit manner at different stations for eight weeks and measured of their speed and performance of 100 meters run time which formed the training effects. Measurements data were collected on selected variables after two weeks on completion of training, which was considered as the short term detraining effect. Measurements data were collected on selected variables after four weeks completion of training, which was considered as long term detraining effect. After the completion of detraining phase, the subjects were again retrained following the selected package of physical exercises. After the completion of two weeks retraining, measurements taken on speed and 100 meter run time which were considered as short term retraining. On completion of four weeks of retraining, measures were taken and considered as long term retraining. The differences among means of initial, final, short term detraining, long term detraining, short term retraining and long term retraining were subjected to statistical treatment using repeated analysis of variance (Repeated ANOVA). In all cases to test the hypothesis, 0.05 level was fixed.

TABLE I
LIST OF CRITERION VARIABLES AND STANDARDIZED TEST

Variables	Standardized test
1.Speed	50 meters run
.100 meters run	100 meters run

TABLE II
TRAINING PROGRAMME FOR EIGHT WEEKS

Week	Session	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
I to II	Morning	Slow continuous running	Plyometric training	Medium continuous running	Running ABC	Medicine ball exercises	Beach run
	Evening	Weight training (A)	Running ABC	Weight training(B)	Fartlek training	Warming – up and game	Rest
III to V	Morning	Medium continuous running	Plyometric training	Weight training(B)	Fast continuous running	Interval training	Hill training
	Evening	Weight training (A)	Interval training	Running ABC	Circuit training	Running ABC	Long warming up and Games
VI to VIII	Morning	Reaction Running	Plyometric training	Weight training(B)	Circuit training	10 minutes warming up and stretching exercises	Rest
	Evening	Weight training (A)	Track training	Long warming up and stretching exercises	Track training	Sprint Training	Track training

TABLE III
RETRAINING PROGRAMME FOR FOUR WEEKS

WEEK	SESSION	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6
I to II	Morning	fast continuous running	Explosive training	Weight training(B)	Minutes running	Interval training	Hill training
	Evening	Weight training (A)	Interval training	Running ABC	Circuit training	Running ABC	Long warming up and Games
III to IV	Morning	Reaction Running	Explosive training	Weight training(B)	Circuit training	10 minutes warming	Rest

WEEK	SESSION	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6
						up and stretching exercises	
	Evening	Weight training (A)	Track training	Long warming up and stretching exercises	Track training	Sprint Training	Track training

STATISTICAL TECHNIQUE

Measurements were collected on selected variables prior to experimental treatment (initial scores), after eight weeks on completion of physical training, which was considered as post training effect, after two weeks on completion of training, which was considered as the short term detraining effect. Measurements were collected on selected variables after four weeks after completion of training, which was considered as long term detraining effect. After the completion of detraining phase, the subjects were again retrained following the selected package of physical exercises. After the completion of two weeks retraining, measurements were taken on selected variables, which were considered as short term retraining. On completion of four weeks of retraining measures were taken on selected variables which were considered as long term retraining. The differences among means of initial, final, short term detraining, long term detraining, short term retraining and long term retraining were subjected to statistical treatment using repeated analysis of variance (Repeated ANOVA). When the F ratio was found to be significant, Scheffe's post hoc test was applied to find out the paired mean significant difference (Thirumalaisamy, 1998).

TABLE IV
COMPUTATION OF REPEATED MEASURES ANOVA DUE TO PACKAGE OF PHYSICAL TRAINING, DETRAINING AND RETRAINING ON SPEED OF COLLEGE MEN SPRINTERS

Source	Sum of Squares	Df	Mean Squares	F
Subjects	28.85	59.00		27.99*
Trials	15.23	5.00	3.05	
Residual	32.10	295.00	0.11	
Total	45.72	359.00		

Table F value required at 0.05 level is 2.25 * Significant

The obtained F value 27.99 is much greater than the required table F value of 2.25 to be significant at 0.05 levels. Hence, it is proved that there was a significance difference in speed due to physical training, detraining and retraining. Since significant differences were found, the

obtained results were further subjected to post hoc analysis using Scheffe's test and results are presented in Table IV.

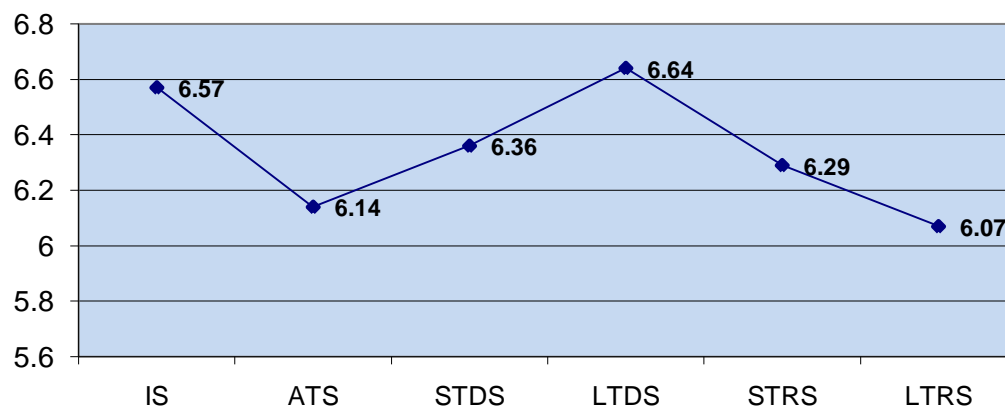
TABLE V
MULTIPLE COMPARISONS SHOWING PAIRS OF MEANS SCORES OF SPEED UNDER DIFFERENT PHASES OF TRAINING, DETRAINING AND RETRAINING

Mean Scores Under Different Phases						Mean Difference	Reqd C.I
IS	ATS	STDS	LTDS	STRS	LTRS		
6.57	6.14					0.43*	0.29
6.57		6.36				0.21	0.29
6.57			6.64			0.06	0.29
6.57				6.29		0.28	0.29
6.57					6.07	0.50*	0.29
	6.14	6.36				0.22	0.29
	6.14		6.64			0.49*	0.29
	6.14			6.29		0.15	0.29
	6.14				6.07	0.07	0.29
		6.36	6.64			0.27	0.29
		6.36		6.29		0.07	0.29
		6.36			6.07	0.29*	0.29
			6.64	6.29		0.34*	0.29
			6.64		6.07	0.56*	0.29
				6.29	6.07	0.22	0.29

* Significant at 0.05 level

IS: Initial Score; ATS: After Training Score; STDS: Short Term Detraining Score; LTDS : Long Term Detraining Score; STRS : Short Term Retraining Score; LTRS : Long Term Retraining Score Table V shows the following paired mean comparisons were significant at 0.05 levels as the obtained mean differences were greater than the required value of 0.29.

Figure 1
Showing line graph on mean scores of speed under different phases of training among college men sprinters



IS: Initial Score; ATS: After Training Score; STDS: Short Term Detraining Score; LTDS : Long Term Detraining Score; STRS : Short Term Retraining Score; LTRS : Long Term Retraining Score

TABLE VI
COMPUTATION OF REPEATED MEASURES ANOVA DUE TO PACKAGE OF
PHYSICAL TRAINING, DETRAINING AND RETRAINING ON PERFORMANCE IN 100
METERS RUN OF COLLEGE MEN SPRINTERS

Source	Sum of Squares	df	Mean Squares	F
Subjects	33.86	59.00		28.65*
Trials	18.58	5.00	3.72	
Residual	38.26	295.00	0.13	
Total	53.54	359.00		

Table F value required at 0.05 level is 2.25 * Significant

The obtained F value 28.65 is much greater than the required table F value of 2.25 to be significant at 0.05 level. Hence, it is proved that the selected package of physical training, detraining and retraining significantly improved performance in 100 meter run of the college men sprinters. Since significant differences are found, the obtained results are further subjected to post hoc analysis using Scheffe's test and results are presented in Table VI.

TABLE VII
MULTIPLE COMPARISONS SHOWING PAIRS OF MEANS SCORES OF PERFORMANCE IN
100 METERS RUN UNDER DIFFERENT PHASES OF TRAINING, DETRAINING AND
RETRAINING

Mean Scores Under Different Phases						Mean Difference	Reqd C.I
IS	ATS	STDS	LTDS	STRS	LTRS		
12.07	11.60					0.47*	0.22
12.07		11.83				0.24*	0.22
12.07			12.13			0.06	0.22
12.07				11.78		0.29*	0.22
12.07					11.50	0.56*	0.22
	11.60	11.83				0.23*	0.22
	11.60		12.13			0.53*	0.22
	11.60			11.78		0.18	0.22
	11.60				11.50	0.10	0.22
		11.83	12.13			0.30*	0.22
		11.83		11.78		0.05	0.22

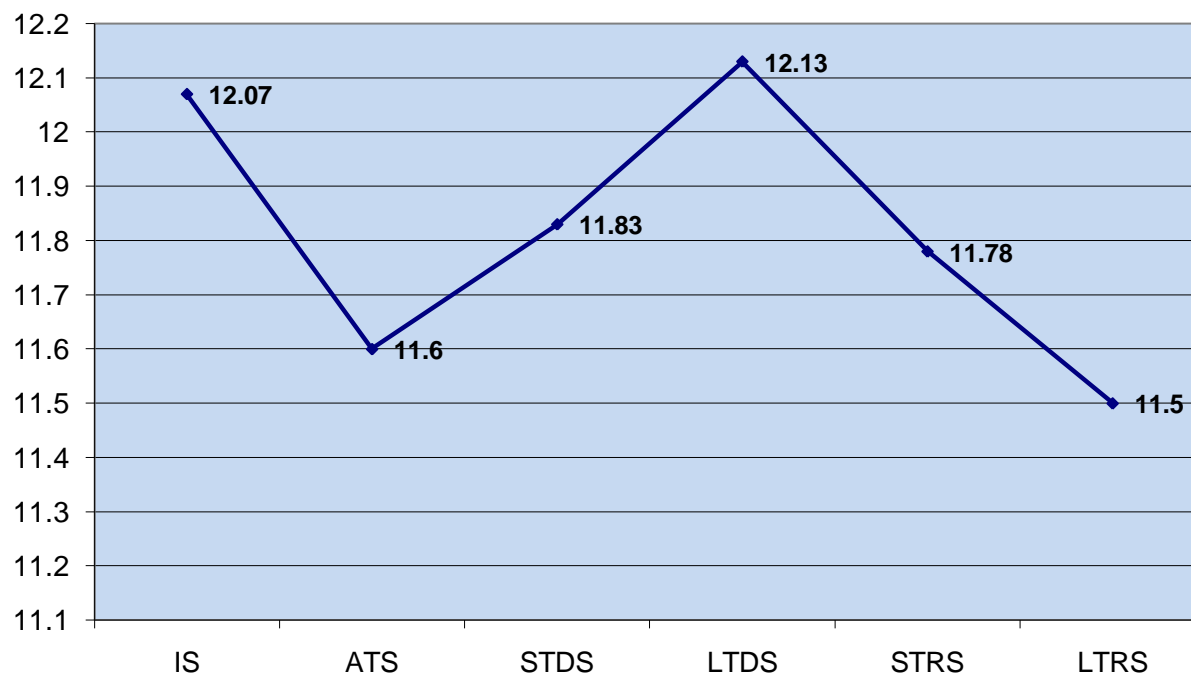
		11.83			11.50	0.32*	0.22
			12.13	11.78		0.36*	0.22
			12.13		11.50	0.63*	0.22
				11.78	11.50	0.27*	0.22

* Significant at 0.05 level

IS: Initial Score; ATS: After Training Score; STDS: Short Term Detraining Score; LTDS: Long Term Detraining Score; STRS: Short Term Retraining Score; LTRS: Long Term Retraining Score Table VII shows the following paired mean comparisons are significant at 0.05 level as the obtained mean differences are greater than the required value of 0.22.

Figure 2

Showing line graph on mean scores of performance in 100 meters run under different phases of training among college men sprinters



IS: Initial Score; ATS: After Training Score; STDS: Short Term Detraining Score; LTDS: Long Term Detraining Score; STRS: Short Term Retraining Score; LTRS: Long Term Retraining Score

CONCLUSIONS

1. It was concluded that the package of physical training, detraining and retraining improve the speed and performance of 100 meter run.
2. The long term detraining, retraining would significantly impact selected speed and 100meter performance compared to pretraining levels of college men sprinters.

REFERENCES

Davis,B.. (2000), *Physical Education and the Study of Sport*. UK: Harcourt Publishers Ltd.

Hardayal Singh (1991), **Science of Sports Training**, D.V.S. Publications, New Delhi, P. 65

Richard A. Schmidt and Craig. A, (2000), **Motor learning and Performance a situation based learning approach**, Human Kinetic Publishers, INC.

Bompa, T. (1999). **Periodization Training for Sports**. Human Kinetics: Champaign, IL.

Baker,et al. (2005), “Examination of strength training and detraining effects in expiratory muscles”, **Journal of Speech, Language and Hearing Research**

Brain dare and Beverly Kearney, (1988), *Speed Training, Track Technique*, Vol.103, PP.3289-3292.

Dauty M, et.al. (2010), “Effects of running retraining after knee anterior cruciate ligament reconstruction”, **Ann Phys Rehabil Med.**, Vol.53(3), PP.150-61.

Dauty M, et al. (2005), “Detraining and retraining after injury in a high-level cyclist”, **Ann Read apt medicine physiology**, Vol.48 (2), PP.93-100.



SPORTS AS A CATALYST IN WOMEN EMPOWERMENT

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ABSTRACT

Gender inequity varies significantly, in both degree and in the forms it takes, from country to country. Some countries have made significant progress in reducing inequities through targeted actions to change gender norms, legislate and protect human rights, and ensure access to education, health and other services. However, disparities that affect women are widespread in every region of the world and are a significant obstacle to achieving the Millennium Development Goals. Achieving gender equity and empowerment of women requires systematic and sustained attention in all policy areas. Sport is an integral part of the culture of almost every nation. However, its use to promote gender equity and empower girls and women is often overlooked because sport is not universally perceived as a suitable or desirable pursuit for girls and women. Existing social constructs of masculinity and femininity — or socially accepted ways of expressing what it means to be a man or woman in a particular socio-cultural context — play a key role in determining access, levels of participation, and benefits from sport. Sport programs can enhance the empowerment process by challenging gender norms, reducing restrictions and offering girls and women greater mobility, access to public spaces, and more opportunities for their physical, intellectual and social development. By involving families, community leaders, and boys and men in gender education, changes to gender norms can benefit men and women alike. Sport can also provide girls and women with powerful role models, leadership skills and experience that they can transfer to other domains such as their family life, civic involvement, and advocacy. All of these beneficial effects are self-reinforcing, and may also make sporting opportunities for girls and women more sustainable over time.

KEYWORDS: Gender, Work Participation Rate, Sports, Women Empowerment, Millennium Development Goals, Self Esteem, Gender Norms, Physical And Mental Health, Social Inclusion And Integration.

INTRODUCTION

Women occupied a respectable place and enjoyed high status in the Vedic period. But, with the passage of time their position started degraded at a faster rate. The social evils like Pardha, Child marriage, dowry, discrimination against girl child, Sati and such other practise disadvantageous to women crept into the system. Gender disparity can be seen in every field. Gender is a social construct that outlines the roles, behaviours, activities and attributes that a particular society believes are appropriate to men and women. It is a term used to describe both the principle and practice of fair and equitable allocation of resources to, and opportunities for men and women. The plight of women in India is reflected in the adverse sex ratio (number of females per thousand males) for more than a century given in the table as under.

Sex ratio in India 1901-2011

Year	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
Sex ratio	972	964	955	950	945	946	941	930	934	927	933	940

Source: Compiled from the Census data

We can see wide disparity in the working participation rate (Proportion of workers to the total population) between male and female.

Workforce participation Rate-India

	Rural		Urban	
	Female	Male	Female	Male
1972-73	31.8	54.5	13.4	50.1
1993-94	32.8	55.3	15.5	52.1
1999-2000	29.9	53.1	13.9	51.8
2004-05	32.7	54.6	16.6	54.9
2009-10	26.1	54.7	13.8	54.3

Source: National Sample Survey data

From the above table it can be seen that the female workforce participation Rate-India is showing a declining trend since 1993-94 except between the year 2002 and 2006.

According to the latest survey conducted in 2009-10 by the NSSO among the Indian states, the highest unemployment Rate based on current Daily Status approach was estimated in Kerala(16.7%) followed by Nagaland (15%) Tripura(14.9%) Tamil Nadu(11.7%) and Orissa (7.9%). At the national level the unemployment rate under current Daily Status approach was estimated at 6.6% with male 6.1% and Female 8.2%.

Work participation rate in Kerala, 2011

	Rural WPR	Urban WPR
Male	53.6	51.8
Female	20.2	16.0

Source: Nationa Sample Survey Data

The above cited facts clearly points out the status of women still need improvements.

Gender equity eliminates discriminatory practices that are barriers to full participation for either gender. Gender equity does not necessarily mean that everyone is treated as equal, or identical manner. In fact, gender equity means changing responses to, and treatment of men and women to ensure that gender is a neutral factor when accessing resources, rights and opportunities.

Women empowerment through sports

Empowering women and gender equity produces tangible development benefits. These benefits extend beyond women to their families and through their children to the next generation. Women empowerment means to the process through which women gain the confidence, strength and in some context the information and skills needed to make strategic choices to improve their lives. Globally, women are particularly disadvantaged by gender constraints which prevent them fully realising their rights, accessing resources and opportunities.

Sports are an integral part of the culture of almost every nation. However, its use to promote gender equity and empower girls and women is often overlooked because sports is not universally perceived as a suitable or desirable pursuit for girls and women. Existing racial constraints of masculinity and femininity or socially accepted ways of expressing what it means to be a man or woman in a particular socio-cultural context-play a key role in determining access, levels of participation and benefits from sports. It is true in all countries that girls and women are less likely than boys and men to participate in Sports and sports continue to be dominated by males. This is not because girls and women do not wish to participate., but because of :

- Power
- Heavy domestic demands
- Safety concerns
- Inadequate sports and recreational facilities
- Few opportunities for physical education and skill development

Women's sports include amateur and professional competitions in virtually all sports. Female participation in sports rose dramatically in the 20th century, especially in the last quarter, reflecting changes in modern societies that emphasised gender parity. Although the level of participation and performance still varies greatly by country and by sports, women's sports leave broad acceptance thorough out the world. Women and girl athletes have yet to reach parity with men. Women are still only about one-third of interscholastic and intercollegiate athletes receive less than 26% of college sports operating budgets.

Women's development always remained central issue in the development process although there have been various shifts in women's development policy approaches. Based on these shifts Moser has classified women's development approaches into 5 categories. These are termed as welfare to equity, to anti poverty to efficiency to empowerment. This is true to Indian context also.

Welfare → Equality → Efficiency → Equity → Empowerment

Research on sports, gender and development indicates that sports can empower women and girls by:

- Enhancing health and well being
- Fostering self-esteem and empowerment
- Facilitating social inclusion and integration
- Challenging gender norms
- Providing opportunities for leadership and achievement

1. Enhancing health and well being:

Through structured sports programmes, girls and women can become more physically active, benefiting their physical and mental health including reduced risk they suffer from chronic diseases, depression and anxiety and engaging in health risk behaviour. In order to reducing risk in connection with sexual and reproductive health sports become a power health information and education platform.

2. Fostering self esteem and empowerment:

Sport help to improve self esteem among women by giving opportunities:

- a. To learn new skills
- b. To engage in positive relationship
- c. To acquire achievements
- d. To engage in volunteer service
- e. To receive public recognition

3. Facilitating social inclusion and integration:

Participation in sports reduces social isolation and exclusion of women and girls by providing

- a. Safe places to gather
- b. Help them to build social networks
- c. Offer social support

4. Challenging gender norms:

Sports enhance the empowerment of women by:

- a. Challenging gender norms
- b. Reducing restrictions and offering girls and women greater mobility
- c. Access to public places
- d. More opportunities for their physical intellectual and social development
- e. Enhancing leadership skills and experience

The Millennium Development Goals, have become the guiding framework for all development efforts. The contribution of sports to achieve Millennium Development Goals related to women empowerment is outlined in the following table:

MDG and contribution of sports related to women empowerment

	MDG	Contribution of sports
1	Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> • Acquisition of transferable life skills leading to increased employability through sports participation and coaching • Connection to community services • Reduced risk to diseases through access to health information
2	Achieve universal primary education	<ul style="list-style-type: none"> • Incentives and support for girls to enrol in school • Alternative education opportunities through sports-based community education programme for girls who cannot attend school
3	Promote gender equality and empowerment	<ul style="list-style-type: none"> • Increased opportunities for social interaction and relationship • Access to leadership opportunities and experience • Increased self esteem, self confidence and sense of control over their bodies • Positive changes in gender norms
4	Reduce child mortality	<ul style="list-style-type: none"> • Improved education and access to health information for young mothers, leading to improved health and well being of their children • Reduction in child deaths and disability from measles, malaria and polio as a result of sport-based vaccination and prevention campaigns aimed at women. • Lower likelihood of female infanticide due to greater acceptance of female children
5.	Improve maternal health	<ul style="list-style-type: none"> • Improved access to reproductive health information and services
6	Combat HIV & AIDS, malaria & other diseases	<ul style="list-style-type: none"> • Reduced risk of HIV infection as a result of sport programmes aimed at prevention education and empowerment of girls
7	Develop a global partnership for development	<ul style="list-style-type: none"> • Global sports and development partnerships and increased networking among governments, donors, NGOs and sport organizations worldwide to advance sport for development and peace knowledge, policies and programmes.

Kerala Scenario

Kerala has been different from the rest of the country in terms of the indicators of women's development. Kerala has a favourable sex ratio of 1084, while the all India figure stands at 940 as per the 2011 census. Similarly in terms literacy, life expectancy and mean age at marriage, women in Kerala have a higher score when compared with women in the rest of the country. As

per the 2011 census Kerala's female literacy is 92% , while the corresponding figure at the national level is only 65%. Life expectancy of female in Kerala as per the latest estimate is 76.3 years where as 64.2 years is the national level. All these favourable circumstances paved the way for the outstanding achievement of Kerala in terms of women's development.

In the field of sports also Kerala women makes tremendous contributions. Out of 16 Arjuna Award Winners in the state 14 are women. P.T.Usha, often called as the 'Queen of Indian track and field' and nick named as 'Payyoli express' is Kerala's pride. She has been associated with Indian athletics since 1979. She is regarded as one of the greatest athlete India has never produced. Records shows an influx of girl athletes in Kerala's school meets beginning in the 80s. Sports became a better career option for the girls of Kerala too. M.D.Valsamma, Shiny Wilson, Anju Bobby George, Beenamol, Preeja Sreedharan etc became Kerala's pride through sports. They got social acceptability and increased status in the society. Today, so many women and girls are participating in sports and games in the state. This will help them to improve confidence, economic independence, improved health and above all social acceptance.

In spite of the benefits, the successful implementation of sport programmes aimed at women empowerment involves many challenges and obstacles. Not only do girls and women have limited time available for sport, but there is often little value placed on sports activities for girls by their families, by girls themselves, and by their communities. To overcome these challenges, and to convince key stakeholders about the benefits of sports programmes for women empowerment, evidences to support the benefits must be documented.

CONCLUSION

Despite the risks associated with sports and the completed challenges inherent in its use to address gender inequity, sports can be catalyst that liberates girls and women. Sport can lead to a more egalitarian world by unleashing the productive, intellectual and social power of women.

REFERENCES

1. European Commission: White Paper on Sport.COM (2007) 391. p.7Meier, Marianne (2005). Gender Equity, Sport and Development. Switzerland: Swiss Academy for Development
2. Hanna, "Challenging the Gender Order"(Keynote speech to the Fourth World Conference on Women and sport,, Kamamoto, Japan, 11-14 May 2006
3. Houseblas, H and Downs, D "Comparison of Body Image between Athletes and Non-Athletes. A metro-Analytic Review", 2001, Journal of Applied Sport Psychology, 13, PP 326-339.
4. Jaumotte, F (2004): "Labour Force Participation of women: Empirical Evidence on the Role of Policy and other Determinants in OECD countries" OECD Economic Studies, No.37.
5. Sport for development and Peace International Working Group (Governments in Action)
6. UNDP (1990), "Human Development Report 1990", New York, Oxford University press.
7. UNICEF, Millennium Development Goals, online: UNICEF<<http://www.unicef.org/mdg/gender.html>>. (date accessed April 28, 2008)



DEVELOPMENT OF FUNCTIONAL FOOD FOR THE MANAGEMENT OF OBESITY

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ABSTRACT

Obesity and excessive weight gain are one of the leading risk factors for the onset of various diseases and disorders. At least 2.8 million adults die each year due to obesity-related complications. With an alarming increase in the prevalence of obesity, both nutrition and exercise play a key role in the prevention of obesity and its control. Functional food interventions are currently being investigated on a large-scale basis as potential treatments for obesity and weight management. The study was envisaged to find out the lipase inhibition activity of selected herbs and develop a functional food for the management of obesity. Ten antiobesity herbs were selected and downstream analysis was done and lipase inhibition activity was analyzed. Among the selected herbs the herb with maximum lipase inhibition activity was made into biomolecule concentrate and used as an ingredient for the development of functional food. By using dhal as base, bran of cereals and millets (for fiber content) and biomolecule concentrate of the herb the functional food was developed. This functional food when supplemented to obese individuals would help to reduce the body weight without compromising the energy and nutritional requirements

KEYWORDS: Biomolecule, Interventions, Prevalence, Obesity-Related

INTRODUCTION

Obesity and excessive weight gain are one of the leading risk factors for the onset of various diseases and disorders. At least 2.8 million adults die each year due to obesity-related complications. In addition, 44 per cent of the diabetes prevalence, 23 per cent of the ischemic heart disease cases and 7 per cent to 41 per cent of certain cancer cases are attributable to excessive weight gain and obesity (Cencic 2010).

With an alarming increase in the prevalence of obesity, both nutrition and exercise play a key role in the prevention of obesity and its control. Functional food interventions are currently being investigated on a large-scale basis as potential treatments for obesity and weight management.

Functional, health-enhancing foods, or nutraceuticals, are food-type products that influence specific physiological functions in the body. This function provides benefits to health, well-being, or performance beyond regular nutrition, and products of this nature are marketed and consumed for these value-added properties (Kasbia 2005). Obesity is a growing problem which is known to have hazardous issues on an individual's health. Herbal medicine can help one deal with the problem of obesity very effectively without consuming much time, efforts and it is harmless. (Benny, 2015)

By considering the above facts the study was framed with the following objective to find out the lipase inhibition activity of selected herbs and develop a functional food for the management of obesity.

METHODOLOGY

Scientific literature on several herbs was reviewed to identify herbs which help in the management of obesity. Out of these 10 herbs were selected based on their availability and affordability to analyze the lipase inhibition activity. They are *Andrographis paniculate* (Siriyangai), *Tinospora Cardifolia* (Seenthil Kodi), *Cyperus Rotundus* (Korai Kizhangu), *Saraca asoca* (Ashoka pattai), *Asparagus Officinallis* (Sathavari), *Tribulus Terrestris* (Nerunji), *Hygrophila Auriculate* (Neermuli), *Terminalia Chebula* (Kadukkai), *Glycyrrhiza* (Athimathuram), *Withania Somnifera* (Ashwagandha)

The selected herbs were dried at 35 degree temperature in a vacuum drier and pulverized in a multi mill with SS316 blades to avoid any metal particles emission. After pulverization the resulting herbal powders were sieved using a 100 micron mesh and stored at 6 degree C. It was ensured that the moisture of the dried matter was less than 4 percent and they were sealed in air tight containers. These powders were used for the subsequent extraction process.

The active components were then extracted out of the herbs by the use of solvents. Two solvents namely methanol and hexane were used. Depending on the nature of the herb either one of the solvents was used. Accordingly ten test tubes containing all the selected herbs were taken for the solvent extraction.

One gram each of all the selected 10 herbs were added to 5 ml of methanol in 10 test tubes. Similarly 1 gram of each of herb was added to 5 ml of hexane in 10 more test tubes. All the 20 test tubes were left at room temperature for 4 days. After that period 1 ml of the resulting extract was taken from 20 test tubes and added to 9 ml of water to make it up 10 ml each. From this sample was taken for the spectrum analysis.

Down Stream process for precipitation of biomolecule

Five gram each of all the selected herbal powder were extracted with 10 ml of methanol and maintained at 30 degree before they were centrifuged at 248 RPM for 4 hours. One ml of the resulting extract of each herb was taken and it was treated with 2 ml of acetone and 2 ml of acetonitrile separately to understand the basic precipitation properties. It was observed after a day that more precipitate was collected from the test tube containing methanol extract of *Astragalus racemosus* herb (Sathavari).

Lipase inhibition activity

After the extraction and spectrum analysis, the remaining extract was concentrated by using rotary evaporate at 70 degree and 0.7 bar pressure. The evaporated solution yielded pasty substance for each herb. It was ensured that each extract was totally free from solvent residues before they were taken up for the analysis of lipase inhibition activity.

From the evaporated herbal extract of 0.5 ml, a quantity of 0.1 ml was taken and added to 0.9 ml of water to make up to 1 ml of diluted herbal extract. The pH of this solution was checked. If the pH did not change it was ascertained that the herb is having lipase inhibition activity. If the pH changed (increased or decreased) the respective herb doesn't contain lipase inhibition activity. The strength of the lipase inhibition activity was determined based on how close the value was to pH 7.0 when the herbal extract was added to the substrate(0.5N NaoH). The closer the value to pH 7.0 the more the lipase inhibition activity. Any decrease or increase from the neutral value of pH 7.0 indicates proportionately reduced lipase inhibition activity.

Preparation of Dhal powder

Raw ingredients such as black gram dhal, bengal gram dhal, red chilies, salt and curry leaves were selected for the preparation of dhal powder. Dhal was chosen as it contains a high amount of protein and would form the base for the functional food to be developed. Cereals and millets bran were selected as ingredients because of their high fiber content. Curry leaves contain glycoside, flavonoids and are also rich in antioxidants. Further curry leaves and black gram dhal contains fiber which aid in weight reduction.

The presence of fiber in the functional food developed helps for the reduction of weight, maintenance of weight, reduction/maintenance of blood glucose and blood lipids, helps to eliminate the carcinogenic substances, provides feeling of fullness, helps to improve the gastro intestinal motility and also prevents constipation.

Cereals and Millets selected for the extraction of bran

The bran of the following Cereals and millets like *Paspalum scrobiculatum* (Kodo millet), *Setaria italica* (Italian millet), *Panicum sumatrense* (See millet), *Oryza sativa* (Rice), Eleusine coracana (Ragi), *Triticum* (Wheat), *Zea mays* (Corn), *Sorghum* (Jowar), *Pennisetum glaucum* (Bajra) was extracted to be used as an ingredient in the functional food.

The selected cereals and millets contain vitamins and minerals and also provide energy, protein and contributes good amount of fiber.

Development of Functional food

Functional food was prepared by the proportionate addition of dhal powder which is the base to the bran of the selected cereals and millets (which constitute the fiber content of the food) along

with the bio molecules concentrate (for lipase inhibition activity). The ingredients of the functional food tried in different combinations and based on the sensory evaluation results the best combination was selected.

RESULTS AND DISCUSSION

From the study it was observed after a day that more precipitate was collected for methanol extract of *Astragalus racemosus* herb (Sathavari). The spectrum analysis results shows that the wavelength of the antiobesity herbs with methanol was unique and returned different values. The active components of the antiobesity herbs was noticed at the following wavelength during spectrum analysis.

Glycyrrhiza (Athimathuram)-338.1, *Andrographis paniculate* (Siriyanangai)- 326, *Cyperus rotundus* (Korai kizhangu)-336.5, *Saraca asoca* (Ashoka pattai)-345.3, *Asparagus racemosus* (Sathavari)-299, *Hygrophila auriculate* (Neermulli)-329, *Tribulus terrestris* (Nerunji)-302.8, *Withania somnifera* (Ashwagandha)-281, *Tinospora cardifolia* (Seenthil kodi)-301.5.

Lipase inhibition activity of anti obesity herb was checked and it was noticed out of 10 herbs the following 4 herbs had lipase inhibition activity

Table 1 shows the lipase inhibition activity of the selected anti obesity herbs

TABLE 1
LIPASE INHIBITION ACTIVITY OF THE SELECTED ANTI OBESITY HERBS

S.NO	HERBALS	pH VALUES	LIPASE INHIBITION ACTIVITY
1.	<i>Glycyrrhiza glabra</i> (Athimathuram)	6.17	-
2.	<i>Andrographis paniculate</i> (Siriyanangai)	7.15	+
3.	<i>Cyperus rotundus</i> (Korai kizhangu)	6.87	-
4.	<i>Saraca asoca</i> (Ashoka pattai)	6.81	-
5.	<i>Asparagus racemosus</i> (Sathavari)	7.3	+
6.	<i>Hygrophila auriculate</i> (Neermulli)	6.98	-
7.	<i>Tribulus terrestris</i> (Nerunji)	6.8	-
8.	<i>Tinospora cardifolia</i> (Seenthil kodi)	7.1	+
9.	<i>Withania somnifera</i> (Ashwagandha)	7	+
10.	<i>Terminalia chebula</i> (Kadukkai)	6.59	-

The strength of the lipase inhibition activity was determined based on how close the value was to pH 7.0 when the herbal extract was added to the substrate(0.5N NaOH). The closer the value to pH 7.0, the more the lipase inhibition activity. Any decrease or increase from the neutral value of pH 7.0 indicates proportionately reduced lipase inhibition activity

Hence as per the analysis it was determined that lipase inhibition activity was found in the herbs such as *Andrographis paniculate* (Siriyanangai), *Asparagus racemosus* (Sathavari), *Tinospora cardifolia* (Seenthil kodi), *Withania somnifera* (Ashwagandha).

Out of 10 herbs selected *Asparagus racemosus* (Sathavari) precipitate showed the best lipase inhibition activity and hence it was selected as a functional food ingredient by sending that into rotary evaporator and then by adding micro cellulose crystal fillers.

Functional food was prepared in combination with dhal powder, bran of different cereals and millets and with the biomolecule. This functional food when supplemented to obese individuals would help to reduce the body weight without compromising the energy and nutritional requirements. The reduction in body weight is due to the lipase inhibition activity of the herb. It also acts as an immune booster. The presence of anti oxidants in the herb is an added advantage.

CONCLUSION

The prevalence of obesity is on the rise due to lifestyle changes as a result of Urbanization. The intake of fast foods, ready to eat foods, processed foods etc are key drivers in the rapid increase of Obesity. Obesity is one medical condition which leads to various ailments/ diseases. Allopathic medicines which are consumed to fight obesity may have side effects.

Hence it was decided to identify the active biomolecule in the selected traditional anti-obesity herbs. The active biomolecule were identified with the help of the lipase inhibition activity of the herbs.

Towards this objective, a functional food with dhal powder as the base, bran of cereals and millets as the fiber rich filler and the functional extract of the herbs (Biomolecule concentrate) as the natural medicine were conceived. This food would combine the goodness of dhal, which is rich in protein with the fiber rich bran (extracted from selected cereals and millets) with the medicinal property of the herbs. This functional food would be a great natural and traditional food supplement to fight the obesity because of its lipase inhibition activity and it acts as immune boosters, also it contains anti oxidants.

Bibliography

- Cencic A, The Role of Functional Foods, Nutraceuticals, and Food Supplements in Intestinal Health, *Nutrients* 2010, 2: 611-25.
- Kasbia GS: Functional foods and nutraceuticals in the management of obesity, *Nutrition and Food Science* 2005, 35: 344-51.
- Grunwald GK, Seagle HM, Peters JC, Hill JO: Quantifying and separating the effects of macronutrient composition and non-energetic food components on energy density, *British Journal of Nutrition*, 2001, 86: 265–76.
- Benny, Herbs and body weight regulation: observations and mechanisms, *Journal of Clinical Nutrition*, 2015, 36: 969–80.



ASSESSMENT OF NUTRITIONAL STATUS OF SELECTED ELDERLY AND IMPACT OF LIFE STYLE EDUCATION ON HEALTH

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ABSTRACT

*Good nutritional status of the aged will benefit the individuals as well as the society by decreasing health care costs. **Objectives** - The present study has been formulated to identify the nutritional status of the elderly and counsel them to improve their social life, life style pattern, dietary pattern and to reduce the morbidity rate and help them to lead a happy life. **Methods** - Elderly people (Women 60+ years, n=125 and Men 60+ years, n= 75) were selected through random sampling. Elderly people who fell in obese category were selected as sub sample. An interview schedule was formulated to elicit information on socio-economic status, dietary habits and lifestyle pattern of the selected subjects. Anthropometric data namely, weight, height, arm, waist and hip circumference was assessed following standard procedures. Prevalence of nutritional deficiency diseases and diet related diseases was assessed. **Results** - Appropriate biochemical estimations and nutrition education was carried out for the sub-sample. Thirty percent of male and female elderly subjects were in obese category which was due to increased consumption of energy and fat rich foods. Nutritional problems like dental problems, anemia and osteoporosis were more prevalent among the selected elderly. Inadequate food intake due to depression and emotional problems were found in elderly who lived alone. These elderly subjects did not have proper knowledge about the healthy food consumption and hygienic life style practices. **Conclusion** - The results of the present study point out that there is great need for proper counseling and nutrition education on the best control of complications of various diseases.*

KEYWORDS: Anthropometric, Consumption, Circumference, Hygienic

INTRODUCTION

Ageing is considered as natural and universal process. It is regarded as an inevitable biological phenomenon. This gradual and spontaneous change results in maturation through childhood, puberty and young adulthood and then decline through middle and late ages. The regeneration capacity of cells and other processes due to growth and maturation are lost over time, ultimately leading to incompatibility with life. A study by the National Commission on Population projects report that senior citizens will comprise 9.3 per cent by 2016, 10.7 per cent by 2021 and 12.40 per cent by 2026. The average life span of people around the world has been increasing dramatically (Birren and Renner, 2002).

Nutrition is as important for the elderly as it for other age groups. Some of the health problems faced by elderly are due to improper nutrition. Many elderly skip meals or do not eat well. Sometimes emotional problems such as depression, keep elderly people from eating. Because an elderly person's basal metabolism is decreased, the person's caloric need is also decreased. For this reason, better planning is required to ensure proper nutrition. Elderly are vulnerable to long term diseases of insidious onset such as cardiovascular illness, cancers, diabetes, musculoskeletal and mental illness. They have multiple symptoms due to decline in the functioning of various body functions.

Hence, the present research has been formulated to identify the nutritional status of the elderly and counsel them to improve their social, life style pattern, dietary pattern, and to reduce the morbidity rate and help them to lead a happy life.

METHODOLOGY

A total of 200 elderly people who were residing in the three urban areas of Coimbatore district namely Kalapatti, Nehru Nagar and Hope College were selected by random sampling method. All the male and female subjects above the age of 60 years were included for the study which comprised of 75 males and 125 females. Elderly Subjects who were in the obese (30) category were selected as sub sample for estimating biochemical profile.

Formulation of interview schedule

An interview schedule is a written list of questions open ended or closed prepared for use by an interviewers in person-to-person interaction. An well structured interview schedule was formulated by the investigator to collect the details of the subjects regarding socio-economic status, anthropometric measurements, clinical assessment, biochemical parameters, health status and food habits were collected from the selected elderly subjects

Life Style Pattern of the Selected Participants

The life style pattern of the selected elderly included type of activity, exercise pattern, alcohol and smoking patterns, and pan chewing habits details were collected.

Assessment of Nutritional Status of the Selected Elderly

Assessment of nutritional status of the selected elderly was done by anthropometric measurements, clinical examination, biochemical assessment, dietary pattern and health profile of the elderly subjects.

Anthropometric Measurements

Measurement of height

Height of an individual is principally a measure of skeletal long tissue (Jelliffe, 2001). The subject was made to stand erect looking on a leveled surface, without shoes and toes apart. The scale was placed over the head of the selected subject. Using tape, the reading was measured to the nearest 0.1 cm accuracy (Bamji *et al.*, 2009)

Measurement of weight

Body weight is the most widely used simplest method to assess the growth and development of an individual (NIN, 2009). The Zero error of the weighing scale was checked before taking the weight. The subjects were weighed with minimum clothing and without shoes and the weight was recorded (Bamji *et al.*, 2009)

Body mass index

Body mass index is a simple indicator of total body fat or obesity. BMI is defined as the individual's body weight divided by the height in meter square and may be accurately calculated using the formula of Hall and Cole, (2006).

$$\text{BMI} = \frac{\text{Weight in Kg}}{\text{Height in m}^2}$$

Measurement of waist circumference

The subject was made to stand erect with straight evenly balanced on both feet which were placed about 25 to 35 cm apart. The level of lowest rib and iliac crest and the mid auxiliary line were felt. The tape was passed round the waist horizontally between the lowest rib and iliac crest and the waist circumference was marked to the nearest millimetre.

Male waist circumference should be <40 inches (102 cm). Female waist circumference should be <35 inches (88 cm), (Centres for Disease Control and Prevention, 2010).

Measurement of hip circumference

Hip circumference was measured by making the subjects stand with both feet together, and the hip circumference was taken. The tape was passed round the hip horizontally and measured. The circumference was marked to the nearest millimetre.

Waist-hip ratio

The waist-hip ratio assesses the body fat distribution as an indicator of health risk. Obese persons with a greater proportion of fat in the upper body, especially in the abdomen, have android obesity. Obese persons with most of their fat in the hips and thighs have gynoid obesity (WHO, 2008). The waist-hip ratio was taken for all subjects with the help of inch tape. The waist-hip ratios were calculated using the value of waist, hip circumference and the waist-hip ratio was calculated.

Clinical examination of the selected elderly people

Clinical examination was done for all the selected elderly to find out the clinical signs and symptoms of nutritional deficiencies.

Dietary assessment

The purpose of any dietary assessment is to find out the nutrient intake of individuals. Diet history plays a vital role in determining the nutritional status of the individuals. The elderly were interviewed by the investigator to estimate their dietary intakes, dietary habits and likes and dislikes. To assess the food consumption pattern of selected subjects 24 hours food recall method was done.

Bio-chemical estimation

Bio chemical test helps to diagnose deficiency diseases at the subclinical stage and confirm it as a diseased state (Bent, 2003). Most bio chemical test reveals current status. They are useful to find out any mild deficiencies. The best routinely performed tests of nutritional status are haemoglobin, blood glucose and cholesterol. These bio –chemical parameters were done for elderly

Haemoglobin

The Hemoglobin determination is used to detect, iron deficiency anaemia by using cyanomethoheamoglobin method. Normal values include (Duraif, 2006).

Male – 14 to 18g/dl

Female – 12 to 16g/dl

Haemoglobin level was estimated for the sub- sample.

Blood glucose

Blood glucose refers to the amount of glucose present in blood. The blood glucose level is increased with increasing of age because of the insulin or some metabolic changes (ADA, 2007). Blood glucose level was estimated for the sub –samples. The blood glucose was measured using glucometer.

Blood lipid Profile

Based on the data obtained from the survey, elderly who were obese were selected a sub – sample. Lipid profile was estimated for these subjects following standard procedures.

Total cholesterol is measured to evaluate fat metabolism and to assess the risk of cardio-vascular disease. Normal cholesterol concentration varies with age and sex and may range from 120mg/dl to 200mg/dl (Carol, 2005). Total TG and VLDL, HDL, LDL are measured by using of CHOD-PAP method.

Nutrition Education and Evaluation

Nutrition education is an integral part for effective dietary modification. Nutrition education was given to all the elderly people who were obese. Different types of aids namely charts and pamphlets were used to impart nutrition education. Both individual and group nutrition education was alternatively given to the elderly people. Two contact sessions, each for duration of 15 minutes were conducted for nutrition education. A questionnaire with 15 questions were formulated to test the knowledge of the elderly regarding various deficiencies and foods to be included and excluded during old age were tested before and after nutrition education.

RESULTS AND DISCUSSION

Demographic Profile of the Selected Elderly

Table 1 depicts the age and gender distribution of the selected elderly

TABLE 1 AGE AND GENDER DISTRIBUTION OF THE SELECTED ELDERLY

Age In Years	Male		Female		Total	
	No.	%	No.	%	No.	%
60 – 65	23	11.5	37	18.5	60	30
65 – 70	14	7	24	12	38	19
70 – 75	17	8.5	23	11.5	40	20
75 – 80	9	4.5	19	9.5	28	14
80– 85	7	3.5	14	7	21	10.5
85 – 90	5	2.5	8	4	13	6.5
Total	75	37.5	125	62.5	200	100

From the Table I, it is evident that 30 percent of the elderly were in the age group of 60 to 65 years and 20 percent were in the age group of 70 to 75 years. Next, the numbers of elderly subjects were more in 65 to 70 years. Only 14 percent were in the age group of 75 to 80 years, followed by the elderly above the age group of 80 to 90 years.

Occupational Status

It was observed that 30 percent of elderly were working and 70 percent were retired.

Type of Family

Nuclear family system dominated among the elderly with 50 percent in nuclear families and 42.5 percent in joint families. Only 7.5 percent were living alone. It was observed that elderly who were living alone felt lonely and their dietary intake was very poor. Emotionally they were affected and were depressed

Source of Income

Majority of the elderly were depended upon their children's for their day to day expenses. Thirty six point five percent of the elderly met their expenses through their pension. Only a few (15.5%) met their expenses through their present salary.

Life Style Pattern of the Selected Male and Female Elderly

Sedentary way of life was more prevalent among both males and females (53.5%) who were not able to perform their activities of daily living. Elderly people who were performing moderate activity were able to perform their own activities. Heavy activity performing elderly were only thirteen percent.

Information on the exercise pattern of the selected elderly revealed that all the elderly had the habit of walking. Thirty two of elderly went for walking for 15 minutes. The elderly who walked for 30 minutes and one hour had good control on their blood pressure.

Seventy percent of male diabetics consumed alcohol. Thirteen percent consumed more than 500 ml weekly or occasionally. Twenty one elderly subjects consumed alcohol daily.

Majority of the elderly (49%) consumed tea. The elderly subjects (29%) who consumed coffee had moderate to severe hypertension when compared to elderly who consumed tea.

Eighty three percent of the male elderly were smokers. Majority smoked less than five cigarettes. Only (20%) smoked more than 10.

From the selected elderly only (55.5%) had the habit of pan chewing. The elders who had the habit of chewing pan had the incidence of angular scare and angular stomatitis.

Anthropometric Measurements

Table 2 presents the body mass index of the selected elderly

TABLE 2 BODY MASS INDEX OF THE SELECTED ELDERLY

Category*	Age In Years						Total	
	60-70		71-80		81-90			
	No.	%	No.	%	No.	%	No.	%
Male								
< 18.5 Underweight	-	-	4	2	3	1.5	7	3.5
18.5 -24.9 Normal	13	6.5	6	3	-	-	19	9.5
25 -29.9 Overweight	9	4.5	5	2.5	7	3.5	21	10.5
>30 Obesity	15	7.5	11	5.5	2	1	28	14
Total							75	37.5
Female								
< 18.5 Underweight	7	3.5	11	5.5	4	2	22	11
18.5 -24.9 Normal	18	9	17	8.5	9	4.5	44	22
25 -29.9 Overweight	14	7	8	4	4	2	26	13
>30 Obesity	20	10	6	3	5	2.5	33	16.5
Total							125	62.5

*World Health Organization (2010)

The Table II shows that 9.5 percent of the male and 22 percent of the female elderly had normal body mass index. Twenty five percent of males and females were overweight. Prevalence of overweight and obesity among male and female were similar.

Waist Hip Ratio (WHR)

Table 3 shows the distribution of subjects according to waist hip ratio

TABLE 3 DISTRIBUTIONS OF SELECTED ELDERLY ACCORDING TO WAIST HIP RATIO

Category*	Age in years						Total	
	60-70		71-80		81-90			
	No.	%	No.	%	No.	%	No.	%
Males								
< 0.95 (Underweight)	4	2	8	4	11	5.5	23	11.5
0.95 (Normal)	19	9.5	13	6.5	6	3	38	19
> 0.95 (Obese)	4	2	7	3.5	3	1.5	15	7
Total							75	37.5
Females								
< 0.85 (Underweight)	11	5.5	7	3.5	10	5	28	14
0.85 (Normal)	34	17	29	14.5	6	3	69	34.5
> 0.85 (Obese)	14	7	9	4.5	5	2.5	28	14
Total							125	62.5

(Centre for Disease Control and Prevention)*

The waist hip ratio of the selected elderly showed that 7 percent of male and 14 percent of female elderly had waist-hip ratio more than normal. Eleven point five percent males and 14 percent females were in the underweight category. It was also observed that in females the level of underweight (14%) and obese were in line, whereas in males the number of elderly in obese category (7%) was less when compared to females(14%).

Dietary habits of Selected Male and Female Elderly

Most (82%) of the selected elderly were non-vegetarians. Only 4 percent males and 14 percent females were vegetarians. The elderly subjects who consumed more amounts of non-vegetarian foods had higher cholesterol levels compared to vegetarians.

Food consumption pattern of the selected elderly revealed that the subject had adequate cereal and pulse consumption. In roots and tubers, onions were consumed daily, whereas potatoes were consumed rarely. Green leafy and other vegetables consumption was adequate. Banana was consumed frequently. Eighty two percent of the elderly consumed fleshy foods like fish and chicken weekly. Milk and its products were consumed by most of the elderly in the form of coffee, tea or curd. Sugar was restricted by the diabetics (56), others consumed sugar daily. Sunflower oil was used by the middle and high income group elderly, whereas palm oil and ok oil was used by low income group for the preparation of food. Ghee, butter and vanaspathi were used rarely.

Mean intake of energy was 2169 kcal and 1759 kcal for the male elderly and female elderly respectively. Protein intake was 35 g and 43 g for the males and females, which was lower than the RDA. of 60 g for males and 55 g for females. The calcium intake was also lesser among

male (400 mg) and female (380 mg) elderly when compared to RDA. The iron intake of male and female elderly subjects was 15 and 12.5 respectively, which was less than RDA.

Clinical Examination

Clinical examination of the selected elderly revealed that most of them had pale conjunctiva and spoon shaped nails denoting the deficiency of anaemia which is correlates well with biochemical values. Vitamin B complex and Vitamin C deficiency were also present. Hair pigmentation, facial pigmentation, atrophic papillae in tongue, mottled enamel, xerosis of skin was the normal physical changes of ageing.

Health status

Table 4 depicts the prevalence of diseases among the selected elderly

TABLE 4 PREVALENCE OF DISEASES AMONG THE SELECTED ELDERLY

Prevalence of Diseases	Male		Female		Total	
	No.	%	No.	%	No.	%
Diabetes With hyper tension, renal failure, vision problems, osteoporosis, cardio vascular disease	6	3	11	5.5	17	8.5
Cardiac disease With hypertension and osteoporosis	9	4.5	10	5	19	9.5
Diabetes With vision problems	10	5	17	8.5	27	13.5
Diabetes With hypertension	7	3.5	14	7	21	10.5
Hypertension and renal failure	8	4	11	5.5	19	9.5
Diabetes mellitus	9	4.5	15	7.5	24	12
Osteoporosis	12	6	19	9.5	31	15.5
Dental problems	14	7	28	14	42	21
Total	75	37.5	125	62.5	200	100

Table 4 shows out the fact that all the selected elderly had one or the other health problems. Dental problems (21%) were the most prevalent form of disorder seen among the selected elderly. Female elderly reported more of dental problems compared to male. Next was osteoporosis (15.5%) followed by diabetes with vision problem (13.5%), diabetes with hypertension, renal failure, cardiovascular diseases

Biochemical Assessment

Table5 gives the mean biochemical values of the selected elderly

TABLE 5 MEAN BIOCHEMICAL VALUES OF THE SELECTED ELDERLY

Criteria	Standard	Male (Mean \pm SD) (n=15)	Female (Mean \pm SD) (n=15)
Blood Glucose(mg/dl)	80-140 mg/dl	156.24 \pm 43.46	161.23 \pm 50.50
Haemoglobin (g/dl)	Male - 14 to 18 mg/dl Female - 12 to 14 mg/dl	14.89 \pm 5.21	13.26 \pm 2.78
Total cholesterol	<200mg/dl	165.51 \pm 34.69	189.93 \pm 62.33
Triglycerides	<150 mg/dl	128.73 \pm 47.81	77.25 \pm 26.26
HDL	>35mg/dl	58.51 \pm 13.71	55.28 \pm 14.35
LDL	<100mg/dl	72.22 \pm 19.43	67.53 \pm 18.48
VLDL	<40 mg/dl	27.62 \pm 10.28	32.43 \pm 12.98

The results of bio chemical analysis in Table 5 shows that only 5 females had haemoglobin values less than 6g/dl, while 9 male subjects had haemoglobin values between 11and 12g/dl showing anaemic condition. The blood glucose indicated that 48 males and 81 females had post prandial glucose level in the range of 149 to 340 mg/dl. Total blood cholesterol levels were within standard ranges.

The mean bio chemical values for male and female subjects in the present study indicate that haemoglobin levels were in the range 13.26 and 14.89g/dl respectively. The blood glucose levels were 161.23mg/dl for female and 156.24g/dl for male. The mean serum lipid profile such as cholesterol, triglycerides, HDL, LDL, and VLDL were 189.93, 77.35, 55.28 and 67.53, 32.43mg/dl respectively. These values were within normal range.

Evaluation of Nutrition Education

Table 6 projects the mean scores before and after nutrition education.

TABLE 6 MEAN SCORES BEFORE AND AFTER NUTRITION EDUCATION

Before score (Mean \pm SD) (n = 15)	After score (Mean \pm SD) (n = 15)	T value
5.20 \pm 1.74	10.33 \pm 1.98	7.26**

** - significant at 1% level

From the scores obtained before and after diet counselling (Table 6). It is evident that, before the nutrition education conducted by the investigator. The elderly were not aware of the facts of the healthy nutrition. The scores were low before education.

After the nutrition education was given by the investigator awareness on the healthy eating habits for a better living was increased. The test scores were highly significant after nutrition education. If elderly subjects are counseled and educated on correct methods of healthy choices of food, incidence of complications can be reduced.

CONCLUSION

The findings of the study revealed that elderly living in the selected areas in Coimbatore city were found to have increasing morbidity pattern. Dental problems, anemia and osteoporosis were the nutritional problems prevalent among the selected elderly. Inadequate food intake due to depression and emotional problems were found in elderly who lived alone. These elderly did not have desirable life style practices and proper knowledge about hygienic and healthy food consumption. The present research point out that there is a great need for proper counseling and nutrition education on the best control of complications of various diseases.

REFERENCES

1. Bamji, (2009), "Text book of human nutrition", published by vijay primdani, Pp. 462.
2. Birenne, D.S., Singh, K.A.,(2012), "Compliance with dietary guidelines in grocery purchasing among older adults by charring ability and socio economic status", Gerontology, Vol.29, Pp 265-271.
3. Jelliffe, Derrick Brian. Jelliffe, E.F. Patrice, Community Nutrition Assessment, 2001.
4. Kathleen mahan, Sylvia Escott stump (2008) "Nutrition in ageing" food and nutrition therapy, edition 12th, Pp.226.
5. K.Sarawathy, padmini Majumdar (2010) "Nutritional profile of the elderly residing in institution" Indian Journal of nutrition and dietetics.vol-68.Pp.268
6. Montserrat Barceló,(2013), "Assessing nutritional status in the elderly", Nutrition in Hospitalaria, Pp.315
7. Nelson, (2003), "Food safety guidance for older adults", Clinical Infectious Diseases, Vol.13, Pp. 1298-1304
8. Yamini Nigam, John knight, shrmila Bhattacharya and antony bayer (2012), "Physiological changes associated ageing and immobility", journal of ageing research.
9. World Health Organisation (2012), "Ageing and Elderly in Pakistan.
10. Vikram patel, (2001)"Ageing and mental health in a developing country:who cares?", Qualitative studies from Goa, India, Vol.32, Pp 29-48.



THE BLUE ZONE

Chitra Murugesan*

ABSTRACT

Blue zones are areas where the inhabitants live longer than other people on this earth. Dan Buettner of National Geographic Magazine pioneered a study on the blue zones where it is common to find people above 90 years of age enjoying good health. Life-threatening diseases are rare. Researchers have found out certain commonalities among the food, activity and life styles in these areas. People eat generally low-processed, plant-based food more out of necessity than out of choice. The terrain is either rough or insular; hence import and export trade is limited. Therefore home-grown and locally-marketed produce forms their staple diet. The researchers noticed a 90-year-old woman fishing to get fish for her dinner. People keep moving the whole day; they are gardening, fishing or walking to visit relatives and friends. Gymnasium and treadmill are conspicuous by their absence. Familial, communal and societal bonds are strong. Nobody feels lonely nor is anyone left out. Spirituality transcends material gains. Lessons to be learnt from the blue zones: Sports, Education and Nutrition have a great implication on the health of the nation. Society as a whole has to create a positive ambience about what and how to eat, move and live. Promote and create awareness about fresh, wholesome, home-cooked food. Discourage processed, tinned and bottled health supplements, snacks and soft drinks. Ambulate throughout the day, not just a 40-minute workout. Educate the girl child, the future home maker. Mental health and happiness are more valuable than money and fame.

KEYWORDS: *Life-Threatening, Conspicuous, Familial, Implication*

INTRODUCTION

THE BLUE ZONE

First report about healthy centenarians

In October 1999, an Italian doctor cum medical statistician named Gianni Pes stepped on to the stage of an international longevity conference in (Montpellier) France and presented a mind boggling paper. He reported that during the previous 5 years of his practice in Sardinia he had seen 200 healthy centenarians. He added that in one village of 2500 people he had found 7 centenarians. Considering the fact that in the U S, the ratio for centenarians is roughly 1 in 5000 this information was staggering. Where is 5000:1 and where is 2500:7.

Sardinia in Italy was declared the first official blue zone. Till date 5 such zones have been discovered. Here people do not just live longer; they are in good health too.

Pioneer, his efforts and findings.

Dan Buettner, the pioneer in the study of the blue zones, visited all these zones repeatedly, collected tons of data and collated all his findings to find out commonalities among the centenarians living scattered among these five regions. Sure enough, he was able to separate and list 9 common factors.

Extrapolation of the lessons into our lives

My objective today is to take 3 out of those 9 factors and show their relevance to our BISEN. Food, exercise and life style are those 3 aspects.

Diet

Firstly, the diet that the blue zoners consumed is mostly plant-based and low-processed, more out of necessity than out of choice. Their terrain being rough and removed from mainland, it is difficult to have robust trade practices of import and export. So the inhabitants have to rely on what is locally available.

Exercise

Next factor is their mobility. They ambulate throughout the day obviating the need for an exclusive slot for exercise. They take their livestock to pasture, tend to their gardens, and walk to visit their folks.

In fact the words 'diet' and 'exercise' are almost nonexistent in their vocabulary.

Social life

Thirdly these people lead a healthy social life. What is remarkable is the respect and inclusion given to the older people. There is a strong family and communal bond. They put aside a time for either prayer or meditation. In one blue zone, the Sabbath is observed so fully that the entire town comes to a standstill.

Our present life style

Wait a minute!

Are not these attributes the same attributes we have left behind as obsolete and cumbersome? Thanks to technology, modernisation, industrialization and automation we have almost freed

ourselves from the drudgeries of household chores. The most overworked organ of our body is the index finger and the action it performs is to press buttons, buttons of our gadgets, lifts and remotes. The centenarians are mobile, they say. We too are always on the move, so what that we move atop a set of motorized wheels.

Thanks to modern day science and medicine, we have stretched our life span, but we are bedevilled with lifestyle diseases namely obesity, cardiovascular and diabetic problems. Our middle age is filled with visits to doctors and pills and injections before and after meals. Our fast paced life does not have space to care for older family members. Look at the advertisements for retirement communities and senior citizens' homes.

Piecemeal approach to body building and fitness

Of course, there is a trend to build a beautiful body. Diet and gymnasium are a fashion to get either a zero figure if it is a woman or a 6-pack abdomen if it is a man. Those above 40 years of age start walking after being diagnosed with umpteen illnesses and after being advised by doctors. It is like closing the stable door after the horse has bolted.

The world is waking up to realize the cost we pay for our so called comfortable life, but the awareness is very nascent. We have only a few pockets of thoughtful people who here and there try to get out of the rat race. However such people are exceptions and not the norm.

Let us pause a while and ponder about how to rectify the flaws in our life style. Should we rewind the clock and travel backwards in time to the pre technology age? Should we convert the cities into villages and transform the white collared and blue collared employees into shepherds and wood cutters? That is an absurdity, especially when we are at the threshold of artificial intelligence and machine learning. What is feasible is to make necessary changes in everyday activities in such a way that we manage to eat sensibly and keep our health in a sterling state. We have to age gracefully without losing our faculties and without becoming a burden to the society.

Feasible changes

And that is what our blue zone researchers have been doing. They select areas one by one and try to create an amicable setting for an ideal life style. They educate and train the residents of the chosen area to "deconvenience" themselves a bit say like walking more and driving less. An example of the tips is to keep ready-to-eat portions of fruits and vegetables on table tops and in top shelves of the refrigerator so that they become the first choice of snacks by default. Teaching and training locale after locale leads to another important finding, which is, the need for the geographical support.

Need for big players

Right now, nutrition and exercise remain in the realms of individual choice. We joke that we need tons of will power to overcome the trappings of fast food, junk food and addictions to the screens of the television, computer and mobile phone. According to the blue zone advocates, our opponent is too big to be subdued by discrete individuals. It should be a committed drive by the society as a whole and we need to bring big players like governments, politicians, industrialists and various other organizations. We need a lot of political will to take up the issue on a war footing.

Just think how our present government has made the Aadhaar omnipotent, omnipresent and omnimandatory. If this is not political will what else is? We need the same commitment from

people in positions. Our government should incentivize healthy habits. For a start, celebrities should endorse healthy eating and not glorify the bottled or tinned food supplements.

To conclude, let us learn from the examples available in the blue zones. Let us live longer and better.



EFFECT OF CONCURRENT TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES OF COLLEGE MEN PLAYERS

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ABSTRACT

To achieve the purpose of the present study (N=30) men players will be randomly selected from SCSVMV University, and Engineering College Students, Kanchipuram, Tamil Nadu. Their age ranged from 22 to 25 years. They will be assigned to two groups namely experimental group-I with (n=15) boys concurrent training 12 weeks 5 days a week and other group-II with (n=15) act as control group. The experimental group will be tested on physical fitness variables were [elastic strength and cardio respiratory endurance], the selected criterion variables measured by elastic strength – bunny hops, and cardio respiratory endurance – 12 minute run/walk test. The prior and after test data were collected treated with dependent 't' test. In the level of confidence was fixed at 0.05. The study results showed that the significant improvement on experimental group of selected on criterion variables of elastic strength, and cardio respiratory endurance of college men players. The control group did not show any significant improvement.

KEYWORDS: *Concurrent Training, Elastic Power, Cardio Respiratory Endurance*

INTRODUCTION

Sports training is a scientifically based and pedagogically organised process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition. Simultaneously training for adaptations associated with resistance and endurance training (RT & ET), otherwise known as concurrent training (CT), is widely debated by fitness professionals and strength coaches alike. CT has been criticized due to the potential for chronic overreaching, as well as the competing adaptations associated when performing RT and ET, concurrently. However if programmed carefully, CT can produce a lean and sculpted physique, while obtaining a high level of fitness as measured by health aspects as well as athletic parameters. Therefore, the purpose of this article is to elucidate the ways in which the adaptations associated with both RT and ET can be maximized when training concurrently (**Hickson RC 1980**). Elastic strength is the ability to exert force quickly and to overcome resistance with high speed of muscle action. High level of elastic strength requires good combination and coordination of high speed and strength of muscle action. The purpose of study was to find out effect of concurrent training on selected physical fitness variables of college men players.

METHODOLOGY

To achieve the purpose of the present study (N=30) men players will be randomly selected from SCSVMV University, and Engineering College Students, Kanchipuram, Tamil Nadu. Their age ranged from 22 to 25 years. They will be assigned to two group's namely experimental group-I with (n=15) boys concurrent training 12 weeks 5 days a week and other group-II with (n=15) act as control group. The experimental group will be tested on physical fitness variables were [elastic strength, and cardio respiratory endurance], the selected criterion variables measured by elastic strength – bunny hops and cardio respiratory endurance – 12 minute run/walk test. The prior and after test data were collected treated with dependent 't' test. In the level of confidence was fixed at 0.05.

RESULTS

TABLE-1
COMPUTATION WITH 't' TEST SELECTED EXPERIMENTAL AND CONTROL
GROUP ELASTIC STRENGTH OF COLLEGE MEN PLAYERS

Variable	Group	Test	Mean	S.D	D.M	σ DM	't'
Elastic strength	Experimental	Pre Test	9.49	0.17	1.03	0.15	6.86*
		Post Test	10.52	0.63			
	Control Group	Pre Test	9.39	0.23	0.053	0.048	1.10
		Post Test	9.44	0.17			

*Significant

Level of significant was fixed at 0.05 with df 15 table value 2.14

Table-1 Indicates experimental and control group of elastic strength mean and standard deviation of college men players. The experimental group pre and post test mean values are 9.49 and 10.52 and standard deviation values are 0.17 and 0.63 and obtained 't' is 6.86 which is greater than table value 2.14 with df 14. And control group mean values are 9.39 and 9.44 and standard deviation 0.23 and 0.17. The results of the study 't' value 1.10 which is lesser than table value 2.14. The finding of the study indicates that experimental group significant improvement on elastic strength effect of concurrent training on college men players.

FIGURE-1
MEAN VALUES OF EXPERIMENTAL AND CONTROL GROUPS OF ELASTIC STRENGTH OF COLLEGE MEN PLAYERS

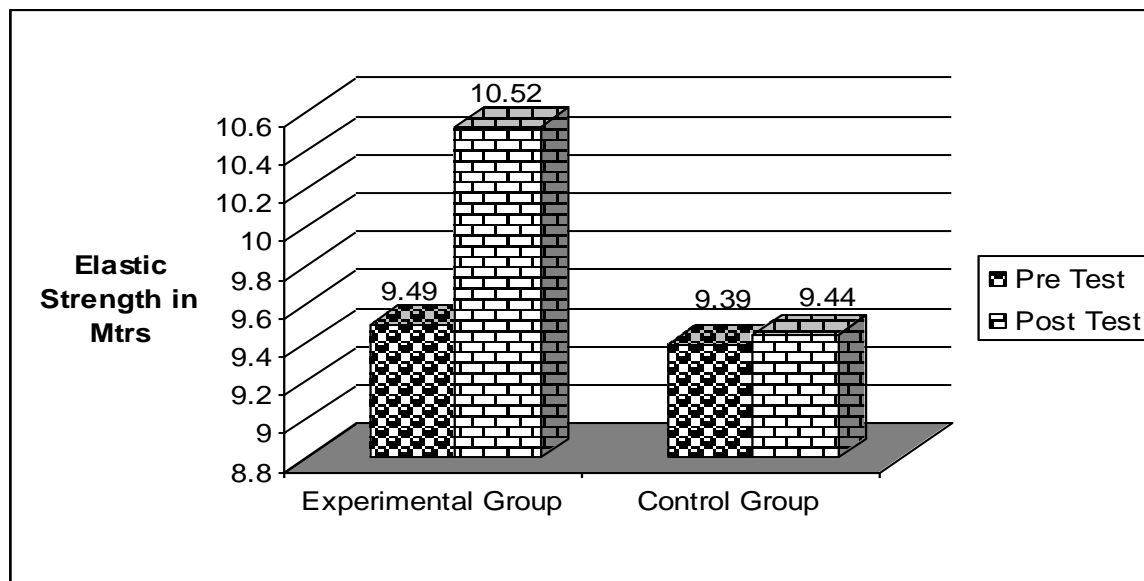


TABLE - II
COMPUTATION WITH 'T' TEST SELECTED EXPERIMENTAL AND CONTROL GROUP OF CARDIO RESPIRATORY ENDURANCE OF COLLEGE MEN PLAYERS

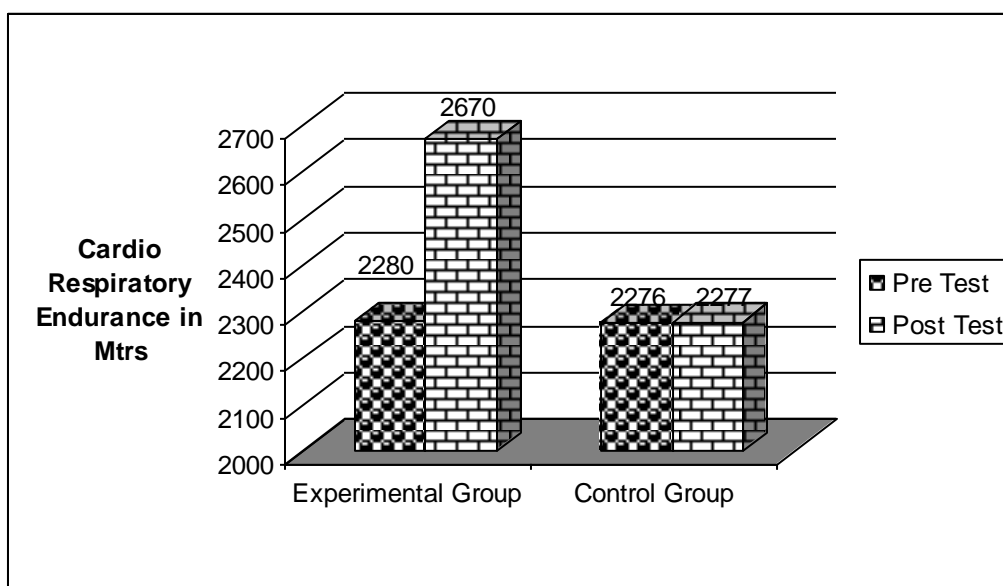
Variable	Group	Test	Mean	S.D	D.M	σ DM	't'
Cardio Respiratory Endurance	Experimental	Pre Test	2280	64.0	390	33.75	11.55*
		Post Test	2670	107.9			
	Control Group	Pre Test	2276	64.18	1.0	0.66	1.51
		Post Test	2277	63.15			

*Significant

Level of significant was fixed at 0.05 with df 15 table value 2.14

Table-II Indicates experimental and control group of cardio respiratory endurance mean and standard deviation of college men players. The experimental group pre and post test mean values are 2280 and 2670 and standard deviation values are 64 and 107.9 and obtained 't' is 11.55 which is greater than table value 2.14 with df 14. And control group mean values are 2276 and 2277 and standard deviation 64.18 and 63.15 The results of the study 't' value 1.51 which is lesser than table value 2.14. The finding of the study indicates that experimental group significant improvement on cardio respiratory endurance effect of concurrent training on college men players.

Figure-2
MEAN VALUES OF EXPERIMENTAL AND CONTROL GROUPS OF CARDIO RESPIRATORY ENDURANCE OF COLLEGE MEN PLAYERS



DISCUSSION ON FINDINGS

Based on results of the study shows that experimental group significant improvement on elastic strength and cardio respiratory endurance of college men players due to effect of concurrent training. The results of the study consent with other resistance training are more ideal to improve jumping ability (Hoff J, Gran A, and Helgerud J 2002) and (Millet et al., 2002). Several investigations involving adults suggest that combining resistance with endurance training may be useful for enhancing muscular performance (Mikkola et al., 2007 & Lanao-Esteve et al., 2002). From the results of the present study and literature, it is concluded that the dependent variable elastic strength and cardio respiratory endurance significantly improved due to the influence of concurrent training (Aagaard P and Anderson J. 2010 & Paavolainen et al., 1999).

CONCLUSIONS

1. The experimental group significant improvement on elastic strength and cardio respiratory endurance due to concurrent training of college men players.
2. There is significant difference between experimental and control groups of elastic strength and cardio respiratory endurance due to concurrent training of college men players.

REFERENCES

- Aagaard P and Anderson J.(2010) Effects of strength training on endurance capacity in top-level endurance athletes. *Scandinavian Journal of Medicine & Science in Sports*. 20(2): 39-47.
- Hickson RC.(1980) Interference of strength development by simultaneously training for strength and endurance. *European Journal of Applied Physiology*. 45: 255-263.
- Hoff J, Gran A, and Helgerud J.(2002) Maximal strength training improves aerobic endurance performance. *Scandinavian Journal of Medicine & Science in Sports*. 12: 288-295.
- Lanao-Esteve J, Rhea MR, Fleck SJ, and Lucia A.(2008) Running-specific, periodized strength training attenuates loss of stride length during intense endurance running. *Journal of Strength and Conditioning Research*. 22(4): 1176-1183.
- Mikkola J, Rusko H, Nummela A, Pollari T, and Hakkinen K. (2007) Concurrent endurance and explosive type strength training improves neuromuscular and anaerobic characteristics in young distance runners. *International Journal of Sports Medicine*. 28: 602-611.
- Mikkola J, Vesterinen V, Taipale R, Capostagno B, Hakkinen K & Nummela A.(2011) Effect of resistance training regimens on treadmill running and neuromuscular performance in recreational endurance runners. *Journal of Sport Sciences*. 29(13): 1359-1371.
- Millet GP, Jaouen B, Borrani F, and Candau R.(2002), Effects of concurrent endurance and strength training on running economy and VO2 kinetics. *Medicine & Science in Sports & Exercise*. 34(8): 1351-1359.
- Paavolainen L, Hakkinen K, Hamalainen I, Nummela A & Rusko H.(1999) Explosive strength training improves 5-km running time by improving running economy and muscle power. *Journal of Applied Physiology*. 86: 1527-1533.



EFFECT OF YOGIC PRACTICES ON SELECTED PHYSIOLOGICAL VARIABLES AMONG OBESE SCHOOL BOYS

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ABSTRACT

The purpose of this study was to find out the effect of yogic practice on selected Physiological variables among obese school boys at thiruvallur district, Chennai-Tamilnadu. To facilitate the study, the investigator with prior permission from the school authorities measured height and weight of 120 school boys in the age group of 12 to 17 years. Further 30 subjects were selected on the basis of BMI measurements. It was decided to keep 30 kg /m² as base line for the selection of subjects. They were divided into Two equal groups, each group consisted of fifteen subjects, in which group I underwent Yoga training group (YTG), group II control group (CG) and they did not take part any special training apart from their daily activity. Body Mass Index was selected as a criterion variable of this study and it was measured by using Formula ($BMI = \text{Mass}(\text{kg}) / \text{Height}(\text{m}^2)$) weighing machine was used to measure weight and Stadiometer was used to measure height and subject was selected by random assignment. Initial data were collected on selected dependent variables and final data were collected after 6 weeks training. The differences between the final scores in selected variables were subjected to statistical treatment using 't' test were used to find out the difference among the groups.

KEY WORDS: Yoga, Bmi, Obese.

INTRODUCTION

*"Practice of Yoga has become a way of life to millions of people throughout the world.
Yoga are aimed at "Yoking all powers of Body, Mind and Spirit"*

It is true that Yoga practice burn calories, when the Yoga practice are sternums the energy also required more. Sedentary life style of school children leads to obese the contemporary life style changes be the reasons for causing obese. In ancient days the children were exposed to house hold works and they used to travel either by walking or bicycle to reach the school for study. Nowadays only cars and autos are being used as transport to reach school. Moreover the children are attracted to mass media and computers they trend to spare time with that naturally is resulted in sedentary life. Children's lifestyles contribute to high rates of childhood obesity. Children need a healthy diet and regular physical activity to reduce childhood obesity. The good news is that the purpose of including yoga in your daily schedule is not to achieve the perfect bend, but to bring the body, breath, and mind together. Modern day living with this tensions, bad diet and lack of exercise has made the threat of heart disease very real. To safe guard you from this danger keep your body fit by good healthy practices. Good healthy practices significantly improve our health. Physical fitness and working capacity enable us to use our leisure time more beneficially and there by adding life to our years and years to our life. Yoga is a way of life. It is predominantly concerned with maintaining a state of equanimity at all costs. All yoga schools of thought emphasize the importance of the mind remaining calm, because as the saying goes, only when the water is still can you see through it. Yoga Philosophy also happens to be a valid discipline of Indian metaphysics. It is the result of human wisdom and insight on physiology, psychology, ethics and spirituality collected together and practiced over thousands of years for the well being of humanity. Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems. It is defined by body mass index (BMI) and further evaluated in terms of fat distribution via the waist-hip ratio and total cardiovascular risk factors. BMI is closely related to both percentage body fat and total body fat

MATERIALS AND METHOD

To facilitate the study, the investigator with prior permission from the school authorities measured height and weight of 120 school boys in the age group of 12 to 17 years. Further 30 subjects were selected on the basis of BMI measurements. It was decided to keep 30 kg /m² as base line for the selection of subjects. They were divided into Two equal groups, each group consisted of fifteen subjects, in which group I underwent Yoga training group (YTG), group II control group (CG) and they did not take part any special training apart from their daily activity. For every training programme there would be a change in various structures and systems in human a body. Body Mass Index was selected as a criterion variable of this study and it was measured by using Formula ($BMI = \frac{\text{mass(Kg)}}{\text{Height(m}^2\text{)}}$) weighing machine was used to measure weight and Stadiometer was used to measure height. Thorough starting prayer, loosing exerises is very essential before beginning of Yoga practice warm-ups just before starting Yoga. It will also reduce the muscle soreness experienced the next morning. The subjects underwent the Yoga training programme alternatively three days per week for six weeks between 6.00 and 7.00 in the morning.

YOGIC PRACTICES FOR SIX WEEKS

- PRAYER
- LOOSENING EXERCISES
- SURYANAMASKAR
- PADAHASTASANA
- VEERABADRASAN
- PATCHIMOTANASANA
- TITALIASANA
- BHUJANGASANA
- SHASSHANKASANA
- SAVASANA
- KAPALBHATI PRANAYAMA
- NADI SODHANA PRANAYAMA

DATA ANALYSIS AND RESULTS AND DISCUSSION

TABLE – I
INDEPENDENT ‘T’ TEST ON BODY MASS INDEX FOR OBESE SCHOOL BOYS

Group	Mean	SD	SE	MD	t
Yogic group	31.64467	1.46	0.38	1.57	3.08
Control group	33.214	1.33	0.34		

Table t-ratio at 0.05 is 2.02

***Significant at 0.05 level**

The results presented in table I showed that the obtained mean values for Body Mass index as 31.64467 and 33.214. Respectively the obtained ‘t’ value was 3.08. The obtained ‘t’ value 3.08 was greater than the required ‘t’ value 2.02. Hence the results proved that there was significant in yogic practice on Body Mass index among obese school boys at 0.05 level of significance

DISCUSSIONS ON THE FINDINGS OF BODY MASS INDEX

Body mass index proved that there was significant difference among means of the varied yoga training groups and control group above results has been substantiated by **Chidambara raja (2015)** conducted study on the effect of yogic practices on selected body mass index measures and high density lipoproteins among obese boys in that study he proved yogic practices reduced body mass index. The research findings of this study were in agreement with the finding of **Chidambara raja (2015)** at 0.05 level of significance.

DISCUSSION ON HYPOTHESIS OF BODY MASS INDEX.

Hypothesis stated that the yogic practice would have significantly greater influence on the body mass index among obese school boys. The result of the study indicated that yogic practice treatment influenced the selected obese boys to reduce their body weight.

CONCLUSION

From the results, yoga training can be improved the selected variable such as BMI among obese school boys age between 12 to 17 years of students. The result of the study indicated that there was a significant improvement on selected variables of this study due to six weeks of Yoga training. From the results, recommend that yoga training is very suitable to reduce the body weight of obesity.

REFERENCE

- Misra, (2010) "Obesity-related non-communicable diseases: South Asians vs White Caucasians". International Journal Obesity (London).20.
- McLaren (2007). "Socioeconomic status and obesity". Epidemiol Rev 29: 29–48.
- Madanmohan et.al (2008), "Effect of Six weeks Yoga training on Weight Loss Following Step test, Respiratory Pressures, Handgrip Strength and Handgrip Endurance in Young Healthy Subjects," Indian journal of Physiology and pharmacology, Vol. II, p164.
- Chidambara raja, (2015), "Impact of yogic practices on selected body composition measures and high density lipoproteins among obese boys Indian journal of research", vol 4, no 1
- Sreenimurugan (2011)., "Effect of Selected Yogic Practices on Body Composition of College Students Recent Treads in Yoga and Physical Education, Vol. I, p.79



IMPACT OF AN IRON RICH SUPPLEMENT ON THE NUTRITION AND COGNITION OF SELECTED SCHOOL CHILDREN

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ABSTRACT

Primary school age is a dynamic period of physical growth as well as mental development of the children. But research indicates that the nutritional status of primary school-age children is unsatisfactory and has far-reaching health consequences, contributing to impairments in growth, neurobehavioral function, and unsatisfactory classroom performance. In the present 100 children in the age group of 7 to 9 years in Sulur area of Coimbatore were selected for the study. The socioeconomic and nutritional status of the children was assessed using a predesigned interview schedule. The anthropometric parameters namely the height, weight and BMI of the children was assessed. Six cognition tests developed by National Institute of Mental Health and Neurological Sciences for 7 to 9 year old children were used to assess their cognition abilities. An iron rich cookie was formulated using little millet, rice flakes, deoiled coconut meal and wheat flour. Forty mild anemic girls were selected for the three month supplementation study. Sixty gram of the formulated cookies was supplemented for the experimental group (n1=20) and the standard cookie made with wheat flour was given for the control group (n2=20). The results show that there was a significant impact difference ($p \leq 0.05$) on the BMI values of the children after the supplementation study. There was a significant improvement in the blood haemoglobin and cognition scores when the pre and post intervention values were compared. The level of significance was 5% for three cognition tests namely personal information, Digit span and Benton Visual Retention Test and 1% significance for Mental control test. The study

helped us to find the goodness of traditional food components and ways to improve the nutritional and cognition of school children.

KEYWORDS: Socioeconomic, Nutritional, Anthropometric, Cognition

INTRODUCTION

Children constitute one of the important segments of the population. The foundation of good health and sound mind is laid during the school age period. Primary school age is a vibrant period of physical growth and mental development of the child. Research indicates that health problems due to unsatisfactory nutritional status in primary school-age children are among the most common causes of low school enrolment, high absenteeism, early dropout and unsatisfactory classroom performance. The present scenario of health and nutritional status of the school-age children in India is very unsatisfactory (IIPS, 2007). Iron deficiency in school age children, is associated with retardation of growth, decreased immunity, poor cognitive development resulting in lower Intelligence Quotient (IQ) and behavioral abnormalities (Gowri, and Sangunam, 2005). Studies have shown that iron-deficient children lag behind in anthropometric parameters and cognitive abilities (Shankar et al, 2000; Bhatia and Seshadri, 2003; Umamaheswari et al., 2011). So the present study was done to assess the efficacy of a food based intervention on the nutrition and cognition of selected preschool children.

METHODS

Hundred school children in the age group of 7 to 9 years were selected from two schools in Sulur area of Coimbatore district. An interview schedule was formulated to collect information on socioeconomic, nutritional status and cognition of the children. The anthropometric parameters used in the study were height, weight and Body Mass Index. Body weight was measured using Wellcare digital personal scale (to the nearest 0.1 kg). Height was measured (to the nearest 0.5 cm) with the subject standing in an erect position in stadiometer platform. The body mass index (BMI) was computed following the standard formula: $BMI (kg/m^2) = Weight (kg) / Height^2 (m^2)$. Dietary assessment was carried out using 24-hour dietary recall. The children were asked to remember and report all the foods and beverages consumed in the preceding 24 hours or in the preceding day. The hemoglobin levels were analysed for all willing students by using Drabkin's method. Six cognition tests developed and standardized on Indian children to suit Indian conditions by NIMHANS (Barnabas et al., 2002) (National institute of mental health and neurological sciences, Bangalore, India) was used to assess the cognition status of the children. These tests were administered before the start of the study (base line) and after three months of nutrient intervention. The tests used were Personal Information, Digit Span, Mental Control, Benton Visual Retention Test (BVRT), Mann-Suiter Visual Memory Screen for Objects and Cattells Retentivity Test. An iron rich cookie was formulated using little millet, rice flakes, deoiled coconut meal and wheat flour. The iron content of the standard cookie was 6.78mg and that of the formulated cookie was 14.65mg. The formulated supplement provided 517 Kcal of energy, 11.8gm of protein, 15.8 gm of iron and 242mg of calcium per 100 gm. Forty mild anemic girls were selected for the three month supplementation study. Before the start of the intervention study all the children were given deworming tablets Almendazol 400mg as per the recommendations of a physician. Sixty gram of the formulated cookies was supplemented for the experimental group (n1=20) and the standard cookie made with wheat flour was given for the control group (n2=20). The efficacy of the supplementation was carried out comparing the

anthropometric parameters and biochemical parameters before and after the intervention period. For measuring the impact on cognition the score obtained at the end of the study was subtracted from the initial score to get the increment in score. The comparison was made between the experiment and control with regard to the increment in scores to offset the increment due to familiarity in the retest.

RESULTS AND DISCUSSION

Among the hundred children selected 63 were girls and the remaining 37 were boys. Three fourth of the children come from nuclear families. The mean height of the boys ranged from 121 to 126 cm and the girls ranged from 119 to 125cm. The weight of the boys was from 21.8 kg to 28.5 kg. The mean weight of the girls was from 17.25 to 22 kg. On comparison with the standards for the height and weight it was found that mean values was less in both boys and girls of the selected children except the height of 7 year old boys. It was seen that the intake of total calories was 1210.4 ± 261.1 which was 739.6 Kcal less than their RDA given by ICMR. It was seen that the intake of iron was only 23.8 percent of the RDA. The mean cognition scores of the children shows that there is an increase with increase in age.

TABLE I
MEAN COGNITION SCORES OF THE CHILDREN (n=100)

S.NO	AGE	PERSONAL INFORMATION	MENTAL CONTROL	MANN SUITE R TEST	BENTON VISUAL RETENTION TEST	CATTELLS RETENTIVITY TEST
1	7	4.31	5.3	3.0	5.5	5.25
2	8	3.92	7.29	3.2	6.5	6.14
3	9	4.22	8.35	3.7	6.8	6.25
Maximum score		5	10	4	10	10

TABLE II
IMPACT OF SUPPLEMENTATION ON THE ANTHROPOMETRIC PARAMETERS AND BLOOD HAEMOGLOBIN LEVELS (n=40)

PARAMETER	CONTROL GROUP (n2=20)		EXPERIMENTAL GROUP (n1=20)	
	BEFORE (MEAN \pm SD)	AFTER (MEAN \pm SD)	BEFORE (MEAN \pm SD)	AFTER (MEAN \pm SD)
Height (cm)	123.3 \pm 3.522	124.5 \pm 4.76	123.4 \pm 4.834	124.84 \pm 5.741
Weight (kg)	23.4 \pm 2.98	24.1 \pm 3.08	22.8 \pm 2.34	24.1 \pm 2.58
Body Mass Index	14.62 \pm 1.38	15.18 \pm 1.23	14.34 \pm 1.58	15.35 \pm 1.39

Blood Haemoglobin (g/dl)	10.8±0.6	11.1±1.0	10.7±0.5	11.5±1.2
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TABLE III
IMPACT OF SUPPLEMENTATION ON COGNITION (n=40)

PARAMETER	GROUP	BEFORE		AFTER		LEVEL OF SIGNIFICANCE
		MEAN	SD	MEAN	SD	
Personal Information	EXP	3.67	0.86	4.14	0.53	**S
	CC	3.60	0.72	4.03	0.67	
Digit Span	EXP	7.16	1.45	9.32	1.75	**S
	CC	7.57	1.41	7.93	1.31	
Mental Control	EXP	7.18	1.54	8.91	1.35	*S
	CC	7.15	1.16	7.36	1.17	
Mann-Suiter Visual Memory for Screen Objects	EXP	3.04	0.79	3.54	0.58	NS
	CC	3.07	0.65	3.55	0.51	
Benton Visual Retention Test	EXP	5.22	1.21	6.88	1.31	**S
	CC	6.10	1.21	6.18	0.73	
Cattells Retentivity Test	EXP	5.15	0.72	7.15	0.94	NS
	CC	6.05	1.20	6.68	0.96	

Level of significance – NS-Not Significant, **S- 5% significance, *S-1% significance.

A review of literature was done in 16,501 studies to evaluate the effect of iron supplementation on cognition scores which showed that iron supplementation improved global cognitive scores, intelligence quotient among anemic children (Low et al., 2013). The efficacy of different types of biscuits on the anthropometric measurements, Hemoglobin content, clinical picture and cognitive performance was done among primary school children in Salem district in Tamilnadu. The results showed a significant difference in all the parameters on intervention of the biscuits. The results obtained in Group II (supplemented with potato flour biscuits) were better followed by Group III (supplemented with wheat biscuits) and Group IV (supplemented with ragi biscuits). There was minimal increment in the control group children who are in their home diet (Naznini *et al* , 2010). The results of the findings of the present study are in accordance with the above mentioned studies in improving the cognition of children.

CONCLUSION

The anthropometric parameters were less than the reference standards given by ICMR. More than half of the children were suffering from varying degree of iron deficiency anaemia. There was improvement in the nutritional parameters and cognition scores after the food based intervention. So it can be stated that locally available food supplements have a positive effect in improving the cognition of mild anaemic children.

BIBLIOGRAPHY

1. Barnabas, I., Subakrishnan.,Kapur, M., Uma, H. and Sinha,U. K. (2002). "Tests of memory for children". In Hirisave,U., Oommen, A & Kapur, M(Ed.):Psychological assessment of children in the clinical setting.Banglore: NIMHANS (No:48)189-274.
- 2.Bhatia D, Seshadri 1993. "Growth Performance in Anemia and Following Iron Supplementation." Indian Pediatr.;30(2) :195-200.
- 3.Gowri, A.R. and H.J. Sangunam, 2005. "Assessment of Mental and Motor Abilities of School Going Children with Anemia". Ind. J. Nutr. Dietet, 42: 99-105.
- 4.International Institute of Population Sciences (IIPS). 2007. "National Family Health Survey (NFHS-3), Fact Sheets for 29 States". Mumbai: International Institute for Population Sciences India, Mumbai. 2007
5. Low, Michael, Farrell, Ann Beverley-Ann Biggs, and Sant-Rayn Pasricha. 2013 "Effects of daily iron supplementation in primary-school-aged children: systematic review and meta-analysis of randomized controlled trials" CMAJ. 19; 185(17): E791–E802.
- 6.Nazni, Peekhan. Pradheepa, Subramanian. and Hasan Abul. 2010. "Effects of weaning biscuits on the nutritional profile and the cognitive development in preschool children". *Italian Journal of pediatrics* 36:18 doi:10.1186/1824-7288-36-18
- 7.Shankar N, Tandon OP, Bandhu R, Madan N, Gomber S.2000. "Brainstem Auditory Evoked Potential Responses in Iron Deficient Anemic Children." Indian J Physiol Pharmacol. 44(3):297-303 Bhatia D, Seshadri 1993. "Growth Performance in Anemia and Following Iron Supplementation." Indian Pediatr.;30(2) :195-200.
- 8.Umamaheswari, Bhaskaran. Mythily, Krishnamurthy Gautham., Hemamalini and Vasudevan. Kavita, 2011. "Effect of Iron and Zinc Deficiency on Short Term Memory in Children." Indian Pediatrics . 48(4)289-293.



EFFECT OF AEROBIC EXERCISE ON SELECTED BIOCHEMICAL VARIABLES OF DIABETES PATIENTS

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ABSTRACT

The purpose of the study was to find out the effect of aerobic exercise on fasting and post prandial blood glucose of diabetes patients. For this purpose, ten diabetes patients (both type1 and type 2) including 8 men and 2 women subjects aged between 45 to 55 years were randomly selected from karaikudi, Tamilnadu, India as subjects. The training programme was designed for eight weeks and six days per week with low intense of aerobic exercise. Diabetes patients were treated as independent variable. Fasting and Post prandial blood glucose were treated as dependent variables. Pre test and post blood test were conducted on fasting and post prandial blood glucose. T-ratio was applied to find out the effect of aerobic exercise on fasting and post prandial blood glucose. The level of significance was 0.05. The results of the study showed that fasting and post prandial blood glucose is decreased in the post test of diabetes patients than the pre test.

KEYWORDS: Aerobic Exercise, Fasting Glucose, Post Prandial Glucose, Diabetes Patients.

INTRODUCTION

Diabetes is one of the oldest known disease. Diabetes is a metabolic disorder characterized by lack of the hormone insulin, insulin resistance or both resulting in hyperglycemia (high blood sugar) and other metabolic disturbances.

I-type 1 diabetes (or) Insulin Dependent Diabetes Mellitus (IDDM)

It is characterized by inadequate insulin production resulting from a problem that destroys the beta cells in the islets of langerhans in the pancreas.

II-type 2 diabetes (or) Non Insulin Dependent Diabetes Mellitus (NIDDM)

It is characterized by an excessive amount of fat deposition inside the abdomen and is often associated with high blood pressure.

III- Impaired Glucose Tolerance (IGT)

These are persons who have elevated glucose level after a glucose load but do not have diabetes. The conversion rate of IGT to NIDDM is 7% per year.

IV-Gestational Diabetes Mellitus (GDM)

Gestational diabetes is more likely to occur in persons with a family history of diabetes, previous delivery of a large birth weight baby and obesity. Approximately 50% of women who develop gestational diabetes will develop type 2 diabetes later in life.

METHODOLOGY

The purpose of the study was to analyze the effect of aerobic exercise on selected biochemical variables of diabetes patients. To achieve the purpose of the study ten diabetes patients (both type 1 and type 2) including 8 men and 2 women aged between 45 to 55 years were randomly selected from karaikudi, Tamilnadu, India as subjects. The Training programme was designed for eight weeks and six days per week with low intense aerobic type of activities. The subjects were asked to walk an hour from 5.45 am to 6.45 am. Pre and post blood test were conducted on fasting blood glucose and post prandial blood glucose. The collected data were subjected to t-ratio and level of significance was 0.05.

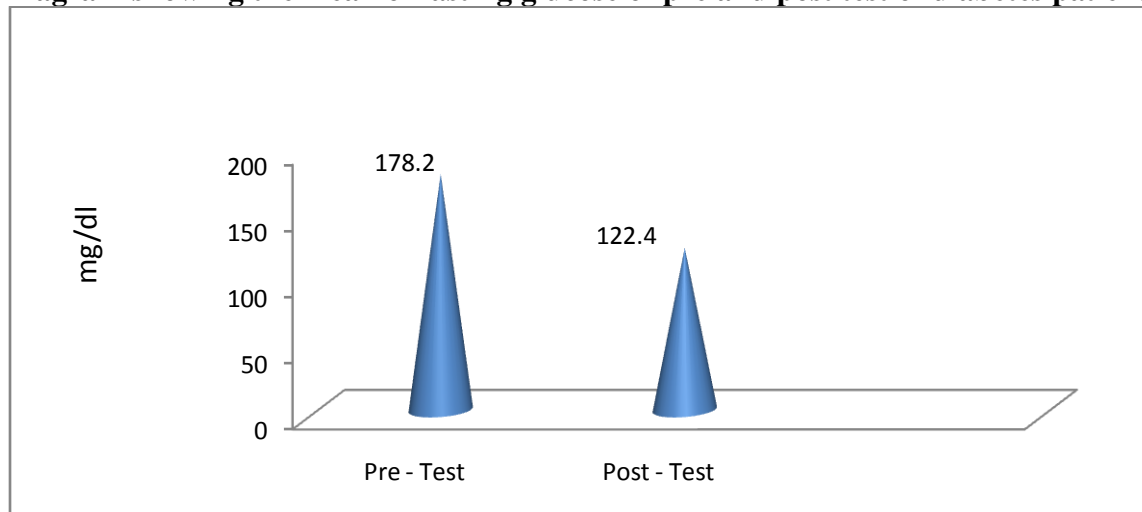
RESULT

TABLE-I
FASTING GLUCOSE OF PRE AND POST TEST OF DIABETES PATIENTS

Test	Mean	Std. deviation	T ratio
Pre test	178.20	22.08	11.68*
Post test	122.40	11.49	

*significant at 0.05 level

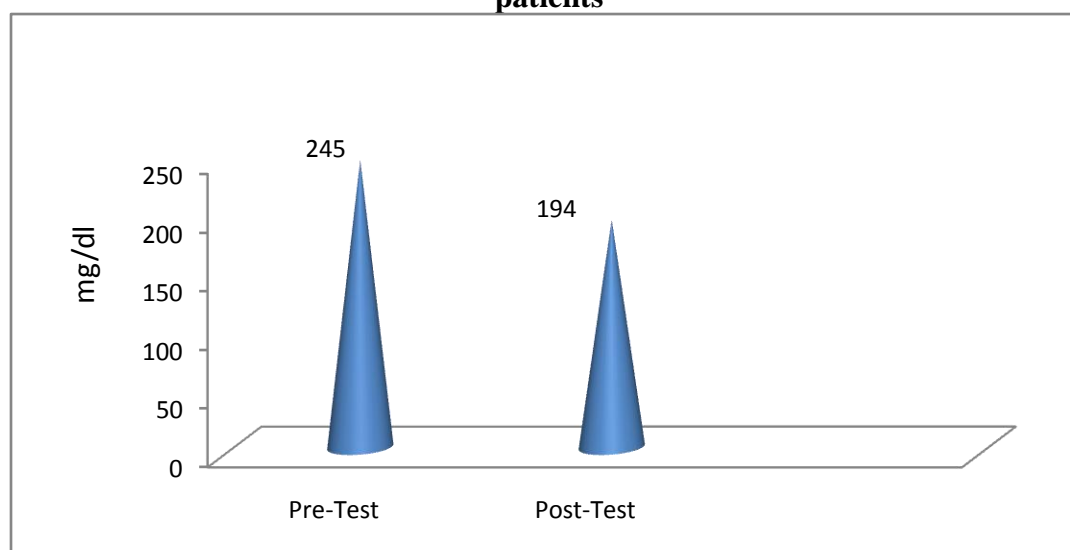
The obtained t-ratio for fasting glucose was 11.68 significant at 0.05 level of confidence since the value was higher than the required table value of 2.26 for degree of freedom 9.

Figure I**Diagram showing the mean of fasting glucose of pre and post test of diabetes patients****TABLE-II****POST PRANDIAL GLUCOSE OF PRE AND POST TEST OF DIABETES PATIENTS**

Test	Mean	Std. deviation	T ratio
Pre test	245	8.78	21.956*
Post test	194	9.79	

*significance at 0.05 level

The obtained t- ratio for post prandial glucose was 21.956 significant at 0.05 level of confidence since the value was higher than the required table value of 2.26 for degree of freedom 9.

Figure II**Diagram showing the mean of post prandial glucose of pre and post test of diabetes patients**

CONCLUSION

It was concluded from the result of the study that fasting blood glucose and post prandial blood glucose are decreased in the post test of diabetes patients than the pre test.

REFERENCES

Ramakrishna S : *Text book of medial biochemistry* : orient longman publication 1985.

Leutoltz Brain c and Ripoll Ignacio: *Exercise and Disease Management*: New York CRC press 1999.

Morris and Hardman: walking to health: *sports-med*.23(5):1997,30-32

Sato et al., (1996). Management of impaired glucose tolerance: physical training therapy: *Nippon-rinsho* ,54(10).



EMOTIONAL INTELLIGENCE AND ACADEMIC ACHIEVEMENT OF HIGH SCHOOL STUDENTS

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ABSTRACT

In the present study, 'Emotional Intelligence and Academic Achievement of High School Students', an attempt has been made to understand the relationship between emotional intelligence of a selected group of high school students and their academic achievement and demographic factors. The study was conducted at Vidya Vikasini Matriculation Higher Secondary School, Coimbatore, involving 298 (54 females and 36 males in the age range between 13 to 16) randomly selected students of VIII, IX and X standards. Trait Emotional Intelligence Questionnaire – Adolescent Short Form (Petrides et al., 2006) was used to assess the Emotional Intelligence of the students. The marks of two Term Examinations were collected from the school records. The data were analyzed by using Percentage Analysis, Analysis of Variance. The findings indicate that there is significant difference in Emotional Intelligence and Academic Achievement among high School Students.

KEYWORDS: *Emotional Intelligence, Matriculation, Questionnaire*

INTRODUCTION

Emotional Intelligence

Emotional intelligence is the ability to perceive emotion, to assess and generate emotion so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional intellectual growth (Dar, Alam and Lone, 2011). According to Goleman (1998), "Emotional Intelligence refers to the capacity for recognizing our own feelings and those of others, for motivating ourselves and in our relationship".

Four Dimensions of Emotional Intelligence

- **Appraisal and impression of emotion oneself**

This is related to an individual's ability to understand his or her deep emotions and to be able to express emotions naturally. People who have good ability in this area will sense and acknowledge their emotions better than most people.

Appraisal and recognition of emotion oneself

This is related to an individual's ability to perceive and understand the emotions around them. People who rate highly in this ability will be very sensitive to the emotions of others as well as be able to predict other's emotional responses.

- **Regulation of emotion in oneself**

This is related to the ability of a person to regulate his or her emotions enabling a more rapid recovery from psychological distress. A person with high ability in this area would be able to return quickly to normal psychological states after rejoining or being upset. Such a person would also have better control of his or her temper.

- **Use of emotions to facilitate performance**

This is related to the ability of a person to make use of his or her emotions by directing them towards constructive activities and personal performance. A person who is highly capable in this dimension would be able to encourage him or herself to do better continuously. He or she would be able to direct his or her emotions in positive and productive directions (Davies, Robert and Stankov, 1998).

Models of Emotional Intelligence

Two types of emotional intelligence models are available in the existing literature: (a) Ability model, which focuses on the mental abilities to determine emotional intelligence and (b) Mixed models, which seek to define emotional intelligence as a mixture of abilities and some personality traits and characteristics.

Ability Model of Emotional Intelligence

This model of emotional intelligence emphasizes on the cognitive components of emotional intelligence and conceptualizes emotional intelligence in terms of potential for intellectual and emotional growth (Shutte et al., 1998). Four sets of mental abilities ranging from basic to more complex psychological processes were proposed in this model. The first set, 'perception, appraisal, and expression of emotion of emotion' allows an individual to identify and express emotions in self and others. The second set is 'assimilating emotion in thought'. It allows an individual to use emotions to facilitate thinking and recognize respective consequences of

different emotional responses and to justify the appropriate one. The third set 'understanding and analyzing emotions' concerns with the ability to understand, label and acknowledge the emotions and to use emotional knowledge. The fourth set is 'reflective regulation of emotion', which deals with the ability to manage and adjust the emotional response to support the situational requirement (Bhattacharya and Senguptha, 2007).

Mixed Models of Emotional Intelligence

Mixed models include non-ability traits (motivation, optimism, interpersonal skill, and stress management) in conceptualizing emotional intelligence. Bar-On's, (1997) model of emotional intelligence is one of the most well-known mixed models. This model was fundamentally based on the personality characteristics. Five broad areas of emotional intelligence were proposed in this model: intra-personal skills (emotional self-awareness, assertiveness, self-regard, self-actualization); inter-personal skills (social responsibilities, empathy); adaptability (problem solving, reality testing, flexibility); stress management (stress tolerance, impulse control); and general mood (happiness and optimism). However, various authors have criticized this approach (Watson, 1930; Wessman and Ricks, 1966).

Factors Affecting Emotional Intelligence

Goleman (1995) identified 5 factors that affect Emotional Intelligence. They are: self-awareness, self-regulation, motivation, empathy and social skills. Similarly, Bar-On (2000) has identified 5 factors, such as intrapersonal ability, interpersonal ability, stress management, adaptability and general mood (Malekar and Mohanty, 2011).

Intrapersonal ability: It consists of related abilities like recognizing and labeling one's feelings. Intrapersonal ability includes emotional awareness and the ability to identify them correctly. Individuals scoring high on intrapersonal ability tend to understand their emotions and are able to express and communicate their feeling and needs.

Interpersonal ability: It consists of related abilities like identifying emotions in others and having empathy towards others. Interpersonal ability deals with the relationship with peers, subordinates and superiors. Individuals high on the interpersonal ability are likely to have satisfying interpersonal relationships, are good listeners and are able to understand and appreciate the feelings of others (Malekar and Mohanty, 2011).

Stress Management: It consists of abilities like resisting or delaying an impulse. Those with high stress management are generally calm and work well under pressure; they are rarely impulsive and can usually respond to a stressful event without an emotional outburst (Malekar and Mohanty, 2011).

Adaptability: It consists of abilities like being to adjust one's emotions and behavior to changing situations or conditions. Adaptability involves skills related to management of change. Managing change involves the ability to manage stressful situations in a relatively calm and proactive manner. Individuals who score high on this dimension are impulsive rarely and work well under pressure (Bar-On, 1997, 2000, 2002). Individuals with high adaptability scores are flexible, realistic and effective in managing change; good at finding positive ways of dealing with everyday problems (Malekar and Mohanty, 2011).

General mood: It is defined as the ability to feel and express positive emotions and remain optimistic (Bar-On, 1997). It represents the ability to enjoy life and maintain a positive

disposition. Individuals having higher levels on general mood feel satisfied with their lives and maintain a positive Outlook (Malekar and Mohanty, 2011).

Enhancement of Emotional Intelligence

Improving Self-awareness

Self-awareness is the first step towards becoming an emotionally intelligent individual. Meditation is one of the best methods of becoming aware about oneself and concentrate on the goals to be achieved in life. To meditate, some time has to be taken out to relax, being aware of own breathing as it flows in and out. The floating thoughts and feelings are to be observed. However during this period, it is not recommended to judge those feelings or thoughts. This eventually makes an individual realize that, he /she as a human being should not be emotionally controlled by the current thoughts and emotions that are being experienced at the time. Rather, an individual should try to direct the emotions positive thoughts, so that negative thoughts can be avoided and/ or channeled constructively for individual's growth, well-being and fulfillment of life plan. Another good way to become more aware your emotion is to maintain a diary and write about the feelings being experienced in significant happening, interactions and encounters. This process in due course of time makes an individual aware about the feelings, which in turn, will generate positive energy to work in a more purposive way (Bhattacharya and Senguptha, 2007).

Accepting Responsibility for Own Feelings

It is important to take responsibility for the both positive and negative emotions one is experiencing. It is human natures to refuse acknowledge that he/she is having negative and detrimental feelings. This will lead to problem as we still continue to act from our emotions even if we deny them to ourselves and put a mask on ourselves. Sometimes we even project them on to other people and tend to misread people's emotions. For instance, someone who is in a denial mode about his/her own anger may perceive another person's silence as an expression of anger. Moreover, human tendency sometimes is to make other people or situation responsible for one's own dysfunctional or negative emotions. To avoid situations such as above one need to take charge over one's own emotion, that is, to fall back upon one's inner locus of control and then only one would be successful in regulating the feeling within. And instead of leaving the outer factors to control one's inner world, one would be able to operate from an enhanced feeling of self-autonomy in relating to the outside world (Bhattacharya and Senguptha, 2007).

Managing Negative Emotions

For most individuals, it is but natural that there will be a gap between the perceived ideal self and real self. Instead of feeling bad, inadequate or embarrassed about it, one needs to think positively and generate actions to reduce the perceived gap. The mechanism to do so may vary from individual to individual. The starting point may well be to address life's significant calls and missions with a reality orientation which an individual may be able to acquire by balancing the emotional and logical sides of the self and with a re-channeling mental energy into positive and constructive modes. Continuing to feel bad or generate negative and self-blaming feelings can only make matters worse. For enhancing the reality orientation, we have talked above, one way is to draw on one's emotional intelligence to identify a situation or problem in terms of whom, what and how and use this knowledge for goal achievement (Bhattacharya and Senguptha, 2007).

Managing Positive Emotions

Free joyful behavior is not a connoted as acceptable and desirable behavior in all social / organizational contexts. Adequate care must be taken to ascertain the exact collective emotion prevailing in a given place and time, before sharing or exhibiting positive emotions. An example of this may be found in joyful behavior exhibited by a colleague on declaration of his promotion or raise without finding out whether his other colleagues are in a similar situation or not (Bhattacharya and Senguptha, 2007).

Personal Filters

Our thoughts, ideas, and feelings from our earlier experiences result into some filters which influence the nature and amount of information we would here. There are four types of filters: prediction filter, the 'who' filter, the facts filter and distracting thoughts (Weisinger, 1998). The filters result into impulsive decision making and reaction. The 'who' filter keeps us from hearing what is being said because we place importance on who says it. If the speaker is a significant person for us, we may overvalue the comments he/she makes and vice a versa. Sometimes we only here the facts and miss out the emotional component of the message. In the earlier discussions, we have already focused on the empathy which requires that judgments that a situation should be seen from emotional angle as well to get the real message. Almost everybody faces problems from the 'wondering mind' which can block out the significant parts of communication. This generally happens because of the lack of interest in the discussion, pre-conceived notions about the speaker, even due to a bad mood (Bhattacharya and Senguptha, 2007).

Inner Motivation

Inner motivation is the key to regulating emotion for achieving goal-directed behavior. A way to do it may be to assess one's capability and skills which can enable to achieve the desired goal. Reminding one constantly about the positive outcomes from the efforts take

Need for the Study

Contemporary psychological research literature indicates emotional intelligence (EI) as positively implicated in physical health, mental health, relationship, conflict resolution, success and leadership. Nevertheless, IQ is still recognized as an important element of success, particularly when it comes to academic achievement. Individuals with high IQs typically to do well in school, often earn more, and tend to be healthier in general. But today experts recognize it is not the only determinate of life success. Instead, it is part of a complex array of influences that includes emotional intelligence among other things. When such is the scenario, it becomes imperative that the educational system laid the foundation and nurture emotional intelligence in schools. Healthy classroom environments depend on the creation of a classroom culture that allows children to develop emotional intelligence competencies. It has been identified that social emotional learning (SEL) is a method for developing the skills of emotional intelligence in school children. In the present study, an attempt has been made to understand the significant difference in emotional intelligence of a selected group of high school students and their academic achievement.

Correlates of Emotional Intelligence

Yelkikalan et al. (2013) conducted a study on “Emotional Intelligence Characteristics of Students Studying at various Faculties and Colleges of Universities”. The tool used for this study was developed by Petrides (2001). It was administered to 559 students studying in five different faculties. The results revealed that there was no significant difference in the relationship between the faculty of students and their emotional intelligence, there was a significant relationship between the emotional intelligence and academic achievement and almost 11% of change in academic achievement could be explained by emotional intelligence.

A study on “The Interaction of Emotional Intelligence and Self – Efficacy with English as a Foreign Language Learners Age and Gender” was done by Talebinezhad and Banihashemi (2013). The researchers conducted the study with 83 Iranian English as Foreign Language Learners including 44 females and 39 males. Their age varied from 16 to 18, and 22 to 24. Tools used for this study were Emotional Quotient Inventory (EQ-I), General Self – Efficacy (Schwarzer and Jerusalem, 1979) and Self – Efficacy for Learning Form (Zimmerman, Kitsantas, and Campillo, 2005). The results showed that there was no significant difference among female and male participants regarding the level of their emotional intelligence and self-efficacy.

Paramasivam and Mani (2013) had done a study on “Influence of Emotional Intelligence on Achievement in Chemistry among Higher Secondary Students”. A stratified random sample of 500 (250 boys and 250 girls) first year higher secondary students was involved in the study. The tools used for the study were Emotional Intelligence Scale (Hyde, Pethe and Dhar, 2002) and Achievement Test in Chemistry constructed and validated by the investigators. Students pursuing plus one course during the academic year 2012-13 constituted the population of the study. The study indicated that there was a significant positive relationship between emotional intelligence and achievement in chemistry of higher secondary students. Further it also highlighted the effect of self-motivation, emotional stability and self-awareness factors of emotional intelligence on achievement in chemistry of Higher Secondary students.

Naghavi, Redzuan, Asgari and Mirza (2012) had done a study on “Gender Differences and Construct of the Early Adolescent’s Emotional Intelligence”. The study was carried out among 234 Iranian students (girls and boys) in the second grades of guidance schools (age 12-15) in Tehran, Iran. The tool used for this study was Schutte’s (1998) Emotional Intelligence Scale. Result showed that there was a statistically significant difference between emotional intelligence among boys and girls.

A Comparative Study of “Identity, Emotional Intelligence, and Self-Esteem in Students of Performing Arts and Students of other Fields of Art” was done by Abdi and Bagheri (2012). The sample consisted of the students of arts in the Faculty of Fine Arts (University of Tehran) and the Performing Arts in drama schools in Tehran. The students of Arts were randomly selected from those in the fields of painting, photography, graphic design, and sculpting with original opuses. The instruments included in the study were Objective Measure of Ego Identity Status, Bar-On’s Emotional Quotient Inventory and Coopersmith Self-Esteem Inventory. The result revealed that there was a significant difference between performing artists and non-performing artists in emotional intelligence profile scores and self-esteem scores with 95% reliability.

Enhancement of Academic Achievement

Menon and Farhana (2013) conducted a study on ‘Anxiety and Study skills in Underachievers among High School Students’. Manifest Anxiety Inventory (Nandini Menon and Hemalatha

Ntesan, 2005) and Study Skill Questionnaire (Kanchana, 1986) were administered on 300 students from VII, VIII and IX standards. Based on Half Early Examination marks, 60 underachievers were identified and Study Skills Training was given to them. The result revealed the there was a positive correlation between study skills and academic performance and negative correlation between anxiety and academic performance. A statistically significant difference in anxiety and academic achievement was observed in the students before and after Study Skills Training.

A study on “Enhancing academic performance and social and emotional competence with the RULER feeling words curriculum” was done by Brackett, Rivers, Reyes, and Salovey (2012). A pre- and post-test quasi-experimental design was used to test the impact of a 30-week, theoretically-based social and emotional learning (SEL) curriculum, The RULER Feeling Words Curriculum (“RULER”), on the academic performance and social and emotional competence of 5th and 6th grade students (N=273) in fifteen classrooms in three schools. Academic performance was assessed by report card grades. Social and emotional competence was assessed with teacher reports of student behavior. Students in classrooms integrating RULER had higher year- end grades and higher teacher ratings of social and emotional competence (e.g., leadership, social skills, and study skills) compared to students in the comparison group. Results showed that students in the RULER group had higher adaptive skills than students in the comparison group.

Hock, Pulvers, Deshler and Schumaker (2001) examined “The Effects of an After-School Tutoring Program on the Academic Performance of At-Risk Students and Students with LD”. A multiple-baseline design with Follow up condition was administered to 24 junior high students. Result revealed that strategic tutoring was effective in improving the academic performance.

OBJECTIVES

- To assess the level of Emotional Intelligence of the High school students
- To assess the level Academic Achievement of the High school students
- To find out the Emotional Intelligence and Academic Achievement of the High school students with Reference to Gender, Birth Order, Socio Economic Status, Place of Living and Type of Family.
- There is significant difference in emotional intelligence and Academic Achievement among high School students

HYPOTHESES

- There is no gender differences in Emotional Intelligence and Academic achievement of the High school students
- There is no significant difference in Emotional Intelligence and Academic Achievement among high School students

Sample

From Vidya Vikasini Matriculation Higher Secondary School, Coimbatore, 298 students studying in VIII, IX and X were randomly selected to serve as the sample of the study. The sample included both boys and girls. They were in the age range of 13-16 years.

Tools

- Case Study Schedule was used to collect the required demographic data of the participants.
- Trait Emotional Intelligence Questionnaire – Adolescent Short Form (TEIQue- ASF) (Petrides et al., 2006) was used to assess the Emotional Intelligence of the participants. TEIQue- ASF consists of 30 items. There are 7 possible responses to each item ranging between Agree - Disagree. The participants are asked to circle any one of the alternatives, which apply to them most. The internal consistency of the global score exceeds .80.

Ethical Clearance

Prior to the commencement of the data collection, the Research Proposal (AUW.IHEC.2013:68) submitted by the Principal Researcher (II PG Student) and the Guide (Co Researcher and Faculty) to the Institutional Human Ethics Committee had been scrutinized. The committee has granted approval for the research proposal and the approval number obtained is AUW/IHEC-13-14/XMT-17.

Procedure

From Vidya Vikasini Matriculation School, Coimbatore, 298 students studying in VIII, IX and X were randomly selected for the study. They were provided with an introductory session to build rapport. After the introductory session, the participants completed Case Study Schedule, Trait Emotional Intelligence Questionnaire – Adolescent Short Form .

Analysis of Data

The data were analyzed by Percentage Analysis, ANOVA was analysed using SPSS+PC package.

RESULTS AND DISCUSSION

TABLE 1: DEMOGRAPHIC DATA OF THE HIGH SCHOOL STUDENTS N=298

Gender	N	Percentage (%)
Male	137	46
Female	161	54
Birth Order		
First	117	39
Last	109	37
Middle	9	3
Only Child	63	21
Socio Economic Status		
High	23	8
Moderate	274	92
Low	1	0
Place of Living		
Urban	256	86
Rural	42	14
Type of Family		
Joint	51	17
Nuclear	247	83

Percentages are rounded off

Table 1 shows the demographic data of the sample. It can be noted that the sample constituted of more female than (54%) male (46%). The first born (39%) outnumber the rest of last born (37%), middle born (3%) and single child (21%). Most of the sample belonged to moderate socio economic status (92%). The sample constituted of 86% of urban residents and 14% rural. A large majority (83%) of the sample belonged to nuclear families and the rest to joint families (17%).

TABLE 2: LEVEL OF EMOTIONAL INTELLIGENCE OF THE SAMPLE
N=298

Level of Emotional Intelligence	N	Percentage (%)
Very High (183 & above)	0	0
High (132-182)	49	16
Average (81-131)	247	82
Below Average (30-80)	2	1

TABLE 3: LEVEL OF ACADEMIC ACHIEVEMENT

	N	Mean	Std. Deviation	Minimum	Maximum
High	22	268.0000	68.64470	121.00	370.00
Moderate	274	304.5474	56.36426	123.00	398.00
Low	2	244.0000	8.48528	238.00	250.00
Total	298	301.4430	58.03092	121.00	398.00

TABLE 4: APPROXIMATE F VALUE OF EMOTIONAL INTELLIGENCE AND ACADEMIC ACHIEVEMENT AMONG HIGH SCHOOL STUDENTS.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	33845.647	2	16922.823	5.166	.006
Within Groups	966327.883	295	3275.688		
Total	1000173.530	297			

The above table denotes that there is significant difference among High School Students. There will be no significant difference in Emotional Intelligence and Academic Achievement among High School Students is rejected.

CONCLUSION

- Fifty four percentages of the participants were female and 46% male.
- The first born (39%) outnumber the rest of last born (37%), middle born (3%) and single child (21%).

- Most (92%) of the participants belonged to moderate socio economic status. None belonged to lower economic status.
- The participants constituted of 86% of urban residents and 14% rural.
- A large majority (83%) of the participants belonged to nuclear families and the rest to joint families (17%).
- Eighty two percentage of the participants had Average Emotional Intelligence.
- There will be no significant difference in Emotional Intelligence and Academic Achievement among High School Students.

Limitations

- A larger sample could not be taken for the study as it was difficult to obtain permission from the authorities of the High school.
- The study could not be conducted in other schools due to paucity of time during the final semester of post graduation.

Recommendations

- Counsellors trained in various study skills and cognitive behavioural techniques could be appointed in all schools.
- Educational psychologists can offer their services to the teachers and parents.
- Parents and teachers could be given awareness about Emotional Intelligence.
- Students should be given awareness about the importance of developing Emotional Intelligence.
- Social Emotional Learning (SEL) should be recognized as a mandatory part of the school curriculum.

REFERENCES

- Abdi, F. & Bagheri, F. (2012). A Comparative Study of Identity, Emotional Intelligence and Self-Esteem in Students of Performing Arts and Students of other Fields of Art. International Research Journal of Applied and Basic Sciences. 3(4), 778-789. Retrieved 23.01.2014 from <http://ecisi.com/wp content/uploads/2012/06/778-789.pdf>
- Bar –On (1997, 2000, 2002). In Malekar, S. & Mohanty, R.P. (2011). Constructing an Emotional Intelligence Radar for Indian School students. Educational Research. 2(1), 790-802.
- Bhattacharya, M.S. & Senguptha, N. (2007). Emotional Intelligence: Myth or Reality? First Edition. Excel Books, New Delhi, 3-15, 23-25.
- Brackett, M. A., Rivers, S.E., Reyes, M.R. & Salovey, P. (2012). Enhancing Academic Performance and Social and Emotional Competence with the RULER feeling words Curriculum. Learning and Individual Differences. 22 (2012), 218–224. Retrieved 23.01.2014 from http://ei.yale.edu/wp content/uploads/2013/07/pub185_LAIDarticle_2012.pdf
- Dar, O.H., Alam, S. & Lone, Z.A. (2011). Journal of the Indian Academy of Applied Psychology. Relationship between Emotional Intelligence and Psychological Well-being of Male Police Personnel. 37(1), 47 – 52.
- Davies, Robert & Stankov (1998). In Bhattacharya, M.S. & Senguptha, N. (2007). Emotional Intelligence: Myth or Reality? First Edition. Excel Books, New Delhi, 3-15, 23-25.

Goleman (1995). In Malekar, S. & Mohanty, R.P. (2011). Constructing an Emotional Intelligence Radar for Indian School students. Educational Research. 2(1), 790-802.

Goleman (1998). In Dar, O.H., Alam, S. & Lone, Z.A. (2011). Journal of the Indian Academy of Applied Psychology. Relationship between Emotional Intelligence and Psychological Well-being of Male Police Personnel. 37(1), 47 – 52.

Hock, M.F., Pulvers, K.A., Donald, D.D. & Schumaker, J.B. (2001). The Effects of an After-School Tutoring Program on the Academic Performance of At-Risk Students and Students with LD. Remedial and Special Education. 22(3), 72-186. Retrieved 27.3.14 from <http://www.diversity-project.org/pdf%20files/The%20Effects%20of%20an%20After-School%20Tut%20article.pdf>

Hyde & Dethle (2002). In Punia, S & Sangwan, S. (2011). Emotional Intelligence and Social Adaptation of School Children. J Psychology. 2(2), 83-87. Retrieved 23.01.2014 from <http://www.krepublishers.com/02-Journals/JP/JP-02-0-000-11-Web/JP-02-2-000-11-Abst-PDF/JP-02-2-083-11-072-Punia-S/JP-02-2-083-11-072-Punia-S-Tt.pdf>

Hyde, Pethe & Dhar (2002). In Paramasivam, P. & Mani, S. (2013). Influence of Emotional Intelligence on Achievement in Chemistry among Higher Secondary Students. The African symposium, an online journal of the African Educational Research Network. 10(2), 127. Retrieved 23.01.2014 from <http://theglobaljournals.com/ijsr/file.php?val=MTY2NA==>.

Hydes & others (2002). Chamundeswari, S. (2013). Emotional Intelligence and Academic Achievement among Students at the Higher Secondary Level. Personality and individual differences. 32(2002), 197-209, Retrieved 23.01.2014 from http://hrmars.com/hrmars_papers/Emotional_Intelligence_and_Academic_Achievement_among_Students_at_the_Higher_Secondary_Level.pdf

Malekar, S. & Mohanty, R.P. (2011). Constructing an Emotional Intelligence Radar for Indian School students. Educational Research. 2(1), 790-802.

Mayer & Salovey (1997). In Dar, O.H., Alam, S. & Lone, Z.A. (2011). Journal of the Indian Academy of Applied Psychology. Relationship between Emotional Intelligence and Psychological Well-being of Male Police Personnel. 37(1), 47 – 52.

Menon, P. & Farhana, S.B. (2013). Anxiety and Study skills in Underachievers among High School Students. Int. J. Cur. Tr. Res. 2 (1), 1-6. Retrieved 27.3.14 from <http://www.injctr.com/ArchiveDetails.aspx?Value=59>

Naghavi, F., Redzuan, M., Asgari, A. & Mirza, M. (2012). Gender Differences and Construct of the Early Adolescent's Emotional Intelligence. Life Science Journal. 9(2), 124-128. Retrieved 23.01.2014 from http://www.lifesciencesite.com/ljsj/life0902/021_8322_life0902_124_128.pdf

Paramasivam, P. & Mani, S. (2013). Influence of Emotional Intelligence on Achievement in Chemistry among Higher Secondary Students. The African symposium, an online journal of the African Educational Research Network. 10(2), 127. Retrieved 23.01.2014 from <http://theglobaljournals.com/ijsr/file.php?val=MTY2NA==>.

Petrides & Furnham (2006). In Yelkikalan, N. et al. (2013). Emotional Intelligence Characteristics of Students Studying at Various Faculties and Colleges of Universities. European

Scientific Journal April Edition. 8(8), 33-50. Retrieved 23.01.2014 from <http://eujournal.org/index.php/esj/article/viewFile/129/134>

Petrides,(2001). In Yelkikalan, N. et al. (2013). Emotional Intelligence Characteristics of Students Studying at Various Faculties and Colleges of Universities. European Scientific Journal April Edition. 8(8), 33-50. Retrieved 23.01.2014 from <http://eujournal.org/index.php/esj/article/viewFile/129/134>

Schutte,N.S, Malouff, J.M. & Thorsteinsson, E.B.(2013). Increasing Emotional Intelligence through Training: Current Status and Future Directions. The International Journal of Emotional Education. 5(1), 56-72. Retrieved 27.01.2014 from http://www.um.edu.mt/_data/assets/pdf_file/0005/183884/vol5i1p4.pdf

Schutte (1998). In Naghavi,F., Redzuan,M., Asgari,A & Mirza, M.(2012). Gender Differences and Construct of the Early Adolescent's Emotional Intelligence. Life Science Journal. 9(2), 124-128. Retrieved 23.01.2014 from http://www.lifesciencesite.com/ljsj/life0902/021_8322life0902_124_128.p

Shutte, Malouff, Hall, Haggerty, Cooper, Golden & Dornheim (1998). In Malekar, S. & Mohanty, R.P. (2011). Constructing an Emotional Intelligence Radar for Indian School students. Educational Research. 2(1), 790-802.

Shutte et al. (1998). In Bhattacharya, M.S. & Senguptha, N. (2007). Emotional Intelligence: Myth or Reality? First Edition. Excel Books, New Delhi. 3-15, 23-25.

Watson (1930); Wessman & Ricks (1966). In Bhattacharya, M.S. & Senguptha, N. (2007). Emotional Intelligence: Myth or Reality? First Edition. Excel Books, New Delhi. 3-15, 23-

Yelkikalan, N. et al. (2013). Emotional Intelligence Characteristics of Students Studying at Various Faculties and Colleges of Universities. European Scientific Journal. 8(8), 33-50. Retrieved 23.01.2014 from <http://eujournal.org/index.php/esj/article/viewFile/129/134>

Zimmerman, Kitsantas & Campillo (2005). In Talebinezhad, M.R. & Banihashemi, F.(2013). The Interaction of Emotional Intelligence and Self – Efficacy with EFL Learners` Age and Gender. International Research Journal of Applied and Basic Sciences. 4(7), 1966-1971. Retrieved 23.01.2014 from http://www.irjabs.com/files_site/paperlist/r_938_130624163836.pdf.



EFFECT OF AEROBIC AND PRANAYAMA TRAINING ON FORCED VITAL CAPACITY AND PEAK EXPIRATORY FLOW RATE OF PREPUPERTY BOYS.

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ABSTRACT

The purpose of the study to find out the Effect of aerobic and Pranayama training on Forced Vital Capacity and Peak Expiratory Flow Rate of prepuperty boys. To achieve this purpose of the study has selected 30 school boys on random sampling technique. The selected subjects were divided into three groups namely experimental group I & II, control group III. The training programme was included pre test and post test session over a period of 12 weeks which was considered to be adequate time for the change among selected variables. The training was given for six days in a week. The subjects of yoga, aerobic training and control group were tested on Forced Vital capacity and Peak Expiratory Flow Rate with wet spirometer. The data were collected from the three groups before and after the experimental period and analysed by the analysis of variance(ANOVA) and analysis of covariance (ANCOVA) to find out the significant difference. The level of significance was fixed at 0.05 levels. If the "F" value for the final test is significant, scheffe's post hoc test was used to find out the significant mean difference between the groups. The experimental groups showed significant improvement Forced Vital capacity and Peak Expiratory Flow Rate than the control group. The aerobic exercise group showed better improvement on Forced Vital capacity and Peak Expiratory Flow Rate than the yoga group.

KEYWORDS: *Pranayama, Aerobic Exercise, Forced Vital Capacity And Peak Expiratory Flow Rate*

INTRODUCTION

Aerobic exercises require heart and lungs adapt, leading to increases in heart rate as well as breathing rate and depth. During exercise, the lungs must work harder to supply the increased oxygen required by the working muscles as well as exhale increased carbon dioxide. This is accomplished by increasing both the rate and depth of breathing. The tidal volume increases substantially during strenuous exercise from the resting volume of 1/2 liter to as high as 3 liters. This means that each breath in and out moves approximately six times as much air during exercise as during the resting state. It is decreased fatigue and potentially increases in vital capacity, or the maximal amount of air can exhale from the total lung capacity. In yoga, the slower breathe, can longer live. This is more efficient in respiratory rate and we have the more energy. It helps in increasing the Physiological level. The purpose of the study was to find out the effect of pranayama and aerobic exercise on tidal volume and vital capacity of school boys. The researches show the yoga group had significant improvement in lung volume and increased exhalation force, along with improved posture. Their chest wall expansion had increased 38 percent in the upper chest, 19 percent in the mid-chest and 15 percent in the lower chest

METHODOLOGY

To achieve this purpose the investigator has selected 30 school boys on random sampling technique from the School. The selected subjects were divided into three groups namely experimental group I & II and control group III. The training programme including pre test and post test session over a period of 12 weeks which was considered to be adequate time for the changes among selected variable. The training was given for six days in a week. The subjects of Pranayama, aerobic training group and control group were tested on forced vital capacity and Peak Expiratory Flow rate with wet spiro meter. The data were collected from the three groups before and after the experimental period and analysed by the analyses of variance (ANOVA) and analyses of covariance (ANCOVA) to find out the significant difference. The level of significance was fixed at 0.05 levels. If the "F" value for the final test is significant, scheffe's post hoc test was used to find out the significant mean difference between the groups. The subjects of Pranayama, aerobic training group and control group were tested for Forced Vital capacity and Peak Expiratory Flow Rate with the help of wet Spiro meter at Pondicherry Institute of medical Sciences, Kalapet.

RESULTS AND DISCUSSION

Table I. Computation of ANOVA of Experimental group and Control group of Forced Vital capacity and Peak Expiratory Flow Rate

		Source	Sum of Square	DF	Mean Square	F
Forced Vital capacity	Initial	Between Group	101946.667	2	50973.333	0.488N.S
		Within Group	2820200.00	27	104451.852	
	Final	Between Group	2110160.00	2	1055080.00	11.991**
		Within Group	2375790.00	27	87992.222	
Peak Expiratory Flow Rate	Initial	Between Group	0.369	2	0.184	1.570N.S
		Within Group	3.170	27	0.117	
	Final	Between Group	2.579	2	1.289	8.509**
		Within Group	4.091	27	0.152	

From the table II, it can be seen that the computed “f” ratio of 0.488 Forced Vital capacity (FVC) and 1.570 Peak Expiratory Flow Rate (PEFR) for the initial test means among the experimental group and control group were insignificant ($P > 0.05$) at 0.05 level of confidence with the degrees of freedom being 1, 27; it clearly indicated that the random assignment of groups were quite successful. Further, it revealed that the calculated “f” ratio of 11.991 (FVC) and 8.509 (PEFR) for the test means among the experimental groups and the control groups were significant ($P > 0.05$) at 0.05 level of confidence with the degrees of freedom being 1, 27. This showed that the treatment of Pranayama and aerobic practice have made the significant difference in the mean values among the groups. Hence the ANCOVA technique was employed to find out the difference between the adjusted post test means was significant or not. Subramanian (2001) conducted that there is a significant improvement in aerobic capacity as a result of practice of asanas and practice of asanas along with pranayama and meditation. However, improvement in aerobic as a result of the combined practice asanas, pranayama and meditations is significantly higher than the practice of asanas alone. This may be due to the effect of pranayama and meditations

Table II. Computation of ANCOVA of Experimental group and control group of Forced Vital Capacity and Peak Expiratory Flow Rate

	Source of Variance	Sum of Square	DF	Mean Square	F ratio
Forced Vital Capacity	Between Group	1382534.866	2	691267.433	35.773**
	Within Group	502417.143	26	19323.736	
Peak Expiratory flow Rate	Between Group	0.869	2	0.435	27.855**
	Within Group	0.406	26	0.016	

As the primary aim of analysis of covariance, the adjusting the initial means with final means and testing there adjusted means was done. “F” ratio obtained from testing the adjusted means of 35.773 (FVC) and 27.855 (PEFR) were high in compare with the required table f ratio of 5.49 at 0.05 level of confidence with the degrees of freedom being 1, 27. Hence the chosen variables for the study is well significant at ($p < 0.05$) at 0.05 level.

Table III : Scheffe’s Post Hoc Test for Mean Difference between Group on Forced Vital Capacity and Peak Expiratory Flow Rate

Forced Vital Capacity			Mean Difference	Peak Expiratory Flow Rate			Mean Difference
Control Group	Pranayama Group	Aerobic Group		Control Group	Pranayama Group	Aerobic Group	
—	1583.936	1706.665	122.729	2.973	2.952	-	
1194.399	—	1706.665	512.266	2.973	-	2.585	
1194.399	1583.936	—	389.537	-	2.952	2.585	

This test shows that the ordered weighted mean difference of scheffe's Post hoc test values of Forced Vital Capacity and Peak expiratory flow rate of the pranayama, aerobic and control group. The above table indicates that there is significant difference between

the aerobic and control group. It is also seen that significant changes in the pranayama and control group.

DISCUSSIONS AND FINDING

The result of the study supported to the pulmonary function variables in favor of Pranayama and aerobic exercise training groups. Yoga is the practice of asana and pranayama with scientific three phases namely puraka (inhalation), Kumbhaka (holding the air in the lungs) and rechaka (exhalation) in a progressive manner works on the breathing mechanism centrally and the effect spread to the periphery too. Mainly the Lungs, Intercostals muscles, diaphragm and ribs are highly exercised during the Yoga and aerobic exercise. Thus it enhances the Forced Vital Capacity(FVC) and Peak Expiratory Flow Rate(PEFR) among the prepuberty boys significantly. This finding are supported the result of the Birkel D A and Edgren L (2000),Yadav RK and Das S (2001), Joshi L N ,Joshi VD and Gokhale L V (1992)

REFERENCE

1. Johnson,D.S. et al."Kapalabhati pranayama: breath of fire or cause of pneumothorax? A case report. Chest, 125(5),(April 1992).
2. Joshi L N Joshi V D and Gokhale L V, Effect of short term pranayama practice on breathing rate and ventilatory functions of lung" Indian journal of physiology and pharmacology (Apr 1992) :36(2)105-2.
3. Khalili MA and Elkins MR., "Aerobic exercise improves lung function in children with intellectual disability: a randomised trial" Australian Journal of Physiotherapy2009; 55(3):171-5.
4. Raju,P.S.et.al."Comparisons of effect of yoga and Physical Exercise in Athlete".Indian Journal of Medical Research (August 1994) 81(6)



MENTAL HEALTH AMONG HIGHER SECONDARY STUDENTS

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ABSTRACT

Education is an essential human virtue. The capacity to learn depends very much upon students' physical and mental health. Mental health is a state of successful mental functioning, resulting in productive activities, fulfilling relationships, the ability to adapt to change and to cope with adversity. Mental health is indispensable to personal well-being, family and interpersonal relationships, and one's contribution to society. The purpose of the study was to find the status of mental health among first year higher secondary students. The sample selected for the present study comprised of 360 first year higher secondary students from five different types of schools in Coimbatore District. Mental health inventory by Dr.Jagadish, a standardized tool was used for data collection using Survey method. Major findings of the study was Girls the girls posses a high level of mental health than boys. Government-aided school students have a high level of mental health when compared to any other school students. Majority of students(around 65%) posses average level of mental health .

KEY WORDS: *Mental Health, Inventory*

INTRODUCTION:

Mental health is a state of well-being in which a person understands his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. The capacity to learn depends very much upon students' physical and mental health. His mental and physical health depends on each other. Psychologists look at mental health in the form of ability of good adjustment. It is usually believed that people with good mental health are free from negative emotions such as fear, anxiety and anger. In short, they are self confident and take themselves as secure.

Knowledge of mental health of students is a necessity for a developing country. The findings of the study could be of vital importance in understanding the mental health of higher secondary students. It help the teachers to create classroom environments that foster confidence-building skills such as allowing students to take part in a talent show, or a presentation on a special skill they have. Parent/families can get a good understanding on how their children feel about themselves from these findings.

Garimagupta and Sushilkumar (2010) studied the "Mental health in relation to emotional intelligence and self -efficacy among college students." The Investigator studied the relationship of mental health with emotional intelligence and self-efficacy among college students. 200 participants (Male=100 and female=100) The results indicate that emotional intelligence and self-efficacy are positively correlated with mental health. It also revealed that male students were better than female students in terms of mental health

Subramaniam and Leena (2004) studied "Assessing self-confidence, mental health and frustration among injured sportsmen and women." The sample comprised 60 out of which 30 were sportsmen and 30 were sportswomen. Rekha Agnihotri's self-confidence tool and Tavier personality inventory (TPI) were used to assess mental health and Chauhan and Tiwari's frustration scale was used to assess frustration. Major findings of the study were: 1. There was a significant difference in the self-confidence and frustration between injured sportsmen and sportswomen. 2. There was no significant difference in mental health between injured sportsmen and sportswomen. 3. There were no interrelationships between self-confidence and mental health, self-confidence and frustration, and mental health and frustration of both.

Need and importance of study

People with good mental health feel comfortable about themselves. Mentally healthy people neither underestimated nor over estimate their abilities.. Mentally healthy people are able to meet the demand of life. He takes part in social activities enthusiastically and maintains good relations with others. Considering the importance of mental health, the following topic is chosen for the present study. As the adolescent age is very crucial in developing mental health, the investigator felt it is more apt to select a topic which has become the major concern for most of the teachers and parents.

Statement of the Problem

The topic of the present study is "*Mental Health among Higher Secondary Students*"

OBJECTIVES OF THE STUDY:

The following are the objectives of the present study.

1. To find out the level of mental health of Higher Secondary students.

2. To find out the status of mental health of Higher Secondary students with reference to the following variables such as gender, type of school, stream of study (Arts or Science group).

HYPOTHESES OF THE STUDY:

The following null hypotheses have been formulated and tested during the course of the study.

1. There is no significant difference in the level of mental health of the Higher Secondary students based on Gender ‘
2. There is no significant difference in the level of mental health between the Higher Secondary students with regard to type of schools.

METHODOLOGY:

The researcher selected the survey method to study the mental health among the higher secondary students. The sample selected for the present study comprised of 360 first year higher secondary students from five different types of schools in Coimbatore District. Mental health inventory by Dr.Jagadish, a standardized tool was used for data collection. The Inventory consists of 44 statements in which 19 are positive and 25 are negative statements. Personal Data sheet designed by the Investigator to collect preliminary information regarding XI class pupils' gender, school details, parental qualifications and family income

The collected data were consolidated and analyzed statistically The maximum score of mental health can be 176 and the possible lowest minimum score can be 44 .

Low level of mental health - Scores ranging between 44 and 113

Moderate level of mental health - Score ranging between 114 and 144

High level of mental health - Scores between 145 and 176

TABLE - I
MENTAL HEALTH STATUS AMONG STUDENTS OF DIFFERENT TYPE OF SCHOOLS

Level of mental health Type of School	Low level		Moderate level		High level		Grand Total
	N	%	N	%	N	%	
Government Aided	11	14.5%	40	52.6%	25	32.9%	76
Corporation (Girls)	10	14.5%	48	69.6%	11	15.9%	69
Corporation (Boys)	21	31.8%	40	60.6%	5	7.6%	66
Matriculation	16	21.9%	54	74.0%	3	4.1%	73
CBSE	2	2.6%	52	68.4%	22	29%	76
TOTAL	60	16.7%	234	65%	66	18.3%	360

N – Number of students

From the table it is clear that 234 students possess a moderate level of mental health which comes to around 65% of the total students. Among the schools, Government-aided top the list with 32.9% o

high level mental health followed by CBSE and Corporation Girls School with 29% and 15.9% respectively.

Matriculation school students show the highest percentage in the moderate level of mental health with 74% . With only 2.6% in low-level of mental health group, CBSE students prove that they are in the better place with regard to mental status.

TABLE II
MENTAL HEALTH: SCHOOL -WISE DESCRIPTIVE STATISTICS

Type of school	DESCRIPTIVE STATISTICS						
	Variable	Mean	Median	Mode	Standard Deviation	Min score	Max score
Government-aided	Mental health	135.18	136.5	145	17.16	100	164
Corporation Girls		129.06	129	114	15.65	103	168
Corporation Boys		121.97	120	112	14.67	100	151
Matriculation		121.7	121	114	13.20	93	161
CBSE		136.84	136.5	129	13.19	106	163

The maximum possible score that a student can get as per the Mental health Inventory is 176. From the above table we can infer that the maximum score in mental health is secured by the corporation girls' higher secondary school students. The mean scores of students in mental health show that CBSE students' are in the first place when compared to students of other schools.

TABLE: III
MENTAL HEALTH: GENDER- WISE DESCRIPTIVE ANALYSIS

Gender	DESCRIPTIVE STATISTICS						
	Variable	Mean	Median	Mode	Standard Deviation	Min score	Max Score
Boys	Mental health	125.80	124	115	15.63	99	161
Girls		132.61	133	114	15.88	93	168

The above table gives a detailed gender- wise description on the mean scores of higher secondary students and from which we can infer that the average score of girls in mental health is higher than that of boys. even the maximum score are obtained by the girls than boys.

FINDINGS OF THE STUDY:

The following are the major findings of the study on "Mental health among Higher Secondary Students." Out of the total students, 65% of the students have a moderate level of mental health

whereas the high level and low-level of mental health is seen among 18.3% and 16.7% of the students respectively.

- 1) With regard to gender wise mental health status, girls are found to have a better mental health as compared to that of boys. 23% of the girls possess a high level of mental health whereas the share of boys falls only around 13%.
- 2) With respect to level of mental health among students based on type of schools, around 33% of Government-aided school students have a high level of mental health
- 3) Around 65% of the total students possess a moderate level of mental health. With only 2.6% in low-level of mental health group, CBSE students prove that they are in the better place with regard to mental status.
- 4) The mean scores of students in mental health show that CBSE students' are in the first place when compared to students of other schools. The maximum score (168) in mental health is secured by the corporation girls' higher secondary school students.

CONCLUSION

It is fondly hoped that this research will be useful to all the learners, instructors and educational policy – makers to know certain things in this work which is a small piece in education. It is useful especially for future researchers to choose some of the suggestions provided in the study that may be helpful for providing guidelines to the field of education.

The present study has helped the investigator to gain some knowledge regarding the mental health of higher secondary students. The level of mental health among the present day students definitely will bring about a drastic beneficiary changes in the near future.” The teachers and the parents should take up the responsibility to enhance the students' self-confidence along with their mental health.

REFERENCES:

1. https://www.ccohs.ca/oshanswers/psychosocial/mentalhealth_intro.html
2. Subramaniam, and Leena.M (2004) Assessing Self-Confidence, Mental Health & Frustration among injured sportsmen & women. *Journal of Community Guidance and Research* , Vol 21, 166-173.
3. Garimagupta and Sushilkumar (2010) Mental health in relation to emotional intelligence and self efficacy among college students. *Journal of the Indian Academy of Applied Psychology*.
4. <http://medind.nic.in/jak/t10/i1/jakt10i1p61.pdf>



EFFECT OF AEROBIC CIRCUIT TRAINING ON MUSCULAR ENDURANCE AMONG MEN STUDENTS

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ABSTRACT

The purpose of the study was to analyze the effect of aerobic circuit training on muscular endurance among men students. To achieve the purpose of the study thirty men students were selected as subjects from St. Xavier's College, Palayamkottai. The age, height and weight of the subjects ranged from 18 to 22 years, 162 to 170 centimeters and 56 to 65 kilograms respectively. The selected subjects were randomly assigned into two equal groups of 15 subjects each. Circuit training group – I and control group – II. The analysis of data revealed that eight weeks of circuit training had a significant improvement on muscular endurance. Many athletes require good muscular endurance for effective performance in their sport. A circuit training session can be developed to meet their specific needs. By keeping rest intervals short a cardiovascular element is developed and by alternating exercises and muscle groups, more work can be completed for a longer period. Hence it was concluded that due to the effect of eight weeks of circuit training the muscular endurance of the subjects was significantly improved.

KEYWORDS: *Circuit Training And Muscular Endurance.*

INTRODUCTION

Physically fit people will live a long and healthy life. Their entire success of life depends largely on their physical fitness. A physically fit man not only lives for himself and also for others, the society and nation. Particularly in developing country like India the need for physically fit individuals are very essential. When we play a sport, we want to do the best in our sport. Training improves our sports performance. Selecting the appropriate training methods to incorporate in our training program is important for a number of reasons. A focused, structured, individualized training program can increase the breathing rate and our efficient use of oxygen. It can also help the body to work at a higher level of exercise for a longer time because it helps it get rid of lactic acid. It also helps our body convert more fat to energy that is lipid metabolism. Many athletes require good muscular endurance for effective performance in their sport. A circuit training session can be developed to meet their specific needs. By keeping rest intervals short a cardiovascular element is developed and by alternating exercises ad muscle groups, more work can be completed for a longer period. Circuit training for a multi-sprint sport such as soccer will differ significantly compared to circuit training for a marathon runner. Physical training is beneficial as long as it forces the body to adapt to the stress of the effort Bompa, (1999). In aerobic circuit, the subjects are asked to perform light aerobic movement as they move from one station to another.

METHODOLOGY

Subjects and Variables

The purpose of the study was to analyze the effect of aerobic circuit training on muscular endurance among men students. To achieve the purpose of the study thirty men students were selected as subjects from St. Xavier's College, Palayamkottai. The age, height and weight of the subjects ranged from 18 to 22 years, 162 to 170 centimetres and 56 to 65 kilograms respectively. The selected subjects were randomly assigned into two equal groups of 15 subjects each as Circuit training group – I and control group – II. The muscular endurance is selected as criterion variable. One minute sit-ups test was used to assess the muscular endurance.

Training Programme

The subjects underwent circuit training programme for three days per week for eight weeks. All the subjects involved in the training, programmed were questioned about their status throughout the training period. None of them reported any injuries. However, muscles soreness was reported in the early weeks, and it subsided later. In aerobic circuit training the experimental group performed the following exercises. They are Squat Jump, Push-Ups, Burpees, Sit ups, Skipping, Squat Thrusts, Treadmills, and Crunch.

The recovery period between circuits was two minute. Between the stations the subjects preformed light aerobic activities for thirty seconds. The number of repetition done at each station was prescribed in the training schedule.

Training Schedule

Days	Set/ Rep	I Week	II Week	III Week	IV Week	V Week	VI Week	VII Week	VIII Week
Monday	Rep	8	10	12	6	8	10	6	8
	Set	1	1	1	2	2	2	3	3
Wednesday	Rep	8	10	12	6	8	10	6	8
	Set	1	1	1	2	2	2	3	3
Friday	Rep	8	10	12	6	8	10	6	8
	Set	1	1	1	2	2	2	3	3

Experimental Design and Statistical Technique

The experimental design in this study was random group design involving 30 subjects. The subjects were divided at random in to two groups of fifteen each. Both the groups selected from the same population. No effort was made to equate the groups prior to the commencement of the experimental treatment. The pre test means of the selected dependent variable was used. The collected from the two groups prior to and post experimentation on selected dependent variables were statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA).

RESULTS

**ANALYSIS OF COVARIANCE ON MUSCULAR ENDURANCE OF CIRCUIT
TRAINING AND CONTROL GROUPS**

	Circuit training group	Control Group	Source of variance	Sum of Squares	df	Mean squares	'F' ratio
Pre test Mean SD	30.60	30.46	Between	0.13	1	0.13	0.03
	1.45	2.19	Within	97.33	28	3.47	
Post test Mean SD	34.40	30.80	Between	97.20	1	97.20	17.90*
	2.83	1.69	Within	152.00	28	5.43	
Adjusted Post test Mean	34.41	30.79	Between	98.49	1	98.49	17.94*
			Within	148.21	27	5.48	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 1 and 27 is 4.21 and degree of freedom 1 and 28 is 4.20.)

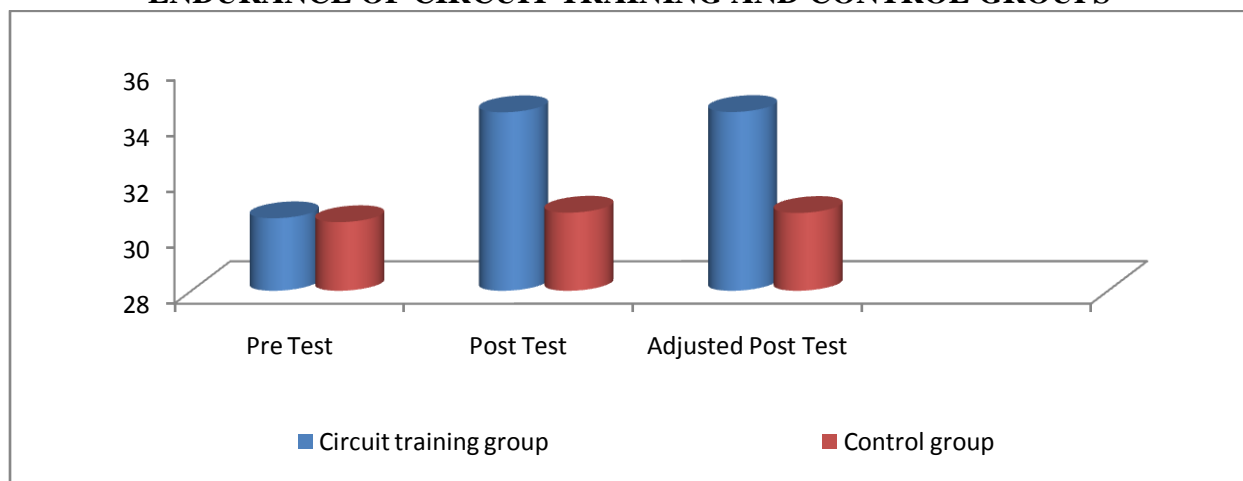
*Significant at .05 level of confidence

Table shows that the pre-test means and standard deviation on muscular endurance of circuit training group and control group are 30.60 ± 1.45 and 30.46 ± 2.19 respectively. The obtained 'F' ratio value is 0.03 of muscular endurance was less than the required table value of 4.20 for the degrees of freedom 1 and 28 at 0.05 level of confidence.

The post-test means and standard deviation on muscular endurance of circuit training group and control group are 34.40 ± 2.83 and 30.80 ± 1.69 respectively. The obtained 'F' ratio value is 17.90 of muscular endurance was greater than the required table value of 4.20 for the degrees of freedom 1 and 28 at 0.05 level of confidence.

The adjusted post-test means on muscular endurance of circuit training group and control group are 34.41 and 30.79 respectively. The obtained 'F' ratio value is 17.94 of muscular endurance was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of eight weeks of circuit training the muscular endurance of the subjects was significantly improved.

Figure
CYLINDER DIAGRAM SHOWING THE MEAN VALUE ON MUSCULAR ENDURANCE OF CIRCUIT TRAINING AND CONTROL GROUPS



DISCUSSION

Circuit training group had better performance on muscular endurance comparing to the control group. The following studies are supporting the current results. Marcinik, *et al.*, (1985). Investigated the Aerobic/calisthenics and aerobic/circuit weight training programs for Navy men. Study result showed that significant increases in muscular endurance and stamina. Haennel, (1991) Evaluated the effect of hydraulic circuit training on muscular strength and endurance of men. These findings suggest that improvements in muscular strength and endurance of men. Takeshima, *et al.*, (2004). Determined the physiological effects of a programmed accommodating circuit exercise (PACE) program consisting of aerobic exercise and hydraulic-resistance exercise (HRE) on fitness in older adults. The results indicated that significant improvements in cardiorespiratory endurance.

CONCLUSIONS

The conclusion of the study stated that the eight weeks of circuit training influenced to increase the muscular endurance of the men students. Circuit training group (men students) had better performance on muscular endurance comparing to the control group men students.

REFERENCES

- Bompa, Tudor O. (1999). *Periodization: Theory and methodology of Training*, (4thed), (champaign, Illinois: Human Kinetics Publishers, p. 24.)
- Haennel R.G., Quinney H.A., Kappagoda C.T., (1991). Effects of hydraulic circuit training following coronary artery bypass surgery. *Med Sci Sports Exerc.* 23(2):158-65.
- Marcinik E.J., Hodgdon J.A., O'Brien J.J., Mittleman K. (1985). Fitness changes of Naval women following aerobic based programs featuring callisthenic or circuit weight training exercises. *Eur J Appl Physiol Occup Physiol.* 54(3):244-9.
- Takeshima N., Rogers M.E., Islam M.M., Yamauchi T., Watanabe E., Okada A. (2004). Effect of concurrent aerobic and resistance circuit exercise training on fitness in older adults. *Eur J Appl Physiol.* 93(1-2):173-82.



THE IMPORTANCE OF PHYSICAL ACTIVITY, FOOD AND FITNESS FOR HUMAN HEALTH AND LIFE-A REVIEW

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ABSTRACT

The decline of physical activity and change in food habits are considered to play an important role in the deterioration of health predictors, such as overweight, and the associated increase of cardiovascular. Physical activity or exercise can improve the health and reduce the risk of developing several diseases. It can have immediate and long-term health benefits. By being active, calories that we store from eating throughout the day, can be exhausted and it can be as easy as walking the dog or as rigorous as participating in a marathon. Providing opportunities for children to be active early on puts them on a path to better physical and mental health. Physical activity, along with proper nutrition, is beneficial to people of all ages, background, and abilities. This paper emphasizes on incorporating physical activity into our daily life, as well as healthy eating we will experience positive health benefits and be on the path for a better future. More intensive and longer workouts need to be incorporated every week. This can include jogging, power yoga, weight training etc.

KEYWORDS: Physical Activity, Yoga, Health, Longevity

INTRODUCTION

Health professionals and researchers recommend a minimum of 30 minutes of moderate-intensity physical activity preferably all days for a individual to be in good health and sustain the good health condition. Regular physical activity can relieve stress, anxiety, depression and anger and also feel good sensation .Most people notice they feel better over time as physical activity becomes a regular part of their lives.

Benefits of Physical Exercise

It keeps physically fit and able. Regular activity is required for the body else the body slowly loses its strength and stamina and may not be able to function properly. When we stop our movements we grow old. Exercise increases muscle strength, which in turn increases one's ability to do other physical activities. It helps us avoid visiting a doctor.

It's recommended to avoid too much sitting as more sedentary activities can increase the risk of CVD's (cardio vascular diseases). Adults who watch more than 4 hours of television a day had an 80% higher risk of death from cardiovascular disease (Arbor, 2015). Regular physical activity is needed to alleviate stress, depression and anger. Most people feel better over time as physical activity becomes a regular part of their lives. Regular physical exercise can make us excited and give us joy throughout the day. It helps in longevity.

Physically active people with healthy weight live about seven years longer than those who are inactive and obese. These extra years are generally healthier years. Staying active helps in delaying onset of diseases and hence aging. So adults who are active are able to maintain the quality of life and independence equivalent to their age.

Maintaining ideal weight

Everyone wants to maintain an ideal body weight for an entire lifespan. The right diet and physical exercise regime aid us in maintaining both. Exercise helps to burn off extra calories.

Maintaining weight can be achieved by walking , a safest physical activity that doesn't harm our body. It is healthy for joints, heart and muscles. More intensive walking can be done by increasing the pace and duration of walk. Aerobic exercises and playing games can aid in maintaining constant weight. A minimum of 30 minutes moderate exercise every day is recommended for a healthy living and for maintaining weight. This can be accomplished by simply being more active at home.

Use of stairs instead of lift and cleaning house instead of watching TV are examples of active jobs at home. However, o lose weight, a brisk walk for 30 minutes /day is not suffice. Exercise that cause sweating are required to cut down on fats and calories to trim the flab.

Reduction of CVD

Moderate exercise cuts down on the risk of both heart disease and stroke and all leading causes of death. A two and half hour moderate exercise/week can lower risk for CVD. Regular physical activity can also lower elevated blood pressure and regulate cholesterol levels and help in keeping up a healthy heart.

Reduction of risks For Diabetes and Metabolic Syndrome:

Physical activity like walking carried out regularly can bring down blood sugar levels and thus lower the risks associated with developing type 2 diabetes and also metabolic syndrome. Metabolic syndrome is an extremely dangerous condition where multiple conditions like excess abdominal fat, high BP, low good or HDL cholesterol, high triglyceride levels are noted. These are responsible for heart disease, and high blood sugar.

Research shows that regular exercise lowers risk for diabetes and metabolic syndrome after just two and half hour/week of moderate-intensity aerobic exercise. Increasing the time of physical activity can further reduce this risk. Diabetic people can control blood sugar level and further can prevent multiple organ damage by doing regular exercise.

Reduction of Cancer Risks

Physical activities carried out regularly can keep us safe from breast and colon cancer. People who regularly exercise have lower risks of colon cancer compared to sedentary people.

There are also linkages between endometrial (<https://www.cancer.gov/types/uterine>) and lung cancer. Regular exercise can reduce risks of endometrial cancer and lung cancer.

Strengthening Bones And Muscles

Osteoporosis is common in post menopausal women because in absence of optimum levels of the hormone estrogen which protects bones (www.mayoclinic.com), the bones start leaching out calcium. This makes bones weak and fragile and can lead to fractures and breakages of bones due to small injuries. Women can lower their risk for osteoporosis through regular exercise. Even moderate exercises like walking and swimming protect women from osteoporosis.

Evidence also suggests that older people in general benefit the most from doing moderate muscle and bone strengthening activity daily. Moderate aerobic exercise for 2hours lower risk of hip fractures which is a life altering condition for older adults. Regular exercise also helps in managing pain due to arthritis and other conditions affecting the joints.

Builds Strong, Healthy Muscles

Weight training exercises increase and maintain muscle mass. With the onset of ageing, the body begins to shrink and loses height and girth. This is attributed to muscle shrinkage. Exercise helps in maintaining proper balance and prevent falls which are seen in ageing.

Exercise makes us Happy

Exercise is the best remedy for mental diseases like depression. Regular exercise releases mood enhancing endorphins into the blood stream which makes us happy(<https://www.webmd.com/depression>). Endorphins trigger a happy feel just like drugs do. It also gives us a positive outlook on life. Endorphins act as analgesics and reduce pain. They also act as sedatives. This is perhaps the main reason that regular exercise has been proven to reduce stress levels and ward off anxiety and feelings of depression. Physical activity is very good for the brain too. A few minutes' walk in a garden or in fresh air gives good feel.

Regular exercise makes us active and improves one's self-esteem. Exercising with others in a gym also boosts social contact which is a requisite for overcoming depression. Less pain naturally improves our moods and look

Safe life for Geriatrics

One can prevent lethal falls, improve balance, improve one's functional abilities that help in carrying out day-to-day chores by taking up simple exercise regularly. Lower risk of functional limitations is expected and experienced with exercise than inactive people.

Increases Life Span:

One way to increase our life span above 100 is through proper exercise. Exercise prevents cancers, heart disease and diabetes. Half an hour walk/day or 30 minutes of moderate activity like brisk walking can cut down on the risk of you dying prematurely.

Energy Booster

Regular exercise improves muscle tone and strength, and also boosts endurance levels. It increases the delivery of vital oxygen to cells for conversion into energy and also helps the cardiovascular system to work more efficiently. When the heart and lungs work in tandem, our body gets more energy to work

Helps With Sleep

Regular physical activities not only help us to fall asleep faster but also deepen the sleep. Exercise that is done close to bed time may energize us and prolong the onset of sleep. Hence exercise before sleep should be avoided.

Exercise Is Fun

The key to good health is being active each day of your life. Exercise is seriously fun. One has to choose the exercise that makes us happy. All that is required is correct choice of the kind of exercise that is most interesting for oneself. Those who prefer outdoors can exercise in a park.

Those who prefer AC environment can do so in a gym or aerobics studio. To increase the fun, one can dance, do trekking, or play games rather than sitting idle. Exercise is also a great way to connect with friends and family.

Half an hour exercise/day ensures a healthier life. Doing some physical exercise is better than doing none. Those in sedentary job can take a break every 20 minutes. This also serves as an antidote to stress and keep postural strains and injuries at bay.

More intensive and longer workouts need to be incorporated every week. This can include jogging, power yoga, weight training etc.

CONCLUSION

Knowledge of importance of physical exercise in our daily life need for make it a regular habit and following it constantly can aid us to lead a healthier life. Small changes throughout the day, can make large differences in our life. Promoting physical exercise and blending it with our routine can make us happy and gives us a healthier life.

Acknowledgement

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REFERENCES

- Centers for Disease Control and Prevention. U.S. Obesity Trends. (2011). Retrieved from: <https://www.cdc.gov/obesity/data/adult.html>
- Centers for Disease Control and Prevention. (2010). Vital Signs: Adult Obesity. Retrieved from: <http://www.cdc.gov/vitalsigns/AdultObesity/>
- Arbor Ann, MI, 2015,, Prolonged TV Viewing Linked to Eight Leading Causes of Death in U.S.,*American Journal of Preventive Medicine*,49 (6).



INFLUENCE OF PILATES TRAINING ON FLEXIBILITY AND CORE STRENGTH AMONG KABADDI PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of Pilates training on flexibility and core strength among kabaddi players. To achieve the purpose of this study, 20 male kabaddi players are randomly selected as subjects from the RVSKVK Institute of Management, Tiruchirappalli, Tamilnadu, India. Their age ranged from 17 to 21 years. The selected participants were randomly divided into two groups such as Group 'A' underwent Pilates training (n=10) and Group 'B' acted as control group (n=10). Group 'A' underwent Pilates training for three alternative days and one session per week and each session lasted for an hour for six weeks. Control group was not exposed to any specific training but they were participated in regular activities. The data on flexibility and core strength were collected by administering by sit and reach and plank tests. The pre and post tests data were collected on selected criterion variables prior and immediately after the training programme. The pre and post-test scores were statistically examined by the dependent 't'-test and Analysis of Co-Variance (ANCOVA) for each and every selected variable separately. It was concluded that the Pilates training group had shown significantly improved in flexibility and core strength. However the control group had not shown any significant improvement on any of the selected variables such as flexibility and core strength.

KEYWORDS: Pilates Training And Kabaddi

INTRODUCTION

Pilates may sound intimidating, but it's an accessible way to build strength in core muscles for better posture, balance and flexibility. Pilates is a method of exercise that consists of low-impact flexibility and muscular strength and endurance movements. Pilates emphasizes use of the abdominals, lower back, hips and thighs. Pilates is named for its creator, Joseph Pilates, who developed the exercises in the early 1900s.

A Pilate's routine typically includes 25 to 50 repetitive strength training exercises. Pilates is similar to calisthenics, such as sit-ups and pushups. In fact, some people call Pilates the ultimate form of calisthenics. Pilates called his method "Contrology" (Pilates, 2015). The benefits of the Pilates training are, to improved core strength, stability, posture, balance and flexibility.

Statement of the problem

The purpose of the study was to find out the effect of Pilates training on flexibility and core strength among kabaddi players.

METHODOLOGY

The purpose of this study was to find out the effect of Pilates training on flexibility and core strength among kabaddi players. To achieve the purpose of the study twenty male kabaddi players were randomly selected from RVSKVK Institute of Management, Tiruchirappalli, Tamilnadu and their age ranged from 17 to 21 years. The researcher reviewed the available scientific journals, periodical, magazine, e-resources and research paper. Taking into consideration feasibility criteria, availability of the instrument and relevance of the variable of the present study the following dependent variables namely flexibility and core strength were selected. Similarly Pilates' training was chosen as independent variable. The flexibility and core strength were assessed by sit and reach and plank tests respectively.

This study was conducted to determine the possibility cause and effects of Pilates training on flexibility and core strength among kabaddi players. The subjects were divided into two equal group consists of 10 each and named as experimental group (Group-A) and control group (Group-B). Group-A (n=10) underwent Pilates training and Group B acted as control group. The control group was not given any special treatment and the experimental group was given Pilates training for three alternative days per week, for a period of six weeks. The related group research design was used in this study. The collected data from the two groups prior to and after the experimental treatments on flexibility and core strength were statistically analyzed by using the statistical technique of dependent 't' test and analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed as a level of confidence.

ANALYSIS OF THE DATA

The effect of Pilates training on flexibility and core strength were analyzed and presented below.

Test of Significance

This is the crucial portion of the thesis in arriving at the conclusion by examining the statistical hypothesis. The procedure of testing the hypothesis in accordance with the results obtained in relation to the level of confidence which was fixed at 0.05 levels, was considered necessary for this study.

Computation of 't'-test

The primary objective of the paired 't' ratio is to describe the differences between the initial and final scores. Thus the obtained results has been interpreted and presented below.

TABLE - I
THE PRE AND POST TEST SCORES ON SELECTED VARIABLES
OF PILATES TRAINING AND CONTROL GROUP

Groups	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	't' Ratio
Pilates training	Flexibility (CM)	21.34	27.85	6.51	6.38*
Control Group		20.34	20.89	0.55	0.87
Pilates training	Core Strength (Seconds)	138.12	164.23	26.11	11.31*
Control Group		128.37	132.64	4.27	1.35

* Significant at 0.05 level

In table-I the obtained 't' ratios of Pilates training are 6.38 and 11.31 for flexibility and core strength respectively. The obtained 't' ratios on the selected variables are found to be greater than the table value of 2.26 for 9 degrees of freedom. It is found to be significant. The result shows statistically significant and explains its effect positively.

In table-I also shows that the obtained 't' ratios 0.87 and 1.35 for body flexibility and core strength respectively. The obtained 't' ratios on the selected variables are found to be lesser than the table value of 2.26 for 9 degrees of freedom. It is found to be insignificant.

Computation of Analysis of Covariance

The descriptive measures and the results of analysis of covariance on the criterion measures were given in the following tables.

TABLE – IV
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE ON BODY
FLEXIBILITY AND CORE STRENGTH OF EXPERIMENTAL AND
CONTROL GROUPS

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Flexibility (Adjusted Post Mean)	27.29	20.81	BG	163.89	1	163.89	21.34*
			WG	130.56	17	7.68	
Core Strength (Adjusted Post Mean)	162.67	131.08	BG	272.04	1	272.04	18.27**
			WG	253.13	17	14.89	

* Significant at 0.05 level. Table value for df 1, 17 was 4.21

The above table indicates the adjusted mean value on body flexibility and core strength of experimental and control groups were 27.29 & 20.81 and 162.67 & 131.08 respectively. The obtained F-ratio of 21.34 and 18.27 was greater than the table value 4.21 for the degrees of freedom 1 and 17 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference exist among experimental and control groups on flexibility and core strength.

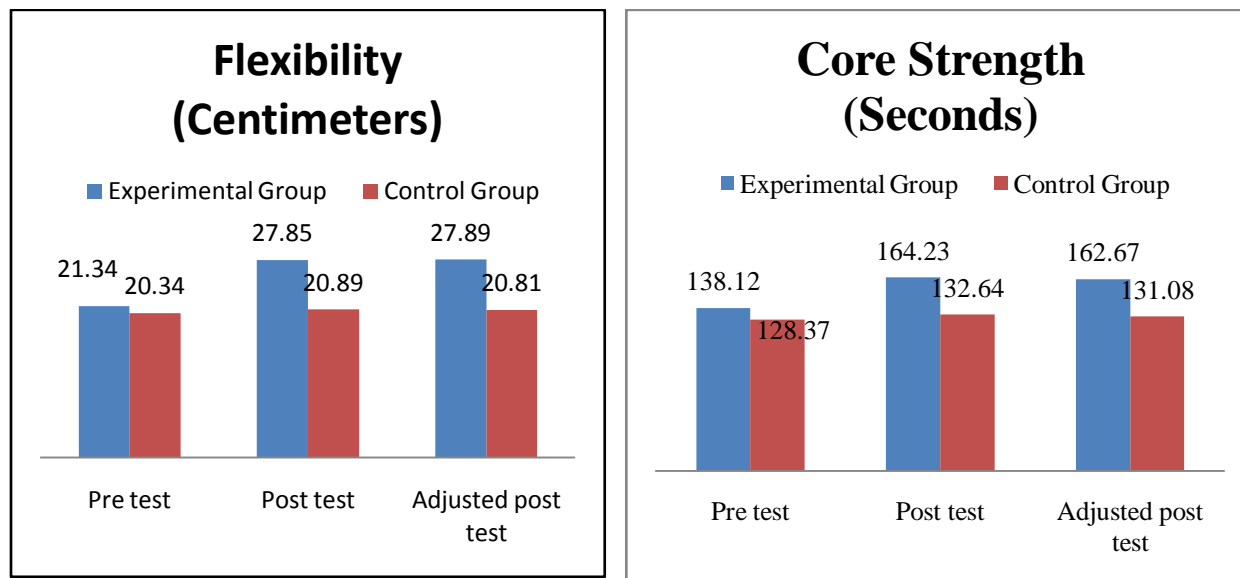


FIGURE-I: PRE TEST, POST TEST AND ADJUSTED POST TEST MEAN VALUES OF PILATES TRAINING AND CONTROL GROUPS ON FLEXIBILITY AND CORE STRENGTH.

DISCUSSION ON FINDINGS

The result of the study indicates that there was a significant improvement on flexibility and core strength due to the effect of Pilates training among kabaddi players when compared to control group.

It is inferred from the literature and from the result of the present study. That systematically designed training develops dependent variables are very importance for better performance in almost all sports and games. Hence it is concluded that systematically designed training may be given due recognition and implemented properly in the training programs of all the discipline in order to achieve maximum performance.

CONCLUSIONS

1. There was significant improvement on flexibility and core strength due to the effect of Pilates training among kabaddi players.
2. However the control group had not shown any significant improvement on any of the selected variables.

REFERENCES

“Pilates” retrieved from <http://www.mayoclinic.org/healthy-lifestyle/fitness/in-depth/pilates-for-beginners/art-20047673>, on 29th November, 2015.

Segal, N. A., Hein, J., & Basford, J. R. (2004). The effects of Pilates training on flexibility and body composition: an observational study. *Archives of physical medicine and rehabilitation*, 85(12), 1977-1981.

Herrington, L., & Davies, R. (2005). The influence of Pilates training on the ability to contract the transversus abdominis muscle in asymptomatic individuals. *Journal of bodywork and movement therapies*, 9(1), 52-57.

Rogers, K., & Gibson, A. L. (2009). Eight-week traditional mat Pilates training-program effects on adult fitness characteristics. *Research quarterly for exercise and sport*, 80(3), 569-574.

Kloubec, J. A. (2010). Pilates for improvement of muscle endurance, flexibility, balance, and posture. *The Journal of Strength & Conditioning Research*, 24(3), 661-667.



A STUDY ON AWARENESS OF PHYSICAL EDUCATION PROGRAMME BETWEEN GOVERNMENT AND PRIVATE HIGHER SECONDARY SCHOOL GIRLS

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ABSTRACT

Physical education plays a significant role in educating both mind and body. It contributes directly to development of physical competence and fitness and helps the students to make informed choices and understand the value of leading a physically active lifestyle. The benefits of physical education can affect both academic learning and physical activity patterns of students. The healthy, physically active student is more likely to be academically motivated, alert, and successful. In the preschool and primary years, active play may be positively related to motor abilities and cognitive development. As children grow older and enter adolescence, physical activity may enhance the development of a positive self-concept as well as the ability to pursue intellectual, social and emotional challenges. Throughout the school years, quality physical education can promote social, cooperative and problem solving competencies. A study was conducted to compare the awareness of physical education programme among higher secondary girls between private and government schools of Namakkal district, Tamilnadu. 200 subjects were randomly selected from government and private higher secondary school. The data were collected by questionnaire and the 't' ratio was employed for statistical computation. From the results, it was concluded that there was statistically no significant difference found at .05 level between private and government schools. Hence it was obviously understood that the school children need to be required to make aware and to know the importance of physical education programme at school levels. Quality physical education programs in our nation's schools are essential in developing motor skills, physical fitness and understanding of concepts that foster lifelong healthy lifestyles.

KEYWORDS: *Quality Physical Education, Physical Activity, Awareness And Importance*

INTRODUCTION

Physical education programme plays a significant role in educating both mind and body. It plays a potentially important role in enhancing overall health by creating positive attitudes toward exercise and by promoting health-related fitness programmes. However, this programme will have limited success if students are not motivated to participate actively in their physical education classes. It contributes directly to development of physical competence and fitness and helps the students to make informed choices and understand the value of leading a physically active lifestyle. The benefits of physical education can affect both academic learning and physical activity patterns of students. The healthy, physically active student is more likely to be academically motivated, alert, and successful.

In the preschool and primary years, active play may be positively related to motor abilities and cognitive development. As children grow older and enter adolescence, physical activity may enhance the development of a positive self-concept as well as the ability to pursue intellectual, social and emotional challenges. Throughout the school years, quality physical education can promote social, cooperative and problem solving competencies. +

Physical Benefits

Physical education is unique to the school curriculum as the only program that provides students with opportunities to learn motor skills, develop fitness and gain understanding about physical activity. Physical benefits gained from physical activity include: disease prevention, safety and injury avoidance, decreased morbidity and premature mortality, and increased mental health. The physical education program is the place where students learn about all of the benefits gained from being physically active as well as the skills and knowledge to incorporate safe, satisfying physical activity into their lives.

Cognitive Benefits

Children learn through a variety of modalities (e.g., visual, auditory, tactile, physical). Teaching academic concepts through the physical modality may nurture children's kinesthetic intelligence. Academic constructs have greater meaning for children when they are taught across the three realms of learning, including the cognitive, affective and psychomotor domains. Greater depth and relevance can be achieved when the subject matter constructs are related to each domain of learning. Research has demonstrated that children engaged in daily physical education show superior motor fitness, academic performance, and attitude towards school versus their counterparts who did not participate in daily physical education. Physical education learning experiences also offer a unique opportunity for problem solving, self-expression, socialization, and conflict resolution.

Affective Benefits

Physical competence builds self-esteem. Quality physical education programs enhance the development of both competence and confidence in performing motor skills. Attitudes, habits, and perceptions are critical prerequisites for persistent participation in physical activity. Appropriate levels of health-related fitness enhance feelings of well being and efficacy.

Elementary

The movement framework, (i.e., body, space, effort, and relationship) is also a part of the core content and is the basis for developing, expanding, and refining children's range of motor skills

and awareness. Quality instruction by physical education professionals is critical if children are to develop fundamental motor patterns (e.g. jump, throw, skip, hop, catch, and kick). Fitness at elementary grades is supported by a rich experience in many basic movement forms.

Middle School

The middle school student is ready to experience a wide variety of applications of fundamental movements, including traditional sports, adventure activities (e.g., rock climbing, ropes, kayak, skiing), and lifetime or leisure-oriented activities (e.g., roller-blading, biking, dance). It is during this period when students are capable of refining, combining and applying a variety of sport-related and lifetime skills. Students may explore after-school opportunities for specialized or/and competitive physical activity programs.

High School

High school students become increasingly more independent as their daily lives become more complex and diversified. High school students begin to make decisions and choices in taking increased responsibility for themselves. Quality high school physical education programs provide students conceptual and practical understanding of: 1) health-related physical fitness, and 2) how to maintain a health-related level of physical fitness. Physical education plays a vital part in helping high school students maintain and refine the skills and knowledge needed to select physical activities to use throughout their lives.

Elementary

Research suggests that young children learn through active engagement with the “stuff” of their world. Children in elementary school acquire knowledge through physical exploration of their environment. Physical education may provide children with learning experiences essential to the formation of mental schemes (i.e., mental patterns or systems that describe the ways people think about the world; building blocks of thinking). Children form more effective schemes by

physically interacting with their environment. Quality physical education programs facilitate exploration of movement in various contexts that enhance acquisition of knowledge.

Middle School

Middle school students are intensely curious, prefer active to passive learning, and definitely favor interaction with peers during learning activities. The early adolescent exhibits a strong willingness to learn things they consider useful. They enjoy using skills to solve real life problems. Quality physical education programs provide a medium through which middle school students can refine and expand upon their physical repertoire of skills. It has been shown that students miss fewer days of school because of illness and exhibit greater academic achievement because of the physical vitality gained in physical education.

High School

During the high school years students should be given more in-depth learning opportunities so they can understand the mechanical, physiological and social-psychological aspects of physical activity. High school students’ growing ability to compare and contrast, analyze, and synthesize information enables them to apply movement principles in new and meaningful ways. Students can more fully understand the role of physical activity in preventive health and analyze the pros and cons of various types of physical activity in lifelong health.

Elementary

Quality physical education programs can contribute to the development of self-esteem among children. Children who are more active may have greater social success and positive relations with peers. Children need many opportunities to experience personal feelings of success and achievement in physical activity settings. Explorations of various movement capabilities contribute to feelings of joy and accomplishment.

Middle School

Quality middle school physical education programs provide students unique opportunities for demonstrating leadership, socialization, and goal setting skills. Involvement in physical activity has shown a consistent relationship with mood, self-esteem, and other indices of psychological well-being in early adolescence. Student preferences become more specialized at this age and the preference influences students' motivation to continue in physical activities. A youngster's

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feelings of perceived competence also affects future participation and self-esteem. Despite the physiological changes that occur at this age, students are generally willing to work cooperatively toward common goals because the desire for peer group acceptance is strong. Risk taking is attractive and students accept the challenge of setting and achieving personal goals. Physical education programs have a unique opportunity to provide learning experiences that enhance middle school students' self-esteem.

High School

During this phase of development, students begin to select activities based more on personal interests. Other factors affecting students' choices of physical activity may be their level of health-related physical fitness, body type, geographical location, and socio-economic group or circle of peers. Physical education programs must continue to enhance students' fitness development and offer an array of activities from which students can select.

Attitudes, habits, and perceptions are critical prerequisites for persistent participation in physical activities. To help students achieve self-realization through physical activity, the physical education program can guide student choices and help them become self-directed in the selection of activities that are satisfying. The importance of commitment and dedication in achieving success may be emphasized in physical education. Physical activity habits and preferences are not static, but are continually in a state of flux throughout one's lifetime. High school is a time when students can establish habits and attitudes about the role physical activity will play in their lifetime. This is the time for students to explore their preferences related to physical activity and perhaps specialize based on abilities and interests.

Physical Activity Improves the Quality of Life

Regular physical activity improves functional status and limits disability during the middle and later adult years. Physical activity contributes to quality of life, psychological health, and the ability to meet physical work demands. Physical education can serve as a vehicle for helping students to develop the knowledge, attitudes, motor skills, behavioral skills, and confidence needed to adopt and maintain physically active lifestyles. The outcomes of a quality physical education program include the development of students' physical competence, health-related

fitness, self-esteem, and overall enjoyment of physical activity. These outcomes enable students to make informed decisions and choices about leading a physically active lifestyle.

In early years children derive pleasure from movement sensations and experience challenge and joy as they sense a growing competence in their movement ability. Evidence suggests that the level of participation, the degree of skill, and the number of activities mastered as a child directly influences the extent to which children will continue to participate in physical activity as an adult.

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In early adolescence participation in physical activity provides important opportunities for challenge, social interaction, group membership, as well as opportunities for continued personal growth in physical skill.

Participation for high school students continues to provide enjoyment and challenge as young people express preferences for activities that meet their specific interests. A comprehensive, well-implemented physical education program is an essential component to the total education of students. Physical education prepares students to maintain healthy, active lifestyles and engage in enjoyable, meaningful leisure-time pursuits.

2. PURPOSE OF THE STUDY

The purpose of the study was to study the awareness on physical education programme among government and private higher secondary school students and teachers.

3. HYPOTHESES

It is hypothesized that there would be significant difference on the awareness on physical education programme among government and private higher secondary school students and teachers.

4. MATERIALS AND METHODOLOGY

To achieve this purpose total of two hundred students and hundred teachers from each type of higher secondary school were randomly selected from Salem. The groups were as mentioned in the table 1.

TABLE-1

S.NO	GROUP	GROUP NAME		NO.OF SUBJECTS
1	Private Group	Students	Higher secondary school (boys =100, girls=100)	200
		Teachers	Higher secondary school	100
2	Government Group	Students	Higher secondary school (boys =100, girls=100)	200
		Teachers	Higher secondary school	100

5. STATISTICAL ANALYSIS

The collected data on resting heart rate, stress and anxiety before and after eight weeks of training were statistically analysed using dependent t-test, the univariate analysis of covariance

(one-way ANCOVA)) and Scheffe's test analysis as recommended by Clarke and Clarke (1972) and Best and Khan (1986). In all the cases 0.05 level was fixed as level of significance which was considered as appropriate.

6. RESULTS AND DISCUSSIONS

6.1 RESULTS ON RESTING HEART RATE

The analysis of dependent 't' test and ANCOVA on the data obtained for resting heart rate of the pre-test and post-test means of aerobic, yoga and physical exercise have been analyzed and presented in table 2 and table 3 respectively.

TABLE 2
THE SUMMARY OF MEAN AND DEPENDENT 'T'-TEST FOR THE PRE AND POST TESTS ON RESTING HEART RATE OF AEROBIC GROUP YOGA GROUP AND PHYSICAL GROUPS

	Aerobic Group	Yoga Group	Physical group
Pre test mean	69.60	69.30	68.80
Post test mean	67.70	68.40	69.10
T test	5.46*	3.25*	0.90
Table Value	2.26	2.26	2.26

*significant at 0.05 level. (Resting heart rate in counts)

(The table value required for 0.05 level of significance with df 9 is 2.26)

TABLE 3
ANALYSIS OF COVARIANCE ON RESTING HEART RATE OF AEROBIC GROUP YOGA GROUP AND PHYSICAL GROUPS

Adjusted post-test mean			Sources of Variance	Sum square	Df	Mean squares	F-ratio
Aerobic group	Non aerobic group	Physical group					
67.40	68.35	69.46	Between	20.689	2	10.345	11.045*
			Within	24.351	26	0.937	

*significant at 0.05 level of confidence (Resting heart rate in counts)

(The table value required for significance at 0.05 level with df 2 and 26 is 3.37)

Table 2 showed that the obtained 't' value of aerobic and yoga groups were greater than the table value. Hence it was revealed that there was a significant impact on resting heart rate due to the selected training. However, the physical group had no significant impact on resting heart rate as the obtained 't' value was less than the table value. From the table 3, it was understood that the f-ratio value was higher than table value. Hence, it was revealed that there was a significant difference among the adjusted post-test means on resting heart rate of aerobic, yoga and physical

groups. To find out which of the three paired means had a significant difference, the scheffe's post-hoc test was applied and the results are presented in Table 4.

TABLE 4
SCHEFFE'S TEST TO THE DIFFERENCES BETWEEN THE ADJUSTED
POST TEST PAIRED MEANS OF RESTING HEART RATE

Adjusted post test mean			Mean differences	Confidence interval
Yoga group	Aerobic group	Physical group		
67.40	68.35		0.95	1.17
67.40		69.46	2.06*	1.17
	68.35	69.46	1.11	1.17

*significant at 0.05 level of confidence

Table 4 showed that there was a significant difference among the selected yoga, aerobic and physical groups at 0.05 level of confidence. The mean values and adjusted post test means values of aerobic group, yoga group and physical groups on resting heart rate were graphically represented in the figure I and II respectively.

FIGURE-I
MEAN VALUES OF YOGA GROUP, AEROBIC GROUP AND
PHYSICAL GROUPS ON RESTING HEART RATE

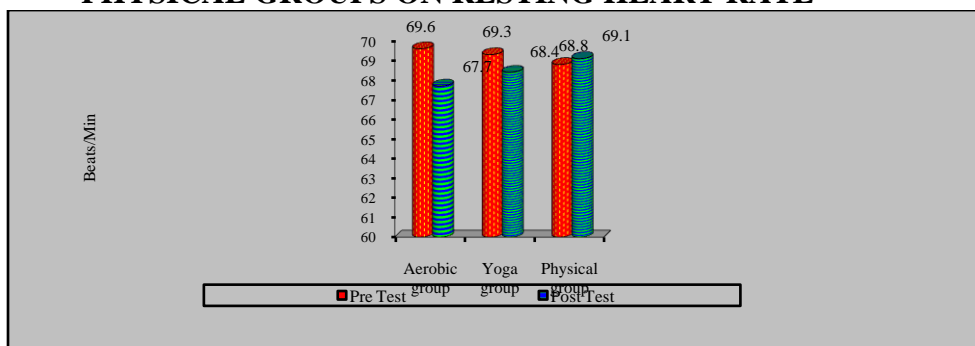
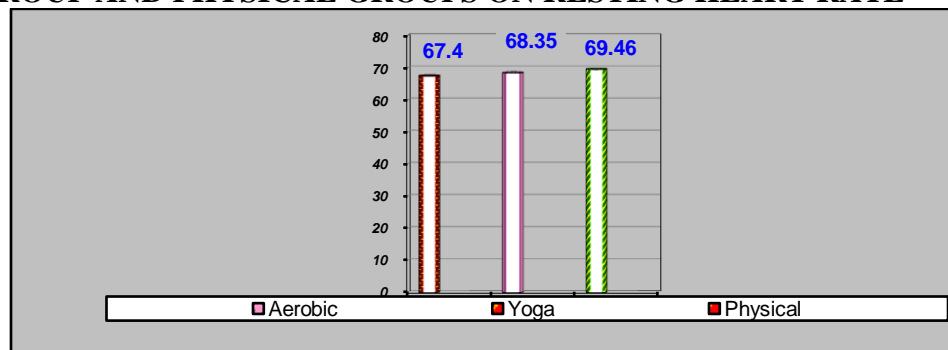


FIGURE-II
ADJUSTED POST-TEST MEAN VALUES OF YOGA GROUP, AEROBIC
GROUP AND PHYSICAL GROUPS ON RESTING HEART RATE



6.2 RESULTS ON STRESS

The analysis of dependent 't' test and ANCOVA on the data obtained for stress of the pre-test and post-test means of yoga, aerobic and physical groups have been analyzed and presented in Table 5 and Table 6 respectively.

CONCLUSIONS

1. The findings of this study showed that there was a significant improvement due to the selected training among the selected physical education students.
2. It was concluded that the aerobic group had significant impact on resting heart rate than yoga and physical groups due to the aerobic training among the selected women physical education students.
3. The findings of this study showed that there was a significant difference due to the selected training among the selected physical education students.
4. It was concluded that the yoga group had significantly reduced the level of stress and anxiety than aerobic and physical groups due to the selected yogic practices among the women physical education students.

A study was conducted to compare the awareness of physical education programme among higher secondary girls between private and government schools of Namakkal district, Tamilnadu. 200 subjects were randomly selected from government and private higher secondary school. The data were collected by questionnaire and the 't' ratio was employed for statistical computation. From the results, it was concluded that there was statistically no significant difference found at .05 level between private and government schools. Hence it was obviously understood that the school children need to be required to make aware and to know the importance of physical education programme at school levels. Quality physical education programs in our nation's schools are essential in developing motor skills, physical fitness and understanding of concepts that foster lifelong healthy lifestyles.

Though steps were taken from time to time to popularize the Scheme of Physical Education, yet much remains to be done in this field at the different stages of education. For the development of the satisfactory programme of physical education, Kothari Commission, 1964-66, suggested following principles:

- (i) The physical education programme should be planned for desirable outcomes keeping in the mind the interests and capacity of the participants.
- (ii) The traditional forms of play, indigenous games and physical activities of our country should receive due emphasis in the programme.
- (iii) The activities promoted should develop in each child a sense of personal work and pride.
- (iv) A sense of sharing responsibility in a spirit of democratic co-operation should grow from experience on play ground;
- (v) The programme offered should supplement other programmes of education and not duplicate them;
- (vi) The programme should be within the financial means;
- (vii) The programme should reach all rather than a selected few;

(viii) Special instruction and coaching should be providing for students with talent and special aptitude.

REFERENCES

Barton, G.V., Fordyce, K., & Kirby, K. (1999). The importance of the development of motor skills to children. *Teaching Elementary Physical Education*, 10(4), 9-11.

Calfas, K. & Taylor, W. (1994). The effects of physical activity on psychological variables in adolescents. *Pediatric Exercise Science*, 6, 302-314.

California Department of Education. (1987). Caught in the middle: Educational reform for young adolescents in California public schools.

Edith Cowan University (1991, August). *Youth Studies*, 10(3), 1-8.

Eggen, P. & Kauchak, D. (1999). *Educational psychology: A window on classrooms* (4th ed.). Upper Saddle River, NJ: Prentice-Hall, Inc.

Evans, J. & Roberts, G. (1987). Physical competence and the development of children's peer relationships. *Quest*, 39, 23-25.

Gruber, J.J. (1985). Physical activity and self-esteem development in children: A meta-analysis. *The Academy Papers*, 19, 30-48.

Hannaford, C. (1995). *Smart Moves*. Arlington, VA. Great Ocean.

Keays, J. & Allison, R. (1995). The effects of regular moderate to vigorous physical activity on student outcomes: A review. *Canadian Journal of Public Health*, 86, 62-66.

Mohnsen, B.S. (1997). *Teaching middle school physical education: A blueprint for developing an exemplary program*. Champaign, IL: Human Kinetics.

Pate, R.R., Trost, S.G., Dowda, M. Ott, A.E., Ward, D.S., Saunders, R., & Felton, G. (1999). Tracking of physical activity, physical inactivity, and health related physical fitness in rural youth. *Pediatric Exercise Science*, 11, 364-376.

Rink, J. E. (1998). *Teaching physical education for learning* (3rd ed.). New York: McGraw-Hill.

The National Center for Chronic disease Prevention and Health Promotion, Centers for Disease Control and Prevention . (1997). Guidelines for school and community programs to promote lifelong physical activity among young people. *Journal of School Health*, 76(6), 202-219.

The National Association for Sport and Physical Education (NASPE, 1995). *Moving into the future. National standards for physical education: A guide to content and assessment*. St. Louis: Mosby.

The National Association for Sport and Physical Education (NASPE, 1999). *Sport and physical education advocacy kit II (Speak II)*.

The U.S. Department of Health and Human Services (USDHHS). (1996). *Physical activity and health: A report of the Surgeon General*. Atlanta, GA: USDHHS, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.

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Early adolescence is a unique and fascinating period in human development. This period of great transition marks the end of childhood and the introduction into young adulthood. As children make the transformation into adults many developmental changes will occur. For instance, young teens experience a time of accelerated growth second only to infancy (Carnegie Council on Adolescent Development [CCAD], 1995), the roles of peers and family will take on new meanings (Schickedanz, Schickedanz, Forsyth, & Forsyth, 1998), and thinking patterns will be altered (Adams & Gullotta, 1989). With all of the developmental changes occurring, early adolescence is truly a fascinating period in the human life span.

Because early adolescence is a time of metamorphosis

Delimitations

The sample for this study was delimited to those students attending one specific middle school located in a suburban community in the southeastern region of the United States.

Limitations

Due to ethical considerations, this study was limited to those students who provide written assent and parental consent forms. Additionally, this study was limited by the responses given by the middle school students sampled. Although subjects were encouraged to respond honestly and genuinely to survey questions, response sincerity may vary.

Appendix A

Middle School Physical Education Critical Incident Survey

PART I

DIRECTIONS: Please put a check besides the response that best describes you. If you have any questions please feel free to ask. Please do not answer any question you feel uncomfortable answering.

1. Sex: ____M ____F
2. Grade Level: ____6 ____7 ____8
3. If physical education was optional next year, would you choose to take it?
____Yes
____No

4. For your age group, how would you rate your body build?

_____Over Size

_____Average

_____Under Size

5. For your age group, how would you rate your level of fitness?

_____In top condition

_____In good condition

_____In fair condition

_____In poor condition

6. For your age group, how would you rate your ability in sports?

_____Excellent at sports

_____Good at sports

_____Average at sports

_____Fair at sports

_____Poor at Sports

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PART II

DIRECTIONS: Below are two questions regarding your experience in middle school physical education. Please answer each question honestly and with as much detail as possible. Please note that your physical education teacher will not read your responses. If you have any questions please feel free to ask. You have as much time as you need to write. When you are done writing, please turn your survey over.

1. Please write the event or events that you have experienced during middle school physical education, that have caused you to like physical education.

102

2. Please write the event or events that you have experienced during middle school physical education, that have caused you to dislike physical education.

103

Appendix B

Preliminary Survey Instructions

Hello, my name is Mr. Krouscas and I am a student at Virginia Tech. I am here because I am working on a school project about middle school physical education. In just a few seconds you will be given a survey. (Hold up the MSPECIS.) Listed on the survey are questions regarding your middle school physical education experience. The survey contains two parts.

Part one is on the front page. The directions for part one are to put a check besides the response that best describes you. Part two begins on page two and continues to page three. Part two contains two questions. The first question on part two requests that you write the event or events that you have experienced during middle school physical education, that have caused you to like physical education. The second question on part two requests that you write the event or events that you have experienced during middle school physical education, that have caused you to dislike physical education.

If you noticed, both questions ask you to list events that happened to you during middle school physical education. When answering these questions please know that these events may include interactions you may have had with teachers, interactions you may have had with other students, situations that may have occurred in the locker room or specific activities you have done before or during class.

Please be as honest as possible, I will be the only person reading your responses. Your teacher will not have access to your responses. In fact that is why you were not asked to write your names on these surveys. If at any time you have any questions please raise your hand and I will come over to where you are located. When you have completed the survey please turn it over and wait patiently.

Worldwide Survey - Quality Physical Education Indicators and Basic Needs Model



© UNESCO / J. Mott - Everyday physical exercise in school in Hanoi, Viet Nam

UNESCO is working with the North Western Counties Physical Education Association (NWCPEA) in the launch of a Worldwide Survey on the situation of Physical Education * in schools. This initiative responds directly to a call from the States Member of the Intergovernmental Committee for Physical Education and Sport (CIGEPS). The survey will inform the development of:

International Indicators on Quality Physical Education (QPE);

International Indicators on Quality Physical Education Teacher Training (QPETT);

corresponding Basic Needs Models.

Previous Worldwide School Physical Education Surveys (Hardman & Marshall, 2000; and Hardman & Marshall, 2009) drew attention to a number of widespread concerns in physical education provision. Since this time levels of fitness among young people have continued to decline in contrast to rising levels of obesity amongst school children and high school drop-out rates from physical/sporting activity. These concerns persist with indications of further cut-backs in physical education curricula as a consequence of the global financial crisis.

To mitigate against this negative trend, it is imperative that the monitoring of developments in physical education across the world is maintained. Accordingly, UNESCO and the World Health Organization (WHO) have called for monitoring systems to be put into place to regularly review the situation of physical education in every country.

Purpose of the survey
The primary purpose of this Survey is to provide an overview of the situation of physical education in schools across the world. The evidence-based data will inform the development of benchmark indicators on Quality Physical Education (QPE) in schools and Quality Physical Education Teacher Training (QPETT) in provider institutions as well as a School Physical Education Basic Needs Model.

Structure of the survey
This part of the Survey comprises of a structured questionnaire, divided into seven key areas. Specifically, information will be sought on:

The general situation of physical education in schools (national level policy and practice-related issues in school physical education, legal status, responsible authority, curriculum time allocation);

The physical education curriculum (aims, themes, content activity areas, relevance and delivery quality issues, monitoring and quality assurance; existing QPE criteria; and gender and disability equity issues);

Resources (teaching personnel, facilities and equipment);

The physical education environment (school subject and physical education teacher status; and pathway links to physical education/sport activity in out-of-school settings);

Issues in provision (school physical education-related concerns or problems);

‘Best practice’ examples in school physical education;

Basic needs for physical education.

We invite you to participate in this Survey and make an important contribution in policy advocacy at international, regional and national levels.

[Download the questionnaire](#) [PDF, 129 KB]

The questionnaire is also available in [French](#), [Spanish](#), [Arabic](#), [Chinese](#) and [Russian](#).

How to return the questionnaire
The completed questionnaire has to be returned by 31 January 2012.

Please send the completed questionnaire to:

Prof. K. Hardman

NWCPEA

73 Old Road

Tintwistle,

Glossop

SK13 1JY

Derbyshire

United Kingdom

Contact

For any further details, please contact:

Ken Hardman, [ken.hardman\(at\)tiscali.co.uk](mailto:ken.hardman@tiscali.co.uk)

Chris Murphy, [c.murphy\(at\)shu.ac.uk](mailto:c.murphy@shu.ac.uk)

*The term physical education includes the terms “physical culture”, “movement”, “human motricity”, “school sport” etc., and refers to a structured period of directed physical activity in school curricular contexts.

<http://onlinelibrary.wiley.com/doi/10.1348/000709901158497/abstract>

Background. It is widely acknowledged that Physical Education (PE) can play a potentially important role in enhancing public health by creating positive attitudes toward exercise and by promoting health-related fitness programmes. However, these initiatives will have limited success if students are not motivated to participate actively in their PE lessons. Aim. A sequence of motivational processes, proposed by Vallerand (1997), was tested in this study. The sequence has the form 'social factors→psychological mediators→types of motivation→consequences'. Sample. Participants were 424 British students aged 14-16 years from Northwest England. Method. Questionnaires were used to measure cooperative learning, self-referenced improvement, and choice of tasks (social factors), perceived competence, autonomy, and relatedness (psychological mediators), intrinsic motivation, identification, introjection, external

regulation, and amotivation (types of motivation), and boredom, effort, and future intention to exercise (consequences). Results. A SEM analysis showed that perceived competence was the major psychological mediator. Intrinsic motivation was related to positive consequences, whereas external regulation and amotivation were predictors of negative consequences. A multisample analysis indicated that the model was largely invariant across gender. Conclusions. The findings underline the importance of perceived competence and intrinsic motivation in compulsory PE.

Sample Questionnaire

Physical Education Questionnaire

OCTOBER 10, 2011

in EDUCATION QUESTIONNAIRE

A physical education questionnaire is used to gather data about the role played by physical education in a school curriculum and how it helps children be health-conscious and achieve a wholesome personality. The questionnaire can deal with an exercise schedule, sports played by students and how they feel these help in making them a better student.

Sample Physical Education Questionnaire:

Name: _____

Address: _____

Phone Number: _____

Email ID: _____

Date of Birth: _____

Name of school or college: _____

1) How many students take part in your physical education class?

2) What areas do you cover in your physical education class?

a) Group or team games

b) Movement skills

c) Aquatic activities

d) Health projects

3) How many hours per week do students spend in your class?

4) Please select the type of sports from the following that are played in your school.

a) Soccer

b) Hockey

c) Football

d) Basketball

e) Swimming

f) Tennis

g) Gymnastics

h) Skating

i) Wrestling

j) Volleyball

k) Others

5) During a physical education class, please mention the time taken by the students to do the following.

a) Changing into physical education uniform

b) Doing warm-up exercises

c) Doing drills

d) Participating in sports

e) Showering and changing clothes

6) What are the physical, emotional and social benefits of a physical education class?

7) How do you create interest among the students to take part in physical education activities?

8) Does the school provide necessary resources for the gym?

9) Has your school won any inter-school sports championships? Give more details.



IMPACT OF SELECTED YOGIC PRACTICES AND AEROBIC DANCE ON HEALTH RELATED PHYSICAL FITNESS VARIABLES AMONG WOMEN STUDENTS

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Pachiyappa's College for Women,
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ABSTRACT

The purpose of the study was to find out the impact of selected yogic practices and Aerobic dance on health related physical fitness variables among college women students. To achieve the purpose of the study Seventy-five students were selected from Pachiyappas College for Women, Kanchipuram, Tamilnadu. The age of the subjects ranged from 18 to 22 years. The selected subjects were randomly divided into two experimental groups and one control group. Group I underwent Yogic practices in selected asanas and pranayama; Group II underwent Aerobic dance and Group III acted as Control Group for three alternate days in a week for a period of 12 weeks. The dependent variables selected for this study were Cardio vascular endurance, Muscular strength/endurance, Flexibility and Body composition. The dependent variables namely Cardio Vascular Endurance measured by Cooper's 12 min run/walk test, Flexibility measured by Sit and Reach Test, Muscular Strength/ Endurance measured by Bent Knee Sit ups and Body Composition measured by Skin fold caliper. The data were collected from each subject before and after the training period and statistically analyzed by using dependent „t” test and analysis of covariance (ANCOVA) for statistical significance was set at 0.05 level of confidence. It was found that Aerobic dance group was found to be better in improving cardio vascular endurance and muscular strength/endurance when compared to the yogic practices group. Yogic practices group was found to be better in improving flexibility when compared to the aerobic training group. Both yogic practices and aerobic dance groups were developed the body composition equally.

KEYWORDS: *Yogic Practices, Aerobic Dance, Muscular Endurance, Cardiovascular Endurance, Body Composition*

INTRODUCTION

The science of yoga works on physical, mental, emotional, psychic and spiritual aspects person. When imbalance is experienced at this level, the organs, muscles and nerves no longer function in harmony, rather they act in position to each other. Therefore, yoga aims at bringing the different bodily functions into perfect co-ordination so that they work for the good at the whole body. Yoga is also blissful contact with the supreme element, higher than the highest of the known elements, through the process of absorption or dissolution, the process called Laya. It is establishing ecstatic oneness between the finite and the infinite, between the microcosm and the macrocosm, between the inner being and the supreme being. Swami Rajarishi Muni (1999).

Health-related physical fitness is defined as fitness related to some aspect of health. This type of physical fitness is primarily influenced by an individual's exercise habits; thus, it is a dynamic state and may change. Physical characteristics that constitute health-related physical fitness include strength and endurance of skeletal muscles, joint flexibility, body composition, and cardiorespiratory endurance. All these attributes change in response to appropriate physical conditioning programs, and all are related to health.

METHODOLOGY

Seventy-five students were randomly selected from Pachiyappas College for Women, Kanchipuram, and Tamilnadu. The age of the subjects ranged from 18 to 22 years. The selected subjects were divided into two experimental groups and one control group by random. During the training period the experimental groups underwent their respective training program in addition to their regular program of the course of study. Group I underwent Yogic practices in selected asanas and pranayama; Group II underwent Aerobic dance and Group III acted as Control Group for three alternate days in a week for a period of 12 weeks. The dependent variables selected for this study were Cardio vascular endurance, Muscular strength/endurance, Flexibility and Body composition. The instrument used to measure Cardio Vascular Endurance by Cooper's 12 min run/walk test, Flexibility by Sit and Reach Test, Muscular Strength/Endurance by Bent Knee Sit ups and Body Composition by Skin fold caliper. The duration of training session in the six weeks was between 30 to 60 minutes approximately, including warming up and cooling down. Group III acted as control. They did not participate in any specific training on par with experimental group.

RESULTS

TABLE - I
SUMMARY OF MEAN AND DEPENDENT "T" TEST FOR THE PRE AND POST TEST ON
SELECTED VARIABLES OF EXPERIMENTAL AND CONTROL GROUPS

Variables	Mean	Yogic practices Group	Aerobic training Group	Control Group
Cardiovascular Endurance	Pre test Mean	450.56± 9.70	449.60± 6.91	442.80 ± 6.82
	Post test Mean	427.33 ± 7.53	403.83± 7.03	446.20 ± 7.31
	„t“ Test	10.23*	2.44*	1.03
Muscular Endurance	Pre test Mean	24.16 ± 1.65	24.08 ± 2.66	25.00 ± 3.24

	Post test Mean	26.64 \pm 2.13	28.12 \pm 2.61	24.96 \pm 3.44
	„t“ Test	6.957*	19.81*	0.125
Flexibility	Pre test Mean	25.76 \pm 1.92	25.20 \pm 2.75	25.72 \pm 3.19
	Post test Mean	29.72 \pm 2.64	27.40 \pm 3.11	25.76 \pm 3.14
	„t“ Test	10.23*	11.00*	0.137
Body Composition	Pre test Mean	26.28 \pm 0.51	26.31 \pm 0.61	26.59 \pm 1.17
	Post test Mean	24.70 \pm 0.16	24.32 \pm 0.30	26.52 \pm 1.14
	„t“ Test	13.50*	14.77*	1.23

*Significant at .05 level. The table value required for .05 level of significance with df 24 is 2.06.

The obtained “t” ratio value of experimental groups is higher than the table value and it is understood that both yogic practice and aerobic dance had significantly improved the performance of selected criterion variables. Since the obtained “t” ratio value of experimental groups are greater than the value. The analysis of covariance on the data obtained on selected criterion variables due to the both the practices have been analyses and presented in Table II.

TABLE –II
ANALYSIS OF COVARIANCE OF YOGIC PRACTICES, AEROBIC DANCE AND CONTROL GROUPS ON SELECTED VARIABLES

variable	source of vaiance	sum of squares	df	mean square	obtained F ratio
cardiovascular endurance	pre test	356.487	1	0.0	0.01*
	group	758.846	2	0.0	0.03*
	error	3725.513	71	0.0	
muscular endurance	pre test	401.356	1	0.0	0.01*
	group	198.048	2	0.0	0.03*
	error	158.004	71	0.0	
flexibility	pre test	505.728	1	0.0	0.01*
	group	192.750	2	0.0	0.03*
	error	129.872	71	0.0	
body composition	pre test	19.523	1	0.0	0.01*
	group	55.803	2	0.0	0.03*
	error	14.587	71	0.0	

*Significant at .05 level of confidence. (The table value required for significance at .05 level with df 1 & 71 and 2 & 71 are 3.98 and 3.13 respectively).

Table II shows that the obtained F-ratio value is higher than the table value 3.13 with df 2 and 71 required for significance at .05 level. Since the value of F-ratio is higher than the table value, it indicates that there is significant difference among the adjusted post-test means of yogic practices, aerobic dance and control groups. To find out which of the three paired means had a significant difference, the Scheffe’s post-hoc test was applied and the results are presented in Table III.

TABLE – III
SCHEFFE’S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST
PAIRED MEANS OF SELECTED CRITERION VARIABLES

Adjusted Post Mean values				Mean Differences	Confidential Interval
Variables	Yogic practices Group	Aerobic Dance Group	Control Group		
Cardio vascular endurance	425.91	448.51		20.72*	5.13
	425.91		405.19	22.6*	5.13
		448.51	405.19	43.32*	5.13
Muscular endurance	26.87	28.42		425.91*	1.06
	26.87		24.43	0*	0
		28.42	24.43	425.91*	0
Flexibility	29.52	27.76		425.91*	0.96
	29.52		25.60	0*	0
		27.76	25.60	425.91*	0
Body composition	24.58	24.38		425.910	0.32
	24.58		26.40	0*	0
		24.38	26.40	425.91*	0

*Significant at .05 level.

Table III shows that the adjusted post test means differences on selected criterion variables between the yogic practices and aerobic dance groups; The values are greater than the confidence interval value 5.13, which shows significant difference at .05 level of confidence.

CONCLUSION

There was significant difference among the yogic practices and aerobic dance groups in improving the selected dependent variables such as cardio vascular endurance, body composition, flexibility and muscular strength/endurance. Aerobic dance group was found to be better in improving cardio vascular endurance and muscular strength/endurance when compared to the yogic practices group.

Yogic practices group was found to be better in improving flexibility when compared to the aerobic dance group.

REFERENCES

Alves, Is Aerobic Dance Good for You, *Medical Journal*, Vol.18.No.2, P183-183, 2008.

BadrAljasir, Maggie Bryson, and Bandar Al-shehri, “Yoga Practice for the Management of Type II Diabetes Mellitus in Adults”, university of Ottawa, *science journal of University of Toronto*, Canada Received December 4, 2007; accepted April 4, 2008.

Boyle CA, Sayers SP, Jensen BE, Headley SA, Manos TM., “The Effects of Yoga Training and A Single Bout of Yoga on Delayed Onset Muscle Soreness in the Lower Extremity”, *Journal of Strength Conditioning Research*, 18(4), 723-9, 2004.

Donohue B, Miller A, Beisecker M, Houser D, Valdez R, Tiller S, Taymar T., “Effects of Brief Yoga Exercises and Motivational Preparatory Interventions in Distance Runners: Results of A Controlled Trial”, *Br J Sports Med*, 40(1), 60-3, 2006..

Mark B.Andersoon, *Journal of sports & exercises psychology*, vol.23,p.123, 2001.



EFFECT OF AEROBIC EXERCISE ON FLEXIBILITY AMONG COLLEGE WOMEN PLAYERS

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ABSTRACT

The purpose of the study was to find the effect of aerobic exercise on flexibility among college women players. Thirty female players were randomly selected from Saveetha Institutions, Chennai, Tamilnadu and their age ranged between 18 and 25 years. The selected players were divided into two equal groups consists of 15 each namely experimental group and control group. The experimental group underwent anaerobic exercise programme for eight weeks. The control group was not taking part in any training during the course of the study. Flexibility was assessed by sit & reach test method and unit of measurement is centimeters. Pre-test was taken before the training period and post- test was measured immediately after the eight weeks training period. The data was analyzed by applying by 't' ratio and the level of significance was set at 0.05. The results revealed that there was a significant difference found on the criterion variables. The difference found is due to aerobic exercise given to the experimental group on flexibility when compared to control group.

KEYWORDS: Aerobic Exercise And Flexibility.

INTRODUCTION

Sport as an activity offers an opportunity for self-knowledge, self-expression and fulfillment, personal achievement, skill acquisition and demonstration of ability, social interaction, enjoyment, good health and well-being. It promotes involvement, integration and responsibility in society and contributes to the development of society, especially when sports activities have been accepted as an integral part of the culture of every society in every nation.

Aerobic exercise refers to exercise that involves or improves oxygen consumption by the body. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy-generating process. "Aerobic" basically means living or working with oxygen. Aerobic endurance exercises are those in which large muscle groups are used in rhythmic repetitive fashion for prolonged periods of time. Aerobic exercise means the exercise where all body parts/muscles are supplied with enough oxygen with the increased heart rate. Aerobic exercises include brisk walking, jogging, swimming, cross country, skiing, hopping, and skipping. By doing aerobics, the whole body is used and major muscle groups including legs, trunk and arms get involved. In aerobic exercise the heart rate increases substantially, but never reaches its maximum level. The heart is always able to deliver sufficient oxygen-rich blood to muscles so that they can derive energy from fat and glycogen aerobically. Aerobic exercises build stamina for sports and it is the most important form of exercise for health, since it increases the efficiency of heart, circulation and muscles. Aerobic exercise is the keystone of fitness by doing aerobics it increases the capillary network in the body.

OBJECTIVE OF THE STUDY

The objective of this study was to find out the effect of aerobic exercise on flexibility for 8 weeks among college women players.

METHODOLOGY

For the present study the subjects were thirty women players were randomly selected from Saveetha Institutions, Chennai, Tamil Nadu and their age ranged from 18 to 25 years. The subjects were assigned to two equal groups of 15 players each and named as Group 'A' and Group 'B'. Group 'A' underwent an aerobic exercise group and Group 'B' underwent did not any special exercise programme. Flexibility was assessed by sit & reach test and unit measurement is centimeters. The data was collected before and after eight weeks of training period. The data was analyzed by applying by 't' ratio and the level of significance was set at 0.05.

RESULTS

TABLE SHOWS ANALYSIS OF T-RATIO FOR THE PRE-TEST AND POST-TEST OF CONTROL GROUP AND EXPERIMENTAL GROUP ON FLEXIBILITY

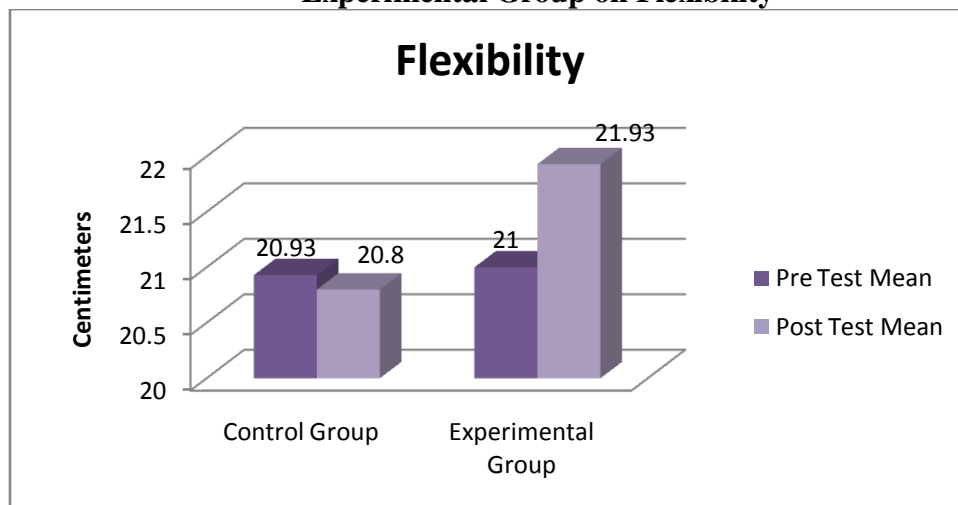
Variables	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Flexibility	Control	20.93	20.80	1.87	1.21	0.30	14	0.27
	Experimental	21.00	21.93	1.65	1.71	0.49	14	3.10*

**Significance at 0.05 level of confidence*

The Table shows that the mean values of pre-test and post-test of control group in flexibility were 20.93 and 20.80 respectively. The obtained 't' ratio was 0.27 since the obtained 't' ratio

was less than the required table value of 2.15 for the significant at 0.05 level of with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups in flexibility were 21.00 and 20.93 respectively. The obtained 't' ratio was 3.10 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level of with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in flexibility. It may be concluded the result of the study that experimental group improved in flexibility due to eight weeks of aerobic exercise.

Bar Diagram Shows the Pre and Post Tests Mean Values of Control Group and Experimental Group on Flexibility



DISCUSSION ON FINDINGS

The goal of the investigation is to find whether there is any effect on those selected variables in the effect of aerobic exercise and further to find improvement on training group. The obtained 't' ratio showed that there was significant difference between experimental group and control group in performance of flexibility. It indicates that experimental group significantly improved the variables better as compared to control group. This may be due to the experimental group under gone a systematic progressive training and the control group have not take part in any formal training in the period of eight weeks.

CONCLUSIONS

1. There was a significant difference between experimental and control group on flexibility after the training period.
2. There was a significant improvement in on flexibility. However the improvement was in favor of experimental group due to eight weeks of aerobic exercise programme.

REFERENCES

Arnett SW, et.al, "Aerobic reserve and physical functional performance in older adults", Age Ageing. 2008 Jul;37(4):384-9.

Jason L Talanian et.al, "Two weeks of high-Intensity Interval Training (HIIT) on health related physical fitness components of middle aged women. *Journal of Sports Medicine*; 44:i19.

Kin-Isler A, and Kosar SN "Effect of step aerobics exercise on anaerobic performance of men and women", **Journal of Strength and Conditioning**, 2006 May;20(2): 366-71

Woolf-May, K., et.al., "The effect of two different 18 week walking programmes on aerobic fitness, selected blood lipids and factor XIIa". **J.Sports Sci.**, 16:8, Nov, 1998.p.123.



EFFECTS OF PERIODIZED AEROBIC TRAINING, PERIODIZED RESISTANCE TRAINING AND PERIODIZED CONCURRENT AEROBIC AND RESISTANCE TRAINING ON SELECTED HAEMATOLOGICAL VARIABLES OF PRE-ADOLESCENT GIRLS

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ABSTRACT

Now a days, children become the owners of very deadly diseases namely diabetics and hyper tension in the very early stages rather than they get these in their later stages. Having the facts in the mind, needs girls during the year pre adolescence age need to undergo physical training with the aim to have the fitness they want at that stage. Generally physical fitness can be achieved by a scientific and systematic usage of the training means. Training means are various physical exercises and other objects, methods and procedures which are used for the improvement, maintenance and to gain the recovery of performance capacity and performance readiness. Although selecting the proper individual activities is important for combining these activities in a complementary fashion so that the result is an optimal overall training program which is crucial. Thus the present study was titled as the effect of per iodized aerobic training, per iodized resistance training and per iodized concurrent aerobic and resistance training individually on selected hematological variables of pre adolescent girls.

KEYWORD: Pre Adolescence, Per Iodization, Aerobic Training, Resistance Training, Concurrent Training, Hematology

1. INTRODUCTION

During the middle childhood, children may become more concerned about their physical appearance. Girls especially may become convenient that they are overweight and may become voracious eaters. During the middle childhood, children's muscle strength, motor skills, and stamina increases. Children acquire the motor skills, necessary to perform complex movements allowing them to participate in a variety of physical activities. Periodization is a method for structuring training programs using cycles of stimulating loads, maintenance loads, detraining loads and rest to elicit improvements in fitness and performance. It allows for planned variation in training program, while maintaining a coherent structure. It results in increases recovery and recuperation potential and shows measurable progress in strength gains. Having the facts in the mind, needs girls during the year pre adolescence age need to undergo physical training with the aim to have the fitness they want at that stage.

2. METHODOLOGY:

The purpose of the study was to find out the effect of Periodized Aerobic Training(PAT), Periodized Resistance Training (PRT) and Periodized Concurrent Aerobic and Resistance Training (PCART) on selected haematological variables of pre – adolescent girls.

2.1 SELECTION OF SUBJECTS:

60 pre-puberty girls studying in VI to VII standard from reputed school have selected as subjects for the present study and they were divided into four groups randomly.

2.2 TRAINING PROGRAMME

Each group was consisting of fifteen subjects. Group I underwent Periodized Aerobic Training (PAT), Group II underwent Periodized Resistance Training (PRT) Group III underwent Periodized Concurrent Aerobic and Resistance Training (PCART) group and Group IV acted as control group. The periodized aerobic training (group -I), the periodized resistance training (group – II) and the periodized concurrent aerobic and resistance training (group – III) underwent their respective training programmes for five days a week for twelve weeks, whereas the subjects of the control group (group IV) did not undergo any special training programme apart from their regular physical education programme of the curriculum.

2.3 SELECTION FOR VARIABLES:

TABLE - I

Criterion Variables	Unit of Measurement
Haemoglobin	Grams %
Red blood cells	Million cells/ Cumm
White blood cells	Cells/ Cumm

3. STATISTICAL ANALYSIS OF DATA

Table –II PERIODIZED AEROBIC TRAINING (GROUP – I)

Haematological variables	Pre test	Post test	Mean difference	DM	't' ratio
Haemoglobin (In gms %)	10.72	11.52	0.80	0.12	6.40*
White blood cells	7860.00	9226.67	1366.67	0.90	7.16*

(In million cells / cumm)					
Red blood cells (In cells / cumm)	3.80	5.27	1.47	0.08	19.10*

Significant at 0.05 level (2.14).

Table - III
PERIODIZED RESISTANCE TRAINING (PRT, GROUP-II)

Haematological variables	Pre test	Post test	Mean difference	DM	't' ratio
Haemoglobin (In gms %)	10.82	12.34	1.52	0.11	13.45*
White blood cells (In million cells / cumm)	7653.33	8613.33	960	110.32	8.70*
Red blood cells (In cells / cumm)	3.84	5.28	1.44	0.07	9.41*

- Significant at 0.05 level (2.14).

Table - IV
PERIODIZED CONCURRENT AEROBIC AND RESISTANCE (PCART, GROUP-III)

Haematological variables	Pre test	Post test	Mean difference	DM	't' ratio
Haemoglobin (In gms %)	10.76	12.36	1.60	0.09	17.48*
White blood cells (In million cells / cumm)	7773.33	9200.00	1426.67	149.11	9.57*
Red blood cells (In cells / cumm)	3.78	5.55	1.77	0.11	15.72*

- Significant at 0.05 level (2.14)

Table – V CONTROL GROUP (GROUP-IV)

Haematological variables	Pre test	Post test	Mean difference	DM	't' ratio
Haemoglobin (In gms %)	10.20	10.39	0.19	0.09	2.08
White blood cells (In million cells / cumm)	7326.67	7333.33	6.67	11.82	0.56

Red blood cells (In cells / cumm)	3.50	3.81	0.31	0.16	1.92
---	------	------	------	------	------

- Significant at 0.05 level (2.14).

Graphical representation of pre-test and post-test means of PAT, PRT, PCART and control groups on haemoglobin, white blood cells and red blood cells are presented in figure 3.1 to 3.3

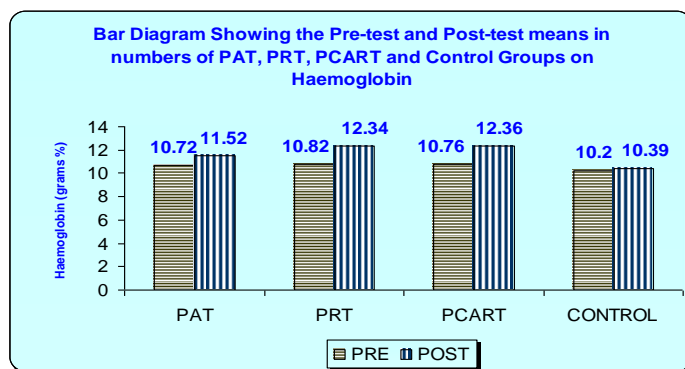


Figure 3.1

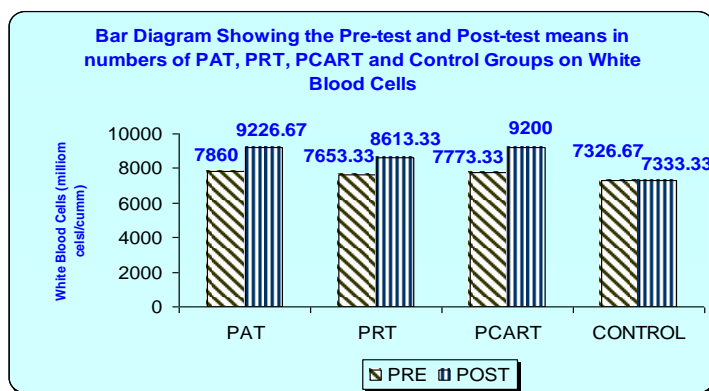


Figure 3.2

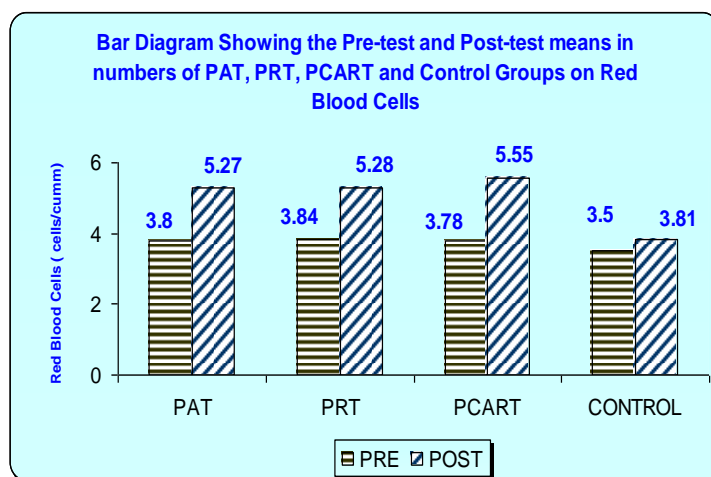


Figure 3.3

TABLE - VI
ANALYSIS OF VARIANCE ON PRE-TEST MEANS AMONG THE TRAINING GROUPS

Variables	Source	Sum of Squares	Degree of Freedom	Mean Square	F-ratio
Haemoglobin	Between Sets	3.69	3	1.22	1.23
	Within Sets	55.64	56	0.99	
White Blood Cells	Between Sets	245733.33	3	819111.11	0.89
	Within Sets	51412000.00	56	918071.43	
Red Blood Cells	Between Sets	1.09	3	0.36	2.24
	Within Sets	9.04	56	0.16	

* Significant at 0.05 level (2.48)

TABLE - VII
ANALYSIS OF VARIANCE ON POST-TEST MEANS AMONG THE TRAINING GROUPS

Variables	Source	Sum of Squares	Degree of Freedom	Mean Square	F-ratio
Haemoglobin	Between Sets	38.65	3	12.88	14.75*
	Within Sets	58.91	56	0.87	
White Blood Cells	Between Sets	35357333.33	3	11785777.78	12.67*
	Within Sets	52100000.00	56	930357.14	
Red Blood Cells	Between Sets	28.10	3	9.37	50.66*
	Within Sets	10.46	56	0.187	

* Significant at 0.05 level (2.77)

TABLE - VIII
ANALYSIS OF COVARIANCE ON ADJUSTED POST-TEST MEANS AMONG THE TRAINING GROUPS

Variables	Source	Sum of Squares	Degree of Freedom	Mean Square	F-ratio
Haemoglobin	Between Sets	20.95	3	6.98	46.05*
	Within Sets	8.34	55	0.15	
White Blood Cells	Between Sets	20337153.57	3	6779051.19	26.78*
	Within Sets	13924725.67	55	253176.83	
Red Blood Cells	Between Sets	20.86	3	6.95	46.80*
	Within Sets	8.17	55	0.49	

• Significant at 0.05 level (2.48)

TABLE –IX
RESULTS OF SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE
ADJUSTED MEANS ON HAEMOGLOBIN RESULTS OF POST-HOC TEST

Periodized Aerobic Training	Periodized Resistance Training	Periodized Concurrent Aerobic and Resistance Test	Control Group	Mean Value	'F' ratio	Critical value
11.44	12.17	---	---	0.73	26.69	8.28
11.44	---	12.24	---	0.80	32.11	8.28
11.44	---	---	10.76	0.68	23.05	8.28
---	12.17	12.24	---	0.07	5.12	8.28
---	12.17	---	10.76	1.41	99.33	8.28
---	---	12.24	10.76	1.48	109.57	8.28

TABLE – X
RESULTS OF SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE
ADJUSTED MEANS ON WHITE BLOOD CELLS

Periodized Aerobic Training	Periodized Resistance Training	Periodized Concurrent Aerobic and Resistance Test	Control Group	Mean Value	'F' ratio	Critical value
9048.58	8613.33	---	---	435.25	5.61	8.28
9048.58	---	9096.66	---	48.08	0.07	8.28
9048.58	---	---	7333.33	1715.25	87.15	8.28
---	8613.33	9096.66	---	483.33	6.92	8.28
---	8613.33	---	7333.33	1280	48.54	8.28

TABLE – XI
RESULTS OF SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE
ADJUSTED MEANS ON RED BLOOD CELLS

Periodized Aerobic Training	Periodized Resistance Training	Periodized Concurrent Aerobic and Resistance Test	Control Group	Mean Value	'F' ratio	Critical value
5.24	5.22	---	---	0.01	0.01	8.28
5.24	---	5.52	---	0.28	4.05	8.28
5.24	---	---	3.92	1.31	103.41	8.28

---	5.22	5.52	---	0.30	4.45	8.28
---	5.22	---	3.92	1.30	101.47	8.28

Graphical representation of adjusted post test means of PAT, PRT, PCART and control groups on haemoglobin, white blood cells and red blood cells are presented in figure 4.4 to 4.23

Figure – 4.4

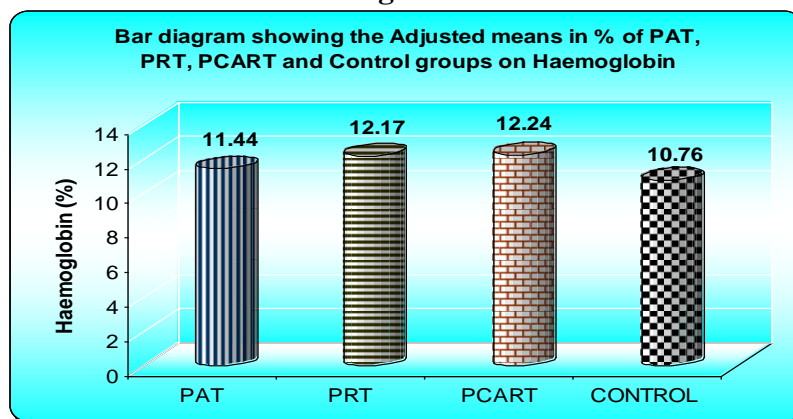


Figure – 4.5

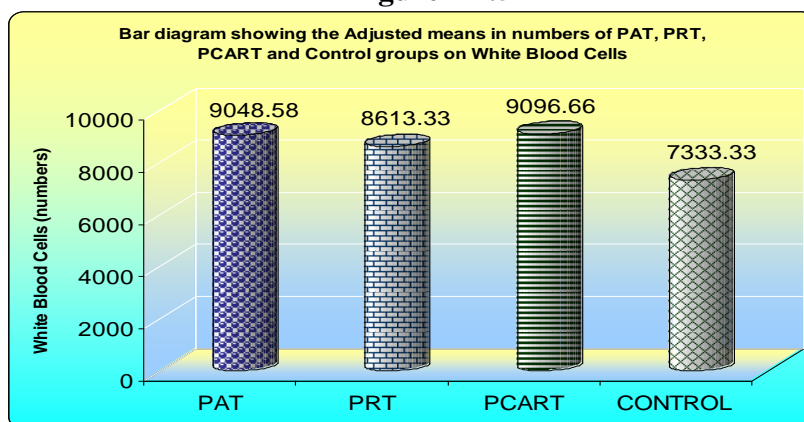
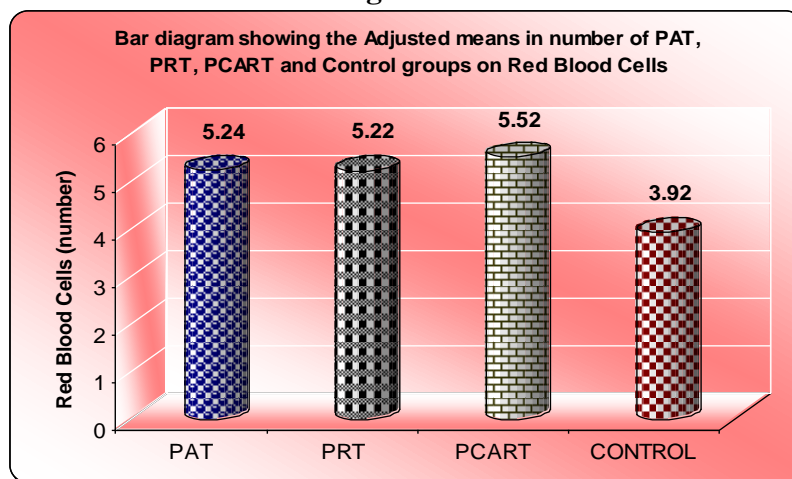


Figure – 4.6



DISCUSSION ON FINDINGS

Periodized aerobic resistance periodized resistance training and periodized concurrent aerobic and resistance training produced a significant improvement in the development of haematological variables. The periodized resistance training significantly effective in haemoglobin as compared to periodized aerobic training. The periodized concurrent aerobic and resistance training and periodized resistance training produced a similar effect in the development of haemoglobin, white blood cells and red blood cells.

CONCLUSIONS

1. For pre adolescence the training programme was effective in developing haematological variables.
2. Since the age group is pre adolescent the haemoglobin, WBC and RBC results shown after training there is a significant improvements.
3. The results of the group which underwent periodized aerobic training and periodic resistance training shown significant improvement.
4. The results of the group which underwent concurrent periodized aerobic training and periodic resistance training shown more significant improvement when comparing to the other groups.

REFERENCES

1. Guyton, A.C and Hall J.E. (1996), Textbook of Medical physiology, Philadelphia, Pennsylvania, W.B. Saunders Company.
2. Khanna G.L., Majumdar.P., Saha.M, and Mandal (2002), Physiological Profile of 10 –16 year talented children, Physiology of Sport and exercise, Kolkata, New Central Book Agency,P- 18
3. Kraemer W.J. and Keijo Hakkinen (2002), Hand Book of Sport Medicine and Science strength training for sport, USA Blackwell science Ltd., P- 96.
4. Kraemer W.J., and Fleck S.J., (1993) Strength training for young Athletes, Champaign I L , Human kinetics
5. Robergs A Robert and Roberts O scott (1997), Exercise physiology, Exercise performance and clinical applications, St.Louis, Baltimore mosby mirror publishers, P- 773 – 775.
7. Stone William J, and kroll William (1988) sport conditioning and weight training, Dubuque, IOWA, William C. Brown publishers, P-160.
8. Stone William J (1990) Fitness for you, New york, St Paul, West Publishing Company, p- 165.
9. Tanner J.MC (1984) Graoth at adolescence oxford blackwell publication Ltd., 1962 in G.A.Brooks and Fahey T.D., Exercise Physiology Human Bioenergetics and its application, New york, Macmillan 667.
10. Williams H.Melvin (1990), Fitness and Wellness U.S.A, Dubuque, Iowa William C. Brown publishers, P.30



IMPACT OF AEROBIC DANCE ON BODY FAT PERCENTAGE AND BODY WEIGHT OF SCHOOL BOYS

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ABSTRACT

The purpose of the research was to study the impact of aerobic dance on body fat percentage and body weight of school boys. In order to achieve these purpose 60 school boys were selected from TAT kalanilayam middle school, periyanaickenpalayam, Coimbatore. The 60 subjects were randomly selected and divided into two equal groups of 30 subjects each. The group I was called as experimental group and group II was called as control group. The age groups of the subjects were between 11 and 14 years old. In this study, aerobics dance training was given to the experimental group for a period of 8 weeks. The selected criterion variables namely body fat percentage and body weights were measured through body fat scale. The pretests were taken from the subjects on the selected criterion variables before administrating the training to the subjects. At the end of the 8 weeks of the training period post tests on the selected criterion variables were taken. The level of confidence was fixed at 0.05 level of confidence. And the significant differences between the means of pre and posttests of experimental and control groups were found out by paired “t” test. The analysis of the data revealed that there was a significant improvement on the selected variables namely body fat percentage and body weight of school boys by aerobic dance.

KEYWORDS: Body Fat Percentage, Body Weight And Body Fat Scale.

INTRODUCTION

Aerobic dance has become an extremely popular form of exercise. Over the past decade, the nature of this activity has evolved in several directions. For e.g. a destination is now made between is not made between “high impact aerobics”, involving repetitive jumping on one or both feet, and “slow-impact aerobics” in which one foot remains on the ground at all times. Some aerobic dance activities incorporate the use of hand held weights or weighted wrist and ankle bands to provide increased resistance.

Aerobic dance exercise is currently one of the most commonly practiced adult fitness activities. The majority of the research pertaining to this form of exercise supports its application as a valid cardiovascular training alternative, especially for adult females if performed according to the American College of Sports Medicine (ACSM) guidelines. If however, the participant is interested in modifying body composition, training frequency, duration, or efforts toward caloric restriction may need to be increased or altered beyond those employed in the aerobic dance training investigations. The amount of energy expended during a bout of aerobic dance can vary dramatically according to the intensity of the exercise. ‘Low intensity’ dance exercise is usually characterized by less large muscle activity and/or less low extremity impact, and music of slower tempo. Dance exercise representative of this variety requires a cost of approximately 4 to 5 kcal/minute. Several trials, however, have shown that vigorous ‘high intensity’ aerobic dance which entails using the large muscle groups can require 10 to 11 kcal/minute. The associated training outcomes could be affected by such differences in dance exercise intensity and style. Group aerobic has grown in popularity and most of the facilities provide classes in high-impact and low-impact aerobics.

The term high-impact refers to movements that have an unsupported or air borne phase examples include ‘running’ ‘jogging’ jumping sacks and variations of these moves. It may be easier to achieve higher intensities of exercise using high impact movements, however, because of the unsupported phase, the impact force on the joints of the body are greater than the forces resulting from low impact activities (i.e. walking, low-impact aerobics). This is important to remember when suggesting activities for noise, overweight individuals, and these with a history of bone or joint problems.

Low-impact movements are those in which one foot is in contact with the ground at all times, there is no airborne or unsupported phase to the movement. Low-impact movements reduce the impact forces and these may be appropriate for a greater proportion of the population than high impact movements. Low-impact activities such as low-impact aerobics significantly high intensities to satisfy the more highly fit participants, and integration of high and low impact activities within a class allows subjects with a variety of fitness levels to participate in the same class.

METHODOLOGY

To achieve the purpose of the present study sixty school boys studying in TATkalanilayam middle school, Sri Ramakrishna Mission Vidyalaya, periyanaickenpalayam, Coimbatore was randomly selected as subjects and their ages were ranged from 11 to 14 years. The subjects who were all selected for the study, leading their regular routine life. The subjects were divided into two equal groups namely experimental and control groups. Group 1 consist of 30 subjects called as the experimental group and group 2 consist of 30 subjects called as the control group. In this study, aerobics dance training was given to the experimental group for a period of 8 weeks. The

selected criterion variables namely body fat percentage and body weight were measured through body fat scale. The pretests were taken from the subjects on the selected criterion variables before administrating the training to the subjects. Experimental Group was given 8 weeks (Duration - 8 weeks, Session - 3 days / week, Duration of one session - One hour) of aerobic dance training and the control group was not given any specific training. At the end of the 8 weeks of the training period post testson the selected criterion variables were taken. The level of confidence was fixed at 0.05 level of confidence. And the significant differences between the means of pre and posttests of experimental and control groups were found out by paired “t” test.

RESULTS OF THE STUDY

TABLE I
COMPUTATION OF “t” RATIO BETWEEN THE PRE AND POST TESTS ON BODY FAT PERCENTAGE OF EXPERIMENTAL AND CONTROL GROUPS

<i>Group</i>	<i>Test</i>	<i>M</i>	<i>SD</i>	<i>σDM</i>	<i>DM</i>	<i>t-ratio</i>	<i>‘p’ Value</i>
<i>Experimental</i>	<i>Pre</i>	14.14	7.16	0.12	0.31	2.59*	0.015
	<i>Post</i>	13.83	6.79				
<i>Control</i>	<i>Pre</i>	11.41	3.07	0.16	0.06	0.40	0.68
	<i>Post</i>	11.48	3.22				

*significance at 0.05 level

Results of Body Fat Percentage

It observes from the table I that the experimental group’s mean value for pre test was 14.14 ± 7.16 and post test was 13.83 ± 6.79 . The standard error of the difference between the means was 0.12. The mean difference for the pre test and post test was 0.31. It revealed that the obtained t-ratio was 2.59. Since the ‘p’ value 0.015 was lesser than the 0.05, there was a significant reduction on body fat percentage of experiment group at 0.05 level of confidence.

It may be seen that the control group’s mean value for pre test was 11.41 ± 3.07 and post test was 11.48 ± 3.22 . The standard error of the difference between the means was 0.16. The mean difference for the pre test and post test was 0.06. It revealed that the obtained t-ratio was 0.405. Since the ‘p’ value 0.688 was greater than the 0.05, there was no significant improvement on body fat percentage of control group at 0.05 level of confidence.

FIGURE I
FIGURE SHOWING THE MEAN DIFFERENCE OF PRE AND POST TESTS
SCORES ON BODY FAT PERCENTAGE OF EXPERIMENTAL AND
CONTROL GROUPS

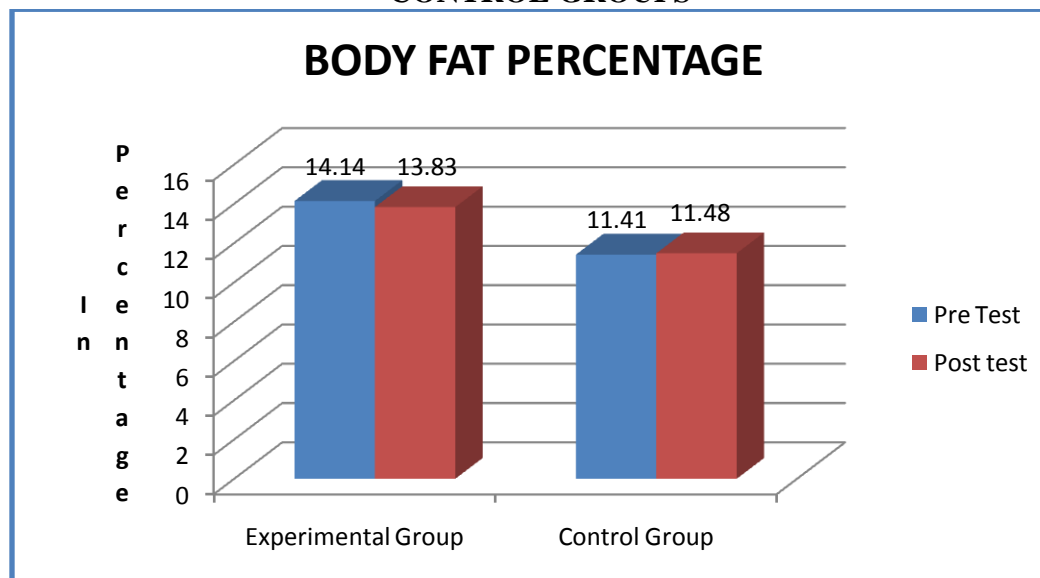


TABLE II
COMPUTATION OF “t” RATIO BETWEEN THE PRE AND POST TESTS ON BODY
WEIGHT OF EXPERIMENTAL AND CONTROL GROUPS

Group	Test	M	SD	σDM	DM	t-ratio	p'Value
Experimental	Pre	32.99	8.30	0.16	0.79	4.98*	0.001
	Post	33.78	8.35				
Control	Pre	29.66	3.64	0.25	0.29	1.13	0.268
	Post	29.95	3.93				

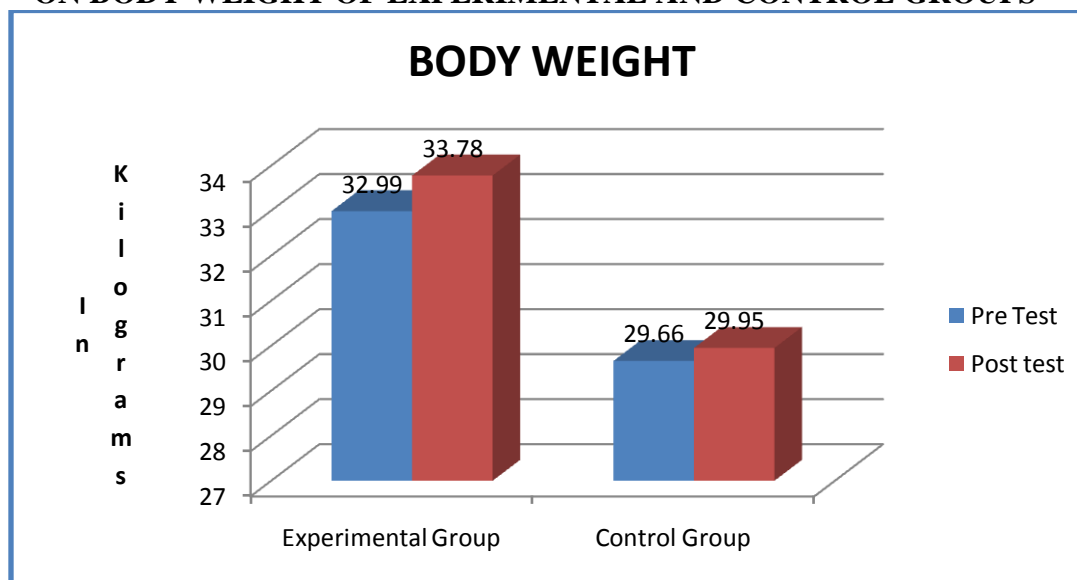
*significance at 0.05 level

Results of Body Weight

It observes from the table II that the experimental group's mean value for pre test was 32.99 ± 8.30 and post test was 33.78 ± 8.35 . The standard error of the difference between the means was 0.16. The mean difference for the pre test and post test was 0.79. It revealed that the obtained t-ratio was 4.98. Since the 'p' value 0.001 was lesser than the 0.05, there was a significant improvement on body weight of experimental group at 0.05 level of confidence.

It may be seen that the control group's mean value for pre test was 29.66 ± 3.64 and post test was 29.95 ± 3.93 . The standard error of the difference between the means was 0.25. The mean difference for the pre test and post test was 0.29. It revealed that the obtained t-ratio was 1.13. Since the 'p' value 0.268 was greater than the 0.05, there was no significant improvement on body weight of control group at 0.05 level of confidence.

FIGURE II
FIGURE SHOWING THE MEAN DIFFERENCE OF PRE AND POST TESTS SCORES
ON BODY WEIGHT OF EXPERIMENTAL AND CONTROL GROUPS



DISCUSSION OF FINDINGS

The analysis of body fat percentage and body weight data revealed that after the experimental period, the experimental group had significantly improved the body fat percentage and body weight when compared with its post test. Here the obtained 't' ratio value was significant ($p < 0.05$) at 0.05 level of confidence, hence the experimental group had significant improvement on body fat percentage and body weight whereas the control group showed insignificant improvement on body fat percentage and body weight. So the improvement on body fat percentage and body weight was due to the aerobic dance training alone. The results of the study were in consonance with the research done by Deborah Dowdy, K.J. (1984) Evrimcakmakci, (2011) and JelicaStojanovic, (2013).

CONCLUSIONS

It was concluded that there were significant improvement on the selected dependent variables namely body fat percentage and body weight by the application of aerobic dance training.

REFERENCES

- Deborah b.dowdy, K.J. (1984). . Effects of Aerobic Dance on Physical Work Capacity, Cardiovascular Function and Body Composition of Middle-Aged Women. journal-research quarterlyb for exercise and sports , 227-233.
- Evrin cakmakci, F.A. (2011). The effects of aerobic dance exercise on body composition changes associated with weight change in sedentary women. physical education and sports science , 298-304.
- Jelica stojanovic, G.S. (2013). Effects of a Twelve-Week Aerobic Dance Exercises on Body Compositions Parameters in Young Women. journal of conditioning research , 1243-1250.



A STUDY OF ANXIETY LEVEL AMONG MEN AND WOMEN BASKETBALL PLAYERS

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ABSTRACT

Anxiety as an emotion that is difficult to define and even more difficult to reliably detect in performance but the importance of anxiety as a powerful influence in contemporary life is increasingly recognized and manifestations of current concern with anxiety phenomena are ubiquitously reflected in literature, the arts, science and the facets of our culture. The purpose of this study was to compare the Sports Competition Anxiety of male and female basketball players at college level. The present study was conducted on the 12 male and 12 female basketball players were randomly selected from affiliated to the University of Madras. Their age was ranged 18 to 25 year. The collection of data to measure through Sports Competition Anxiety Marten's (1977) Inventory was used. For the analysis of data, collected by administering the questionnaire to all the subject's t- test was employed at $p < .05$ level of significant. The result of the study concluded that there was statistically significant difference in men and women basketball players. It is clear that the mean of men basketball players had better significant difference than the women basketball players.

KEYWORDS: Anxiety, Male, Female And Basketball.

INTRODUCTION

Anxiety as an emotion that is difficult to define and even more difficult to reliably detect in performance but the importance of anxiety as a powerful influence in contemporary life is increasingly recognized and manifestations of current concern with anxiety phenomena are ubiquitously reflected in literature, the arts, science and the facets of our culture. The most serious level of anxiety is panic. One would never want panic to be a part of the athletic environment. It is a condition in which the anxiety has become so great the person loses complete control of himself and the situation. Fear is a still higher level of anxiety and can have a serious effect on sports performance. Fear is an intense anxiety experienced in response to a specific threat.

Most professional and elite amateur athletes will agree that their psychology has a large influence on their sports performance. Most will concede that they could benefit from the services of a sports psychologist. Despite this, the significant majority under utilize their psychological potential. It is well known by all who play sports that defeat often stems from the inability to manage anxiety, fear, anger or despair. In addition drug abuse, eating disorders, narcissism, sociopathic personality disorders and depression are often diagnosed in athletics. Coaches and physical educationists who are ill-equipped to handle such matters will attempt to provide a common sense approach to these complex problems and frequently fail the athlete. Competitive anxiety is a multidimensional state that arises as a result of the cognitive evaluation of a competitive situation. There is a tendency to perceive competitive situations as threatening and to respond to them with feelings of apprehension and tension. Situational factors (such as type of sport or the complexity of the task) and personal factors (such as expectations, achievement of goals, skill level, experience, and age) are crucial in the process of evaluation.

Anxiety symptoms can occur before, during or after the event, which can be cognitive (confusion, negative thoughts, irritability, fear, feelings of weakness, poor concentration), somatic (increase in blood pressure and heart rate, sweating, muscle tension, nausea, vomit) and behavior (repetitive movement, aggressive outbursts, inhibited posture, biting nails).

METHODOLOGY

The present study was conducted on the 12 male and 12 female basketball players who were randomly selected from University of Madras. The players participated in south zone Inter-University level tournaments. Their age ranged from 18 to 25 years. This study measured anxiety level for both male and female subjects. The collection of data to measure through Sports Competition Anxiety Inventory (Marten's (1977) Inventory) was used. A score of less than 17 indicates a low level of anxiety, 17 to 24 an average level of anxiety, and more than 24 a high level of anxiety. For the analysis of data, collected by administering the questionnaire to all the subjects, the collected data were statistically analyzed by using t-test. A t-test was employed at $p < 0.05$ level of significance.

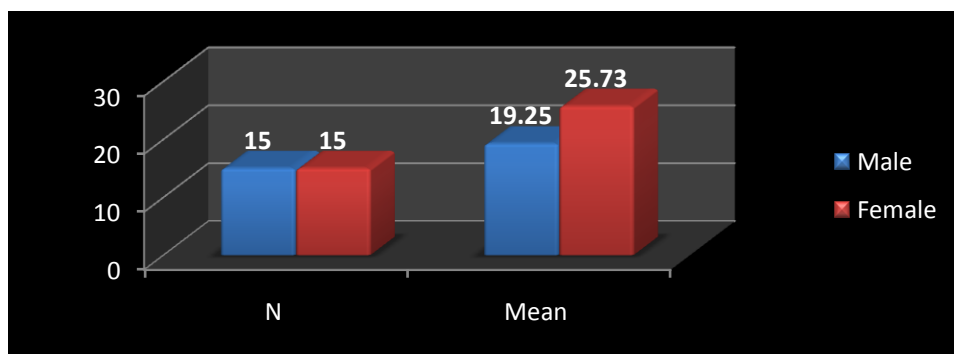
RESULTS

To find out the significant differences in Sports Competition Anxiety level between male and female basketball players. The analysis of data, collected by administering the questionnaire to the entire subjects, a t-test was employed at 0.05 level of significance. The statistical analysis of data pertaining to Sports Competition Anxiety is given below. Findings of the study show that there was a significant difference between the male and female basketball players of south zone Inter-University level. It is

clearly indicates that Sports Competition Anxiety of sports is significantly high than the mean Sports Competition Anxiety of the male of basketball players of south zone Inter-University level. This may be attributed due to the reality that the players of Sports Competition Anxiety for various competition and develop team composition in them and it also help them to distribute the pressure of the completion. It is necessary to train players of team sports to Sports Competition Anxiety. These outcomes may realize to develop the various training plans.

	N	Mean	Std deviation	Std mean error	't'
Male	15	19.25	.72683	.187	2.92
Female	15	25.73	.57749	.149	

Table present there was significant difference in male and female basketball players. It become clear that on the variable Sports Competition Anxiety, the male basketball players had the mean values of 19.25 and the female basketball players had the mean values of 25.73, the calculated t-value was 2.92.



DISCUSSION AND CONCLUSIONS

The results of the study were concluded as follows

This study was an effort in similar way to find out and compare the variety among the basketball players in terms of Sports Competition Anxiety. In the researcher had selected male and female basketball players. In the light of the results of analysis researcher found that there were significant difference was observed between the male and female basketball players. This may be attributed due to the reality that the players of prepare mentally for various competition and develop team composition in them and it also help them to distribute the pressure of the completion. The male basketball players were had better significant difference than the female basketball players.

REFERENCES:

1. Martens, R. (1977). Sport Competition Anxiety Test. Champaign, IL: Human Kinetics.
2. Martens, R., Vealey, R. S., & Burton, D. (1990). Competitive anxiety in sport. Champaign, IL: Human Kinetics.
3. Cottyn JC. The measurement of Competitive Anxiety during balance beam performance in gymnasts. Journal of sports science. 2006; 24:157-164.

4. Cox JC. The measurement of Competitive Anxiety during balance beam performance in gymnasts. Journal of sports science. 2006; 24:157-164.
5. Ford, Robert. Anxiety non-competitive and precompetitive situations involving intercollegiate football players. Doctoral Thesis, Springfield, Massachusetts.
6. Marten RH. The Sports Psychology: Concepts and Applications. Brown, Scibuque, IA, 1986.
7. Schofield G. The online journal of sports psychology, 2000.
8. Singh H. Comparative study of psychologies variables of athletes of individuals and team sports. Ph.D Thesis, Deptt. Phy. Edu. Panjab University Chandigarh.
9. Bird A, M Horn MA. Cognitive Anxiety and Mental Errors in Sports. Journal of Sports & Exercise Psychlogy. 1990; 12(3):217-222.
10. Woodworth RS. Psychology, Methuen. London, 1945.



A COMPARATIVE STUDY ON SELECTED HEALTH RELATED PHYSICAL FITNESS VARIABLES BETWEEN FOOTBALL AND CRICKET PLAYERS

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ABSTRACT

The primary purpose of the study is to compare the selected health related physical fitness variables between football and cricket players. To full fill this purpose fifteen football players and fifteen cricket players from Velammal Matriculation School were selected as a subjects and their age ranged from 23 to 25 years. Taking consideration of the feasibility criteria, availability of instrument and the relevance of the variable to the study, selected health related physical fitness variable flexibility and cardiovascular endurance was selected as variable. The selected variables was measured by using standard testing procedure for Flexibility sit and reach test (in centimetres) and Cardio vascular endurance Cooper's 12 Minutes Run or Walk Test (in meters). The data collected from football and cricket players on selected variable were statistically examined by applying the 't' ratio separately for each variable between the two group. Group A (football players) and the Group B (cricket players). The calculated 't' ratio is tested for significance at 0.05 level of confidence. The results of the study reveal that, there exist no significant difference among the football players and Cricket players with respect to Flexibility but they significantly differ in their Cardio-vascular endurance activity.

KEYWORD: *Flexibility and Cardiovascular Endurance.*

INTRODUCTION

The world sports is a highly ambiguous term having many meaning. Usually sports are generally individualistic. A sport is a manifestation of all that goes to denote and define the enabling qualities in an individual sport to fight and finish. As sports is highly organized from of playing and playing is generally an innate tendency. Playing is very important for growth and development of the organism. It is believed that playing provides the fullest self-expression to man and is one of the fundamental needs. (Barey, 1989)

Now a day's football and cricket are very famous games in this modern world. At present days the people are addicted to play these games as a recreation and professional way. Any how the participation of these sports will help the people to get a good health and fitness. Fitness is a general state of health and well-being or specifically the ability to perform aspects of sports or occupations.

Fitness is a general state of health and well-being or specifically the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise, hygiene and rest. It is a set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity. Before the industrial revolution, fitness was the capacity to carry out the day's activities without undue fatigue.

Flexibility refers to the ability of each joint to express its full range of motion. Flexibility can be tested by stretching individual muscles or by performing exercises such as the lunge or the sit and reach.

Cardiovascular endurance refers to the ability of your heart and lungs to work together to fuel your body with oxygen. The Cooper Run is most often used to test cardiovascular endurance. Aerobic conditioning, like jogging, swimming and cycling, can help improve cardiovascular endurance.

METHODOLOGY

The primary purpose of the study is to compare the selected health related physical fitness variables between football and cricket players. To fulfill this purpose fifteen football players and fifteen cricket players from Velammal Matriculation School were selected as subjects. Their age ranged from 23 to 25 years. Taking consideration of the feasibility criteria, availability of instrument and the relevance of the variable to the study, selected health related physical fitness variable flexibility and cardiovascular endurance was selected as variable. The selected variables were measured by using standard testing procedure for Flexibility sit and reach test (in centimeters) and Cardiovascular endurance Cooper's 12 Minutes Run or Walk Test (in meters). The data collected from men's football and cricket players on selected variable were statistically examined by Applying The 't' ratio applied separately for each variable between the two groups. Group A (football players) and the Group B (cricket players). The calculated 't' ratio is tested for significance at 0.05 level of confidence was used to test significance. All data were analyzed using SPSS statistical package.

Table 1
COMPARISON OF THE LEVEL OF FLEXIBILITY BETWEEN FOOTBALL AND CRICKET PLAYERS

GROUP	MEAN	STANDARD DEVIATION	STANDARD ERROR	'T' RATIO
Football	30.4000	3.56170	.97915	1.906 (N.S)
Cricket	28.5333	1.30201		

Not Significant at 0.05 level

The table value is 2.048.

The above table shows that the means value of football and cricket players were 30.40 and 28.53 respectively. Since the calculated 't' value **1.906** which is lesser than table value of 2.048 at 0.05 level of confidence. Hence the hypothesis has been rejected.

It may concluded that there is no statistically significant difference between football and cricket players on flexibility whereas look in to the mean value football players have better than the cricket players in flexibility.

Figure-1
BAR DIAGRAM SHOWING THE MEAN DIFFERENCES OF FLEXIBILITY BETWEEN FOOTBALL AND CRICKET PLAYERS

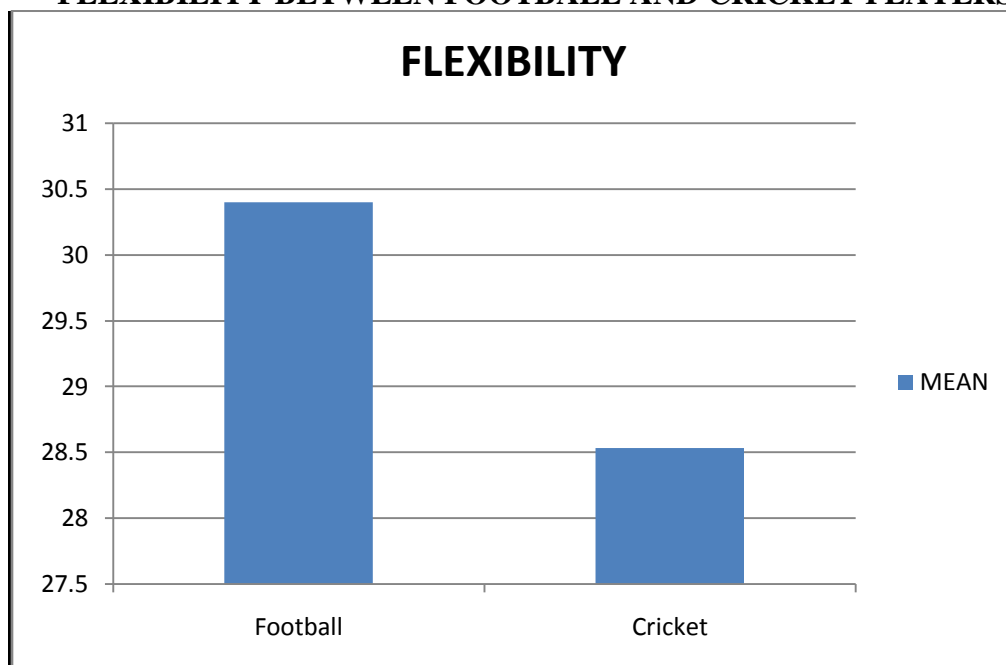


Table- 2
COMPARISON OF THE LEVEL OF CARDIOVASCULAR ENDURANCE
BETWEEN FOOTBALL AND CRICKET PLAYERS
(12 Minutes run and walk)

GROUP	MEAN	STANDARD DEVIATION	STANDARD ERROR	'T' RATIO
Football (N=15)	2.7447	176.26549	69.84018	2.692*
Cricket (N=15)	2.5567	205.17124		

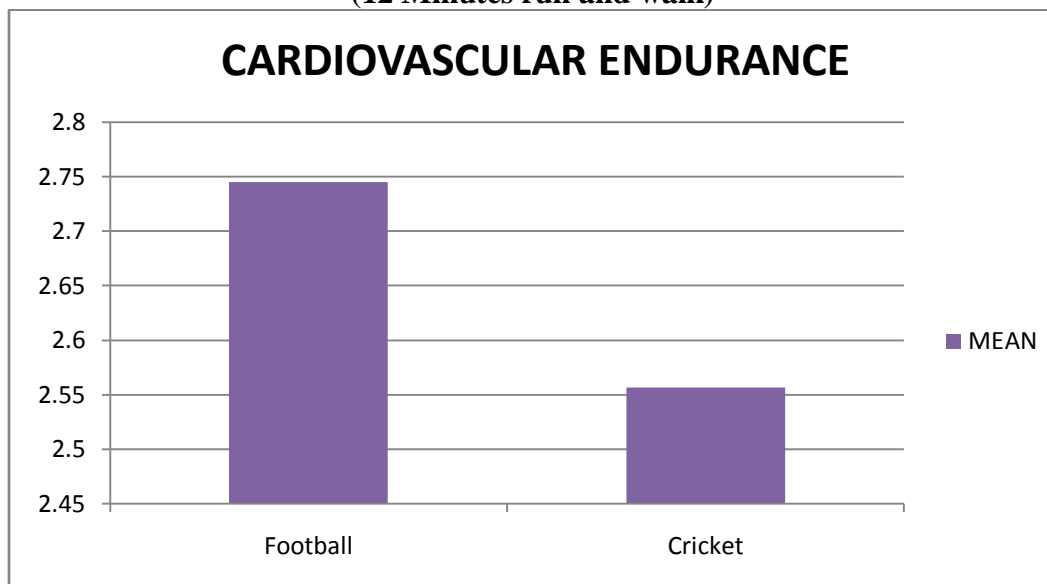
* Significant at 0.05 level

* The table value is 2.048.

The above table shows that the mean values of football and cricket players were. 2.744 And 2.556 respectively. Since the calculated 't' value **2.692** which is greater than the table value of 2.048 at 0.05 level of confidence. Hence the hypothesis has been accepted.

It may concluded that football players have better cardiovascular endurance than the cricket players.

Figure - 2
BAR DIAGRAM SHOWING THE MEAN DIFFERENCES OF CARDIOVASCULAR
ENDURENCE BETWEEN FOOTBALL AND CRICKET PLAYERS
(12 Minutes run and walk)



CONCLUSION

On the basis of findings of the study the following conclusions were drawn.

- 1) The study reveals that, there is no significant difference between football and Cricket players on flexibility
- 2) The study reveals that football players have better cardio vascular endurance than cricket players.

REFERENCES

Abdussalam K., (2011) “A study on the effect of flexibility training on the change of performance in agility” International Journal of Health, Physical Education and Computer Science in Sports, Volume No.2, No.1. ISSN 2231-3265.

Castagna,et. al., (2006) “Cardio respiratory Responses to Yo-Yo Intermittent Endurance Test in Nonelite Youth Soccer Players”. Journal of Strength & Conditioning Research, May 2006 - Volume 20 - Issue 2 .



EFFECT OF AQUA AEROBIC EXERCISES AND AEROBIC EXERCISES WITH SUN SALUTATION ON FLEXIBILITY PARAMETER AMONG COLLEGE MEN STUDENTS

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ABSTRACT

The present study was to investigate the Effect of aqua aerobic exercises and aerobic exercises with sun salutation on flexibility parameter among college men students. To achieve this purpose of the study forty five (N=45) college men students were selected from M.D.T Hindu College, Tirunelveli, Tamil Nadu state, India, during the year 2017-18. The subject's age ranges from 18 to 23 years. The selected subject were divided into three equal groups consists of fifteen subject each namely two experimental groups and control group from college students. The experimental group I underwent aqua aerobic exercise with sun salutation group (AAEG) and experimental group II underwent aerobic exercise with sun salutation group (AEG) programme for twelve weeks. The control group was not taking part in any exercise during the course of the study. The dependent variable flexibility parameter selected for the study, it was measured by sit and reach test formula unit of centimetres .Pre-test was taken before the exercise period and post- test was measured immediately after the twelve weeks exercises period. The data collected from the three groups were statistically analyzed for significance, the analysis of covariance (ANCOVA) was used and the F ratio was found out. The Scheffe's test is applied as post-hoc test to determine the paired mean differences. The level of significance will be fixed at .05 level of confidence for all the cases. These results suggest that both aqua aerobic exercises with sun salutation group and aerobic exercise sun salutation group improve flexibility level.

KEYWORDS: Aqua Aerobic Exercises, Aerobic Exercises And Flexibility

INTRODUCTION

According to **Hoeger, W. K. (1992)** said Aqua fitness is the latest fad in the world of fitness. Aqua exercise is any exercise done in water to complement and enhance your regular training and exercise. Aqua aerobics is refreshing as water calm and relaxes one's body. As a low impact exercise, anyone can do aqua aerobics. The body remains submerged in water and this acts as a cushion and prevents any form of injury. Aerobic exercise performed in water, known as aqua aerobics. Water aerobics or "waterobics" is the performance of aerobic exercise in shallow water such as a swimming pool. In some areas it is known as AquaFit or "aqua aerobics", and is a type of resistance training. Water aerobic workouts usually combine a variety of techniques from land aerobics including walking or running backward and forward, jumping jacks, mimicking cross-country skiing along with various arm movements. The workout also may incorporate equipment such as flotation devices. The benefits of exercising in the water are many. Aquatic exercise is not only enhances cardiovascular fitness, but also can improve the muscular endurance and overall stretching. Because water provides bouncy and support for the body the likelihood of muscles, bones and joint injuries is significantly reduced when exercise is performed in the water. Water provides more resistance than air because of its increased density. This increased resistance helps to promote better muscular endurance and tone. Water aerobics can improve flexibility without causing undue pressure to joints. Because of the lessened effects of gravity in the water, the joints can be more easily moved through a wider range of motion. Water aerobics is cooler and more comfortable than exercise on land. There have been few training studies reported regarding the effects of floor aerobics and aqua aerobics on cardiovascular fitness and body composition, with its increasing popularity it is important to determine if aqua aerobics and floor aerobics will induce a motor fitness components and physiological training effects and changes in body composition.

Bowman A.J (1992) said Aerobic exercise refers to exercise that involves or improve oxygen consumption by the body. Aerobic means with oxygen and refers to the use of oxygen in the body's metabolic or energy generating process. The steps that can be choreographed in to an aerobic dance routine can be varied by impact (i.e, high impact versus low impact.) Aerobic dance exercise (ADE) can usually be completed easily by participants of all ages and fitness level. This is one of the unique characteristics of ADE, in that the same step can be modified by the participants to meet the needs of her individual workout. A typical ADE workout fulfills the cardio respiratory training principles (i.e frequency, intensity, duration, and type of activity continuous) and is similar to any cardio respiratory workout classes begins with a warm up of light activity and stretching exercise for 10 minutes, progress to the 20-30 minutes workout phase and then have a gradual cool down period for 10 minutes. Three parts of a typical 60 minutes program. A number of steps have been defined; walk, run, skip, two-steps, march, jog. Jumping jack, step touch, side kicks and touch backs.

METHODS & MATERIALS

The present study was to investigate the Effect of aqua aerobic exercises and aerobic exercises with sun salutation on flexibility parameter among college men students. This study was selected forty five (N=45) college men students were selected from M.D.T Hindu College, Tirunelveli, Tamil Nadu state, India, during the year 2017-18. The subject's age ranges from 18 to 23 years. They were divided into three groups namely aqua aerobic exercises with sun salutation group (Experimental group I), aerobic exercises with sun salutation group (Experimental group II), and

control group (group III) each consists of 15 subjects. The experimental groups (I & II) were subjected to twelve weeks of aqua aerobic exercises with sun salutation and aerobic exercise with sun salutation training respectively, and the group III acted as control. The experimental groups I used exercises of Toning arms, Water marching, Jogging and Sprinting, Jumping jacks, Cross country skiing, High knee run, Standing kick backs, Leg adduction and abduction, Floating on water and Crunch and experimental group II used exercises v step, turn step, over the top, L step, basic straddle step, side to side, double step side, knee kick, kick forward, kick sideward., but start with smaller number of reps) and the load given were progressively increased from 55%,65%,75% intensity level water aerobic exercise and aerobic exercises drills respectively for one hour per day for three days a week for a period of twelve weeks. The subjects of all the three groups were tested on flexibility prior to and after the training period.

To ascertain flexibility parameter measured by sit and reach test accordingly the mean value count by centimetres.

Statistical Technique

The significance of the difference among the means of experimental group was found out by pre-test. The data were analyzed analysis of covariance (ANCOVA) technique was used with 0.05 levels as confidence. Analysis was performed using SPSS 22.0 (SPSS Inc Software).

RESULTS & INTERPRETATION

Table No.1. ANALYSIS OF COVARIANCE OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON FLEXIBILITY (Units in Centimetres)

Test	G1 AAEWS	G2 AEWS	G3 CG	SV	SS	DF	MS	'F' Ratio
Pre Test								
Mean	11.08	11.09	11.10	Between	.003	2	.002	.003
S.D	.689	.680	.661	Within	19.276	42	.459	
Post Test								
Mean	12.43	12.18	11.08	Between	15.528	2	7.764	24.81*
S.D	.416	.519	.703	Within	13.141	42	.313	
Adjusted Post Test								
Mean	12.44	12.18	11.07	Between	15.764	2	7.882	43.58*
				Within	7.415	41	.181	

*Significance at 0.05 levels

B.M.-Between Means W.G. - Within Groups B.S. Between sets W.S.-Within Sets

(Sit and reach means count in centimetres)

Table value required for significant at 0.05 level with df 2 and 42 and 2 and 41 are 3.22 and 3.23 respectively.

Pre Test: The mean and standard deviation of the pre test flexibility scores of G1, G2 and G3 were $11.08 \pm .6895$, $11.09 \pm .6808$ and $11.10 \pm .6616$ respectively. The obtained pre test F ratio value of .003 was lesser than the required table value of 3.22. Hence the pre test mean value of aqua aerobic exercises with sun salutation group, aerobic exercises with sun salutation group and control group on flexibility before start of the respective treatments was found to be insignificant at 0.05 level of confidence for the degrees of freedom 2 and 42.

Post Test: The mean and standard deviation of the post test flexibility scores of G1, G2 and G3 were $12.43 \pm .4169$, $12.18 \pm .5198$ and $11.08 \pm .7032$ respectively. The obtained pre test F ratio value of 24.82* was greater than the required table value of 3.22. Hence the post test mean value of flexibility shows significant at level of confidence for the degrees of freedom 2 and 42. Thus the results obtained proved that the interventions aqua aerobic exercises with sun salutation group, aerobic exercises with sun salutation group and control group on flexibility different significantly improvements among the treatment groups.

Adjusted Post Test: The mean value of the adjusted post test flexibility scores of G1, G2 and G3 were 12.44, 12.18 and 11.07 respectively. The obtained adjusted post test F ratio value of 43.58* was greater than the required table value of 3.23. Hence the adjusted post test mean value of flexibility shows significant at 0.05 level of confidence for the degrees of freedom 2 and 41. Hence the observed F value on adjusted post test mean among the training groups on flexibility produced significantly improvements.

**TABLE-2 SCHEFFE'S POST HOC TEST MEAN DIFFERENCES ON FLEXIBILITY
AMONG DIFFERENT GROUPS (Units in Centimetres)**

G1 AAEWS	G2 AEWS	G3 CG	Mean Differences	Confidence Interval Value
12.44	12.18	-	0.26	0.39
12.44	-	11.07	1.37	0.39
-	12.18	11.07	1.11	0.39

*Significance at 0.05 levels

In the above table, the results of Scheffe's Post hoc test are presented. From the table it can be seen that the mean difference between aqua aerobic exercises with sun salutation group and aerobic exercises with sun salutation group was 0.26 ($P < 0.05$) and the calculated C.I value is 0.39 ($P > 0.05$). The mean difference between aqua aerobic exercises with sun salutation group and control group is 1.37* ($P > 0.05$) and the calculated C.I value was 0.39 ($P < 0.05$). The mean difference between aerobic exercises with sun salutation group and the control group was 1.11* ($P > 0.05$) and the calculated C.I value is 0.39 ($P < 0.05$). From that it can be clearly noticed that aqua aerobic exercises with sun salutation group responded to the training with more positive influences of flexibility when compared with aerobic exercises with sun salutation group and control group. The aerobic exercises with sun salutation group responded better when compared with the control group.

DISCUSSION OF FINDING

The aqua aerobic exercises with sun salutation group from pre (11.08) to post (12.43) and aerobic exercises with sun salutation group from pre (11.09) to post (12.18) have significantly changed the pre and post results. The present study demonstrates the increased level of flexibility of 0.15 % and 0.12 % for aqua aerobic exercises with sun salutation group and aerobic exercises with sun salutation group respectively. Ewa Piotrowska-Calka and Justyna Karbownik-Kopacz, (2007), The concluded achieved and presented in the survey confirm the possibility of increasing flexibility by training in water.

CONCLUSION

After completion of all work following conclusions were draw by the researcher:

1. Aqua aerobic exercise group was increased flexibility than the aerobic exercise group and control group.
2. Aerobic exercise group was increased flexibility than the control group.

REFERENCE

Sethu.S (2014) “Aerobic Exercise on Muscular Endurance, Cardio Respiratory Endurance, Flexibility and Body Mass Index among Adolescents - An Investigation”. *International Journal of Recent Research and Applied Studies*, Volume-1, Issue-6(17), Pg.No:68 - 70.

Arazi H, Asadi A. (2011) “The Effect of Aquatic and Land Plyometric Training on Strength, Sprint, and Balance in Young Basketball Players”, *Journal of Human Sport and Exercise*, 6:1, 101-111.

Bhavanani, A. B., Udupa, K., & Madanmohan, P. N. (2011). “A comparative study of slow and fast suryanamaskar on physical function”. *International journal of yoga*, 4(2), 71.

Madhankumar.M & Sundar.M. (2016) “Aqua Aerobic Exercises and Aerobic Exercises with Suryanamasakar on Vital Capacity Parameters Among College Men Students: Effect Study” *International Journal of Innovative Knowledge Concepts*, ISBN: 2454-2415, Volume: 2, Issue:11 , Pg.No:22-25.

<http://www.topendsports.com/fitness/flexibility.htm>, retrieved on: 16/06/2017.

<http://study.com/academy/lesson/flexibility-in-fitness-definition-stretches-exercises.html>
retrieved on: 16/06/2017.



ANALYSIS OF SELF-CONCEPT AND SELF-CONFIDENCE BETWEEN HANDBALL AND FOOTBALL PLAYERS OF PONDICHERRY UNIVERSITY

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ABSTRACT

The study is designed to compare the self-concept and self-confidence between football and hand ball players. For this purpose the investigator randomly selected 80 football and handball players from Pondicherry University. Total subjects were divided into two groups with 40 players in each and their age ranged between 21-25 years. Self –concepts data was collected using Mukth rani Rastogi's self- concepts Scale questionnaire and self – confidence data was collected using Agri Hory Rekha's Scale questionnaire. The data collected was analysed using 't' ratio and the result was 0.65 for self-concept and 0.29 for self-confidence. Since the calculated 't' value is less than the required' value 1.99, there is no significant difference between the two groups on self-concept and self-confidence.

KEY WORDS: *Self -Concept, Self-Confidence*

INTRODUCTION

Psychology is the science of behavior and mind including conscious and unconscious phenomena, as well as thought. A great possibility and a wide variety of interests are an academic discipline, and when it comes together, try to understand the liberalization of the brain and the various viruses they exhibit. Psychological factors affect performance and how sports and exercise are affected by participatory psychological and physical causes. In addition to instruction and training of psychological skills for performance improvement, applied sport. As a social science, it seeks to establish general principles for individuals and groups and to research specialized cases. Sports psychology is an interdisciplinary science that draws on knowledge from many related fields including biomechanics, physiology, kinesiology and psychology. It discusses how psychology may include work with athletes, coaches, and parents regarding injury, rehabilitation, communication, team building, and career transitions.

Self-concept is also called self-construction, self-identity, self-perspective or self-structure and it is collection of beliefs about oneself that includes elements such as academic performance, gender identity, sexual identity, and racial identity. Self-concept was distinguishable from self-awareness, which refers to the extent to which self-knowledge was defined, consistent, and currently applicable to one's attitudes and dispositions. Self-concept also differs from self-esteem; self-concept was a cognitive or descriptive component of one's self, while self-esteem is evaluative and opinionated. The perception people have about their past or future selves is related to the perception of their current selves. The temporal self-appraisal theory argues that people have a tendency to maintain a positive self-evaluation by distancing themselves from their negative self and paying more attention to their positive one. In addition, people have a tendency to perceive the past self-less favorably and the future self-more positively.

The concept self-confidence as commonly used as self-assurance in one's personal judgment, ability, power, etc. It increases self-confidence from experiences of having mastered particular activities. It is a positive belief that in the future one can generally accomplish what one wishes to do. Self-confidence was not the same as self-esteem, which is an evaluation of one's own worth, whereas self-confidence is more specifically trust in one's ability to achieve some goal, which one meta-analysis suggested is similar to generalization of self-efficacy. Abraham Maslow and many others after him have emphasized the need to distinguish between self-confidence as a generalized personality characteristic, and self-confidence with respect to a specific task, ability or challenge. Self-confidence typically refers to general self-confidence.

METHODOLOGY

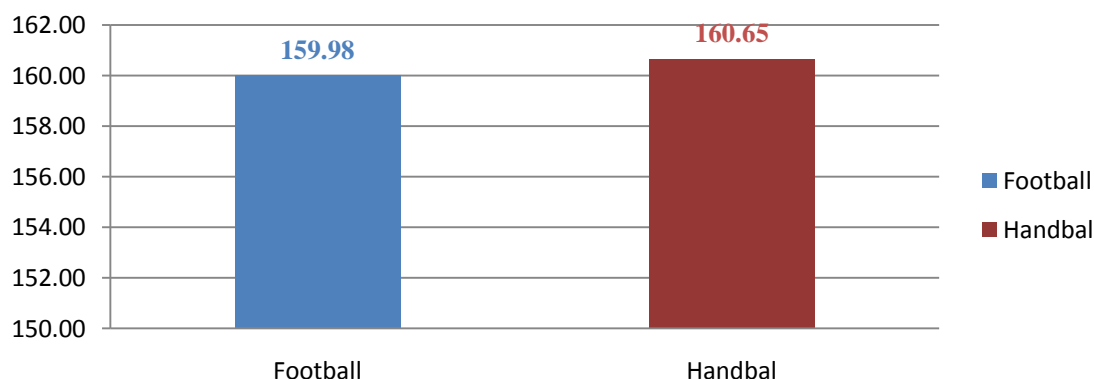
This study is designed to compare the self-concept and self-confidence between football and hand ball players. For this purpose the investigator randomly selected 80 football and handball players from Pondicherry University. Total subjects were divided into two groups with 40 players in each and their age ranged between 21-25 years. Self-concepts data was collected using Muktharani Rastogi's self-concepts Scale questionnaire and self-confidence data was collected using AgriHoryRekha's Scale questionnaire. The data collected was analysed using 't' ratio and the result was 0.65 for self-concept and 0.29 for self-confidence. Since the calculated 't' value is less than the required 't' value 1.99, there is no significant difference between the two groups on self-concept and self-confidence.

Data Analysis and Interpretation**TABLE –I MEAN DIFFERENCE AND “T”RATIO FOR SELF- CONCEPTS**

Group	Mean	S.D	S.Error	S.E.Mean	t-ratio
Football	159.98	5.24	1.50	0.83	0.65
Handball	160.65	7.91	1.50	1.25	

Significant value at 0.05 level is 1.99

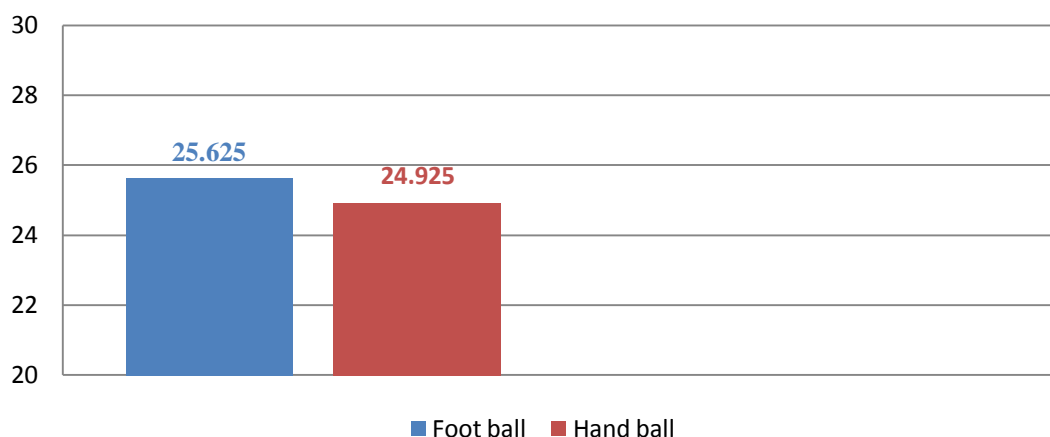
The above table on self-concept shows that there is insignificant difference between the two groups since the required ‘t’ value 1.99 is higher than the calculated ‘t’ value 0.65.

Graphical Representation of Self-Concept**Self-Concept****TABLE –II MEAN DIFFERENCE AND “T” RATIO FOR SELF – CONFIDENCE**

Group	Mean	S.D	S.Error	S.E.Mean	t-ratio
Football	25.63	3.04	0.45	0.48	0.29
Handball	24.93	2.86	0.45	0.45	

Significant value at 0.05 level is 1.99

The above table on self-confidence denotes that there is insignificant difference between the two groups since the required ‘t’ value 1.99 is higher than the calculated ‘t’ value 0.29.

Graphical Representation of Self-Confidence**Self-Confidence****RESULT AND CONCLUSION**

In self -concept and self-confidence variables there is no significant difference between the two groups. Hence it is concluded that football player and handball players do not have significant difference on self -concept and self-confidence.

REFERENCE:

- Leflot, Geertje; Onghena, Patrick; Colpin, Hilde (2010). "Teacher–child interactions: relations with children's self-concept in second grade". *Infant and Child Development*. **19**(4): 385–405. ISSN 1522-7219. doi:10.1002/icd.672.
- Flook, Lisa; Repetti, Rena L; Ullman, Jodie B (March 2005). "Classroom social experiences as predictors of academic performance" (PDF). *Developmental Psychology*. **41** (2): 31–327. ISSN 0012-1649. PMID 15769188. doi:10.1037/0012-1649.41.2.319.
- Bong, Mimi; Clark, Richard E. (1999). "Comparison between self-concept and self-efficacy in academic motivation research". *Educational Psychologist*. **34** (3): 139–153. ISSN 0046-1520. doi:10.1207/s15326985ep3403_1.
- Byrne, Barbara M. (1 September 1984). "The General/Academic Self-Concept Nomological Network: A Review of Construct Validation Research". *Review of Educational Research*. **54** (3): 427–456. ISSN 0034-6543. JSTOR 1170455. doi:10.3102/00346543054003427.
- Byrne, Barbara M.; Gavin, Darlene A. Worth (January 1996). "The Shavelson Model Revisited: Testing for the Structure of Academic Self-Concept across Pre-, Early, and Late Adolescents". *Journal of Educational Psychology*. **88** (2): 215–228. ISSN 0022-0663. doi:10.1037/0022-0663.88.2.215.



A SURVEY TO ASSESS THE REGULATORY BODY'S DECISION TO INTRODUCE YOGA AMONG ENGINEERING COLLEGE STUDENTS

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ABSTRACT

Yoga provides many benefits in physical and mental abilities. A survey was conducted to assess the performance of the yoga course and the recent notification of AICTE. All India Council for Technical Education (AICTE) is regulatory body for both self financing private and Government engineering college. Its rule is also applicable to all AICTE governing intuitions. From the course feedback data, it is clearly shows that students are very much interested in knowing and learning yoga program. It provides the clear endorsement to AICTE decision to introduce yoga along with the other programs (NSS, NCC) is a good decision at right time.

KEYWORDS: *Yoga, Engineering College Students, Physical Health, AICTE.*

INTRODUCTION

As per the press release “All India Council for Technical Education (AICTE) has made it mandatory for all its students to take part in yoga, sports or other socially relevant activities in addition to their regular academics in order to be awarded a degree. Earlier, the institutions had activities like National Social Service (NSS), National Cadet Corps (NCC) and the Unnat Bharat Abhiyan, but these were not compulsory for earning a degree, ¹”. Now as per the above mentioned release it is mandatory to gain a required percentage of attendance to get a degree. A survey was conducted to assess the decision of regulatory body for acceptance of yoga practices among the engineering college students. The survey was conducted from those who have taken foundation course on yoga.

Design of yoga Course

The Yoga Course was designed in keep in mind about the following points. Subjects were mostly planned to take first time yoga course. Keep in mind of their life styles, for example mostly at schools students have Play Time (P.T) period as a part of schedules but not in engineering college students. Playing game is optional not part of routine time schedules. Present life style mostly towards to achieve academic excellence and more time towards usage of Screen time. Screen time means spending more time using smart phone, Television (T.V), Internet and Computer (video) games rather than the physical activities.

Based on the above points, few the key decisions have taken that the course design should take care of the following

1. Students need both Postures (Asana) and Movements.
2. Eye exercise to be included.
3. Back bone exercise to be included
4. Sufficient Relaxation time to be included.

Hypothesis

It was hypothesized that

1. The yoga course would be useful.
2. The yoga course would improve the physical health.
3. It was right decision to introduce yoga and at first year engineering college students.

Limitations

Survey was conducted immediately after the yoga course, the opinions may differ if the survey was taken without yoga course and also the performance of the yoga course. Regulatory body does not recommend any specific yoga training schedules.

Training Schedules

The foundation yoga course was planned as per the table 1 below. The yogic practices were introduced systematically one by one during three weeks programs and the tentative time duration as mentioned below.

TABLE 1 TRAINING SCHEDULES

s.no	Yoga practices	Tentative Duration (Minutes)
1	Standing Asanas	10
2	Sitting Asanas	10
3	Suryanamaskar	10
4	SKY yoga Physical exercises	30
5	Pranaymas	10
6	Meditation	20
	Total	90

Each session was started with prayer, warm up exercise and end with Relaxation. Relaxations were part of simplified physical exercise. Standing asanas were taught as per the Table 2 list of standing asanas. There are many types of Meditation are there, in this course Mudra meditation was introduced. Mudras means gestures or symbol , used for regulating energy flow .Students were asked to practice following each mudras for 2 minutes, prithvi mudra, varuna mudra, chin mudra,Vayu mudra, sunya mudra respectively.

TABLE 2. LIST OF STANDING ASANAS

s.no	Standing asanas
1	Tada asanas
2	Arda kadi Chakrasana
3	Trikonasana
4	Ega pathasana
5	Utkatasana

TABLE 3. LIST OF SITTING ASANAS,SITTING ASANAS WERE TAUGHT AS PER THE TABLE 3 .

s.no	Sitting asanas
1	Padmasana
2	Vajrasana
3	Yoga mudra
4	Mahamudra

Simplified physical exercises are systemized way to make physical bodies three circulation (viz Blood circulation, Air circulation, heat circulation) are in good manner. The exercises were designed by Vethathiri Maharishi as a part of SKY yoga system.

TABLE 4.LIST OF SKY YOGA SIMPLIFIED PHYSICAL EXERCISE

s.no	Simplified Physical exercises
1	Hand exercise
2	Leg exercise
3	Neuro-Muscular Breathing Exercise
4	Kapalapathi
5	Eye Exercise
6	Makarasam
7	Relaxation

Survey method, Questionnaire.

Yoga Training was given to 90 engineering students and scheduled for 3 weeks. At the end of program, a survey questionnaire was used to assess the decision. And the results were drawn.

A survey was conducted to assess the decision of regulatory body for acceptance of yoga practices among the engineering college students.

The yoga course was conducted at private engineering college located near Chennai. Around 30 hours program on the above training schedules were conducted .At the end of the course a questionnaire was prepared and results were analyzed. Analysis of yoga Course feedback was presented below.

TABLE 5. DATA ON THE QUESTION, DO YOU THINK COURSE IS USEFUL?

Options	A	B	C	D	E	Total
Score	31	55	3	1	0	90
Percentage	34.45	61.11	3.33	1.11	0	100

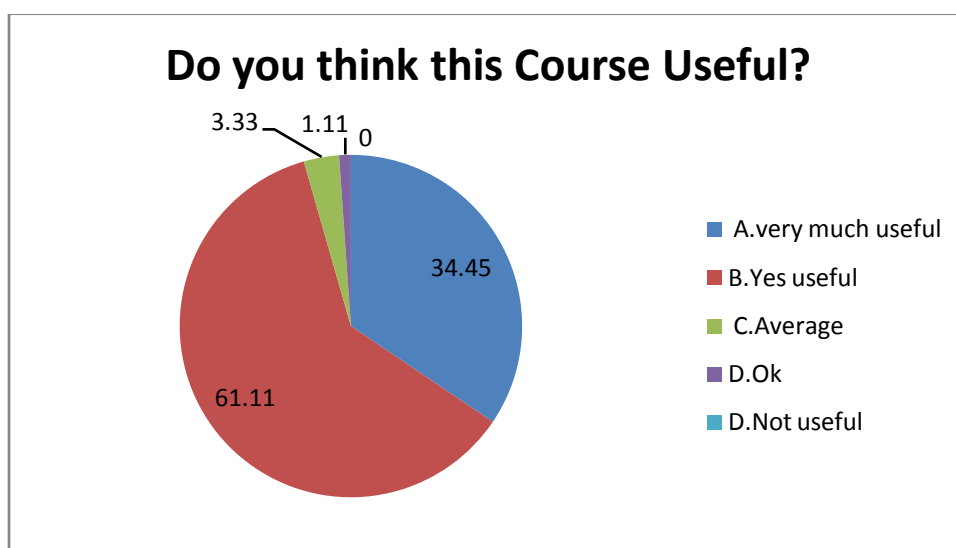
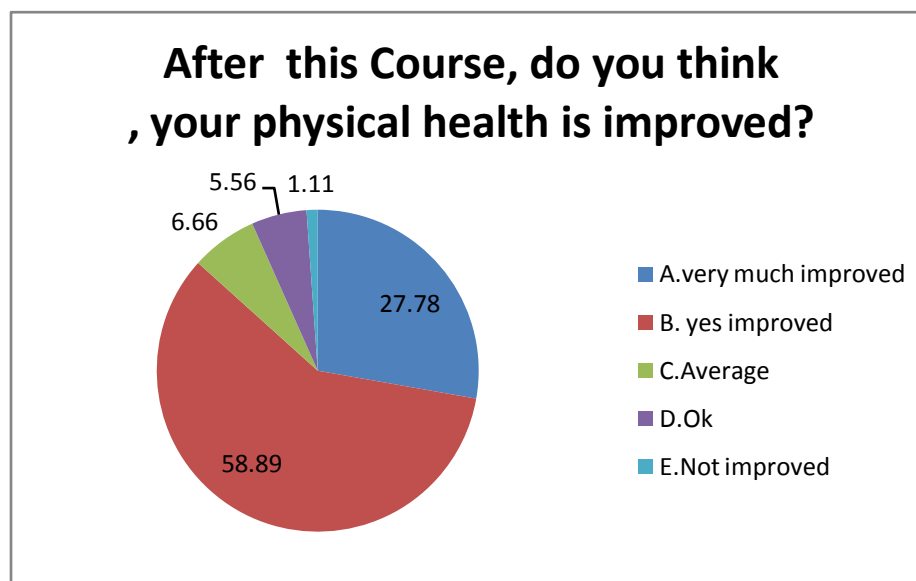
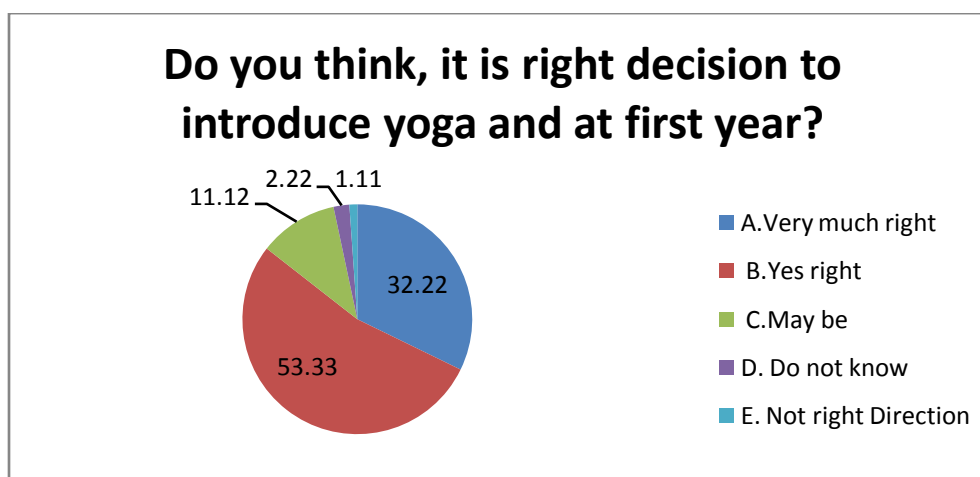


TABLE 6. DATA OF QUESTION, AFTER THIS COURSE ,DO YOU THINK YOUR PHYSICAL HEALTH IS IMPROVED?

Options	A	B	C	D	E	Total
Score	25	53	6	5	1	90
Percentage	27.78	58.89	6.66	5.56	1.11	100

**TABLE 7. DATA ON THE QUESTION DO YOU THINK IT IS RIGHT DECISION TO INTRODUCE YOGA AND AT FIRST YEAR?**

Options	A	B	C	D	E	Total
Score	29	48	10	2	1	90
Percentage	32.22	53.33	11.12	2.22	1.11	100



From the above survey results it shows that

1. Yoga course is useful.
2. Physical health has improved
3. It is right decision to introduce the yoga course andat first year.

The above third question was asked to keep in mind of management decision to introduce yoga, in turn it is adhered to regulatory body decision. Around 85 percentage of students said it is very much right and right to introduce the yoga and at first year. The above survey results clearly endorse the decision of AICTE introduce the yoga at engineering college. Even many students want this program to be extended to subsequent years and increase the duration of program.

CONCLUSION.

From the course feedback data, it is clearly shows that students are very much interested in knowing and learning yoga program. It provides the clear endorsement to AICTE decision to introduce yoga along with the other programs (NSS, NCC) is a good decision at right time.

BIBLIOGRAPHY

1. <https://www.pressreader.com/india/hindustan-times-delhi/20171129/281878708691518>
2. Yogiraj Vethathiri maharishi, Simplified Physical exercise, Vethathiri publication, Erode. 2016 (90th edition).
3. Yogasananas, Vethathiri publication, Erode. 2007 first edition.
4. <https://www.aicte-india.org/bulletins>



INNOVATION FOR ARTS IN EDUCATION: ENHANCING IDENTITY AND COMMUNITARIAN INTEREST

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ABSTRACT

“We share the importance of the arts, not only in society but also in building one’s self-esteem. And the kids really grasp that: They’re confident and proud of themselves and share art with the people in their lives.” -Agnes Gund, founder of Studio in a School

OBJECTIVE OF THE STUDY:

- To integrate art and cultural heritage of the community to enrich the experience of art.
- To create a cultural identity to be imbibed along with art education.

NEED FOR THE STUDY:

Education inculcated through the modes of art forms such as painting, theatre and music plays a vital role owing to the familiarity it creates in the learners. It is important to bridge an innovative alliance with regional culture and art education. Such attempts bring in a regional identity along the growth of technological innovations and experiments. Communitarian identity through art forms helps local narrative from perishing. Integrating such narratives in advanced technical curriculum such as soft wares that deals with visuals makes them travel across the globe.

KEYWORDS: *familiarity, innovative, Integrating, curriculum*

INTRODUCTION:

Art Education has been an integral part of the academic curriculum for upbringing the creative ability and bringing one's own voice about his culture and communitarian practices through the language of art. Art education is not only becomes an integral part of the communitarian expression but it also bridges the link between academic innovations amalgamated with the traditional endeavours.

In the past few decades the arrival of technology had played a vital role in art education. One can visit tribal, aboriginal, modern and contemporary art works across the globe with the facility of internet. As McLuhan said, the world has become a global village that had brought various cultures, linguistic communities and societies together through the web. On the other hand we can see the traditional art is slowly perishing while the arrival of new media takes up the front stage. Whereas there is a need for colliding the traditional art forms with that of technological innovations. This article discusses in detail about the need for inculcating traditional art forms and narratives in the age of technology.

METHODOLOGY:

A systematic understanding of local narratives expressed through the forms of visual and ballads was carried out through careful documentation. Villages such as Poochiyur and Srikalahasthi has been visited by the author in the span of fifteen years. An interaction with the people belong to the areas of study had led to an understanding of the essence of local art forms and the inevitable role they play in forming the regional identity.

Nourishing one's own roots in the age of Technology:

Heritage as a collective form of valuing the material residues of human presence in the world os deeply rooted in history - *Harvey, 2001*

The sense of identity is not a static concept for a community; rather, it develops and changes over the time, replicating the gamut of social values within and around the community.

Art is an articulation of the historic, economic, and cultural context of the community and it plays a vital role in reinforcing and enhancing the community's identity. Arts and cultural expressions pave way to reveal and enhance the underlying identity — the distinctive meaning, value, and character — of the social and physical form of a community. This identity is reflected through the community's character that is recorded in the form of art and literature.

Among them art plays an important role since it is visual and it has greater and faster impact in the minds of the people compared to that of the other forms. In the past few decades the elements and forms of traditional, tribal and aboriginal art has been commandeered by the modern and technological design engineers in the ambition of acquiring enormous market. The concept of “global village”, finds a abutted growth in the company of cultural market. The Australian aboriginal arts, Gond art form of Madhyapradesh, Kalamkari art form from Andrapradesh and many other art forms are absorbed by the designers which are converted to applied commercial art forms that finds its appearance on day today apparels and objects.

It is to be realised that the academic programs strategized by the educationists neglect largely the local art forms that needs to be disseminated to the learners from the very community in itself. As Pierre Bourdieu argues, “the account of the artistic field is regulated by a struggle for ‘distinction’ which requires ‘consecration’ of artistic works by those with the cultural capital to

pronounce authority upon their relative work”¹. Brenda Beck, a professor from United States has been researching and producing animated art works on the Annamar Sami Kathai (Story of Big Brothers)² which is part of the cultural narrative of KonguVellala’s of Coimbatore. It is a narrative of three generations of a farming family who through their adventures and the arbitration of the Hindu gods rise to become rulers of their region. It records the debates between the hunters and farmers in the yesteryears. Even today it is being recited by the bards and locals in the area and it is accurate in its historical accounts, to one’s own surprise. The villages in the area bear illustrated accounts the story of Annamar Sami Kathai³. But, to our dismay not very many students in this region are aware of such tales and narrative visuals.

Telling the stories of one’s own region visually produces a different artistic experience. The marginalisation of art in schools and higher education is found in the technologically inclined academic curriculum which might result in the loss of identity, both cultural and regional. An interaction between academia and community in inculcating folk and tribal cultural narratives not only strengthen society but also creates a sense of belonging and identity that can be enhanced through the new media and technology.

Art therapy as an agent of healthy aesthetics:

It is inevitable to recognise both contemporary and traditional practices in art-in-education.

Strategic art practices are proved to be therapeutic. The colours and strokes enhance the human mind with peace and happiness. The very materials that are used for the traditional art forms apart from the other art practices are evidenced to be health oriented. While, *Annamar Sami Kathai* can be reproduced through the digital media, it is not the case for Kalamkari, the traditional art form on textiles from Andrapradesh. Kalamkari designs are reproduced in the recent past in huge numbers by the modern textile industries. The re-visit of the pattern brings with it a selective forgetting. The negotiation with traditional materials. The mechanical reproductions of Kalamkari use chemical printing ink unlike the traditional ones. In the traditional Kalamkari art natural dyes such as Natural Indigo for blue, Seeds of Nerium and milk (Mayrabolam) for light yellow, Jaggery - Rusted iron filings and water (Kassimkaaram) for black outlines for the fabric, Pomegranate for golden yellow and alum mixed with water for grey. While, the author visited Srikalahasti she was told by the traditional practitioners of Kalamkari that they have never been to a dispensary on health grounds owing to their constant touch with the natural dyes that are therapeutic.

Compositional platforms such as soft wares and social media networks are perhaps an additional platform learning and teaching innovative art forms. Apart from equipping with the contemporary technological there is a need for the art educators to support and inculcate the traditional and indigenous forms of art in the academia.

CONCLUSION:

Art and culture make significant and indispensable contributions to the well-being of communities. Arts and culture are powerful apparatuses with which to engage communities in various levels of transformations. They are a means to public dialogue, contribute to the growth of the community’s creative learning, create healthy communities proficient with action, deliver a powerful tool for community mobilization and activism, and help build strength and leadership.

REFERENCES

- i. Bridget Fowler, Pierre Bourdieu and cultural theory – Critical investigation, Sage Publications, 1997, p-59.
- ii. Brenda Beck and Cassandra Cornall, In The Beginning (The Legend of Ponnivala), Ponnivala Publishing, 2012.
- iii. JayashreeVenkatadurai, Poochiyur: Folklore Ritual Practices and the Co-habitation in University news, Vol.51, No.05, February 04-10, 2013, P. 118,



ANALYSIS OF SELECTED PSYCHOLOGICAL CHARACTERISTICS AMONG CRICKET PLAYERS INVOLVED IN BATTING BOWLING AND WICKET KEEPING

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ABSTRACT

The purpose of the study was to determine the psychological characteristics of under twenty two state level cricket player involved in batting, bowling and wicket keeping. For this purpose 54 cricket players were selected i.e.24 batsmen, 20 pace bowlers and 10 wicket keepers. The following psychological variables were considered to be the major factors contributing to the performance in cricket- sports competitive anxiety, self confidence and stress. For the comparison of psychological variables ANOVA was applied. The result of the study revealed that there is significant difference exist between the means of selected psychological variable self confidence among batsmen, bowlers and wicket keepers. Necessary instructions were given to the subjects before the administration of tests which include the purpose of the study and procedure for answering the questionnaires. The respondents were urged to feel free in answering every question frankly and sincerely. It also made clear and assured of the confidentiality.

KEYWORDS: Questionnaires, Instructions, Respondents, Confidentiality.

INTRODUCTION

Sport is generally considered as a physical endeavor, involve the marshaling of bodily resources to complete a variety of specialized, demanding physical tasks. Every top sportsperson knows that their best performances come from their mind as much as their body. Study of the nature and function of the mind, with particular emphasis placed on the relationship between thought and physical action. Sports psychology is an area which attempts to apply psychological facts and principles to learning performance and associated human behavior in whole field of sports.

Cricket is a field-based sport, with each team consisting of eleven players. Although, all are required to field and bat during a match, each player generally possesses a set of specific skills that defines their role and contributes to the overall performance of the team.

The main aim of the study was to compare and analyse the selected psychological (sports competitive anxiety, self confidence and stress) characteristic of under twenty two boys cricket players involved in batting, bowling and wicket keeping.

METHODOLOGY

The Cricket players those who participated in the Under 22 Kerala State level championship were selected as subjects to accomplish the purpose of this study. An aggregate of 196 players from all the 14 district teams in Kerala were participated in the tournament, of which there were 40 pace bowlers, 40 spinners, 19 wicket keepers, 49 batsmen and 48 all rounder's. However, players categorized as selected for the purpose of this study were batsmen, pace bowlers, and wicket keepers. Stratified random group design was used to select the subjects for this study and the number of batsmen bowlers and wicket keepers restricted to 50 percent of total volunteers thereby, 24 batsmen, 20 pace bowlers, and 10 wicket keepers were considered. The investigator referred various relevant literatures, consulted with experienced experts in physical education and sports, more specifically cricketers to identify ideal variables. In addition to this by using the investigator's personal knowledge and professional experience the following most appropriate variables were selected: - sports competitive anxiety, self confidence and stress. In this investigation standardized were used to assess the selected psychological variables. In the current exploration, the appropriate equipments were selected in the present investigation were presented in Table 1.

TABLE 1
QUESTIONNAIRE USED FOR THE SELECTED VARIABLES

S.No	Variables	Questionnaire
1	Sports Competitive Anxiety	Martens
2	Self Confidence	Rekha Agnihotry
3	Stress	Everly and Giordano

Administration of Questionnaires

The subjects were consulted personally and their sincere cooperation was solicited. The research scholar himself had collected data on the selected psychological variables of cricket players.

Respondents were called to a common place in groups when they were not busy and had enough time to spare for testing. Necessary instructions were given to the subjects before the administration of tests which include the purpose of the study and procedure for answering the questionnaires. The respondents were urged to feel free in answering every question frankly and sincerely. It also made clear and assured of the confidentiality.

After making sure that subjects understood the general instructions, the questionnaires were distributed to the subjects. All the three questionnaires were administered to all subjects under the direct supervision of the investigator. The questionnaires were administered in accordance with the instructions laid down in the manuals. These tests were administered one after the other separately, after a gap of 15-20 minutes in between the tests. The subjects were asked to read each statement of the questionnaire carefully. In case of doubts, they were clarified by the investigator and were asked to reply the question as per direction in the questionnaire. The approximate time taken to complete each questionnaire was about 20 minutes. However, no time limit was given for the various tests and the subjects were asked to respond to each statement truthfully as soon as possible. The questionnaires were taken back after duly completed. Thorough screening was done to check that no questions were left unanswered. The scoring was done for each variable according to the instructions given in the respective manual.

Statistical Techniques

SPSS statistic software package (SPSS Company, America, version 16.0) was used for statistical analysis. ANOVA was used for comparisons of mean values between the batsmen, bowlers and wicketkeepers of under twenty two Kerala state cricket players. This ANOVA was performed between unequal groups. The α value of 0.05 was set for statistical significance.

ANALYSIS OF DATA AND RESULTS OF THE STUDY

TABLE 2
ANALYSIS OF VARIANCE ON SELECTED PSYCHOLOGICAL VARIABLES
AMONG CRICKET PLAYERS OF DIFFERENT CALIBER

Variables	Batsman	Bowler	Wicket keeper	F	p
	N = 24	N = 20	N = 10		
Sports Competitive Anxiety	18.63 ± 3.52	18.70 ± 3.31	18.90 ± 3.76	0.022	.978
Self Confidence	27.17 ± 3.31	27.00 ± 5.18	23.40 ± 3.10	3.348	.043
Stress	7.96 ± 2.97	7.70 ± 2.81	7.40 ± 2.91	0.137	.872

It is clear from Table 2 that significant difference exists among batsman bowlers and wicket keepers on self confidence as the obtained F ratio of 3.348 ($p < 0.05$). Whereas, sports competitive anxiety and stress didn't differ significantly among batsman, bowlers and wicket keepers as the obtained F ratios of 0.022 and 0.137 ($p > 0.05$).

The graphical illustrations of the data on selected physiological variables among cricket players of different caliber are given in Figure 1 to 3.

Fig. 1: Data on Sports Competitive Anxiety

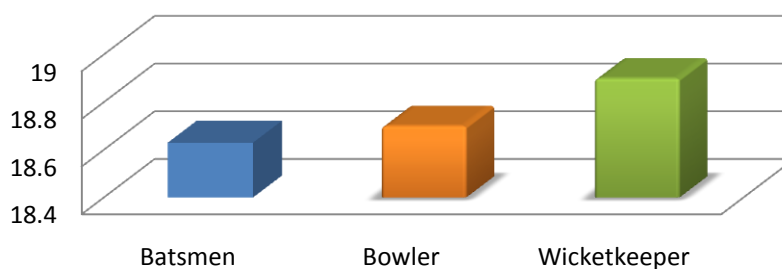


Fig.2: Data on Self Confidence

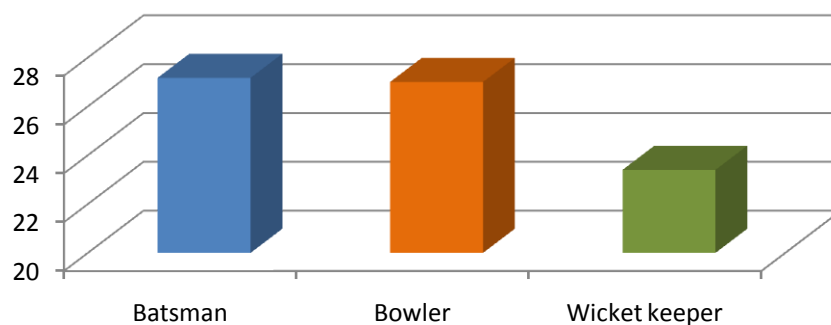
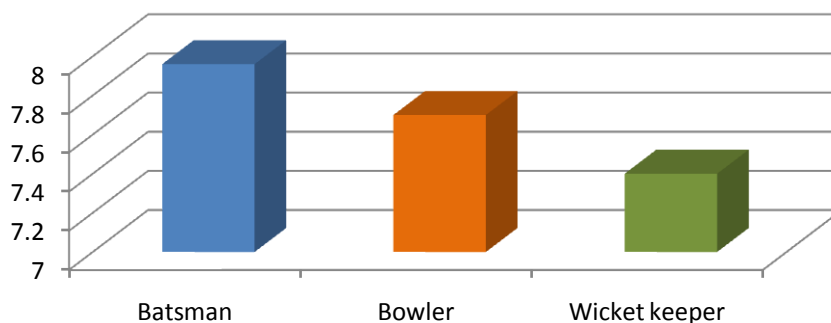


Fig.3: Data on Stress



CONCLUSION

Cricket is often thought of as a sport in which the main competitions are more individual-to-individual than in any other team sport. Physical fitness, physiological and psychological are important at all levels of the game. In cricket the players were classified into three groups as batsmen, bowler and wicketkeeper each of them have prominent role during the match. The main aim of the study was to compare and analyse the selected psychological (sports competitive anxiety, self confidence and stress) of under twenty two boys cricket players involved in batting, bowling and wicketkeepers. Significant difference exists in self confidence among batsmen, bowlers and wicket keepers. The outcome of the present investigation may gratify to the demands for augmentation of sports performance.

REFERENCES

1. Borrego, C.C., Cid, L., Silva, C. (2012). Relationship between group cohesion and anxiety in soccer. *J Hum Kinet*, 34: 119-27.
2. Brink, M.S., Visscher, C., Coutts, A.J., Lemmink, K.A. (2012). Changes in perceived stress and recovery in overreached young elite soccer players. *Scand J Med Sci Sports*, 22(2): 285-92.
3. Chittibabu, B. (2014). Comparison of speed and agility among handball players of different playing position. *International Journal of Current Innovation Research*, 1(1): 8-10.
4. Coutts, A.J., Reaburn, P. (2008). Monitoring changes in rugby league players' perceived stress and recovery during intensified training. *Percept Mot Skills*, 106(3): 904-16.
5. Cox, R.H., Yoo, H.S. (1995). Playing position and psychological skill in American football. *Journal of Sport Behavior*, 18(3): 80-86.
6. Ferreira JP, Chatzisarantis N, Gaspar PM, Campos MJ. (2007). Precompetitive anxiety and self-confidence in athletes with disability. *Percept Mot Skills*, 105(1): 339-46.
7. Filaire, E., Alix, D., Ferrand, C., Verger, M. (2009). Psychophysiological stress in tennis players during the first single match of a tournament. *Psychoneuroendocrinology*, 34(1): 150-7.
8. Gee, C.J. (2010). How does sport psychology actually improve athletic performance? A framework to facilitate athletes' and coaches' understanding. *Behav Modif*, 34(5): 386-402.
9. Grobbelaar, H.W., Eloff, M. (2011). Psychological skills of provincial netball players in different playing positions. *South African Journal for Research in Sport, Physical Education and Recreation*, 33(2): 45-58.



ANALYSIS OF FACTORS INFLUENCING BODY WEIGHT AND BODY TYPE OF WOMEN STUDENTS

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ABSTRACT

The aim of this investigation was to analyze the factor influencing body weight and body type of university women students. For the purpose of the study 857 subjects have been selected from Pondicherry university. The subject's age group ranged from 20 to 25 years. The data were interpreted with BMI calculation. Body composition was assessed by BMI technique and compared with standard norms. This study was to find out the body type of Pondicherry university women students. The result was showed that among the 857 subjects 184subjects (21.47%) were underweight, 527 subjects were (61.49 %) Healthy weight, 125subjects were (14.59%) Overweight and 21subjects were (2.45%) Obesity. Out of 857 subjects 146 subjects are overweight and underweight so they must focus on their food habit as well as more physical activities. The irregular food habits of students are it may results of lean body mass.

KEY WORDS: *Bmi, Overweight, Obesity, Lean Body Mass, Food Habits, Physical Activity.*

INTRODUCTION

Overweight and obesity indicate a weight greater than healthy. It is a chronic condition defined by an excess amount of body fat. A certain amount of body fat is necessary for storing energy, heat insulation, shock absorption, and other functions. Obesity means having excess body fat. For adults 35 and older, having a BMI greater than 30 is considered obese. It is not just a cosmetic consideration. It is a chronic medical disease that can lead to diabetes, high blood pressure, heart disease, gallstones, and other chronic illnesses and has also been linked to increased risk for a number of cancers. It is difficult to treat and has a high relapse rate. The goal of treatment should be to achieve and maintain a "healthier weight," not necessarily an ideal weight. Changes to diet and exercising are the main treatments. Diet quality can be improved by reducing the consumption of energy-dense foods, such as those high in fat and sugars, and by increasing the intake of dietary fiber. **Obesity is mostly looked upon as having a relatively awkward body-shape.** A person is considered morbidly obese if his/her weight is 45 kgs above the normal range for her age and height and a Body Mass Index of 40 kgs or more.

Causes:

Genetics, overeating, diet high in simple carbohydrates, Psychological factors, Physical inactivity, Medications, Psychological factors.

STATEMENT OF THE PROBLEM

Delimitation

1. The study was limited to the Pondicherry university women students.
2. The age range between twenty to twenty five years.
3. The Study was to assess the obese women.

Limitation

1. The smoking, alcohol consumption and lifestyles will not be considered.
2. The Socio economic status of the subjects will not be considered.
3. The effects of any medication on the subjects' performance will be ignored.

METHODOLOGY

Selection of subjects

For the purpose of the study 857 subjects have been selected from Pondicherry University. The subject's age group ranged from 20 to 25 years. All the students are staying in the hostels.

Selection of variables

BMI, factors influencing obesity such as food habits, physical activities.

Procedure

Height measured in stadiometer (cm) and weight measured in weighing machine (kg).

Calculation:

$BMI = \text{Weight (kg)} / \text{Height (h}^2\text{)}.$

Collection of Data

All the subjects were tested their height and weight by which the BMI was calculated and tabulated the category of body type of the students.

Category: Underweight 16-18.5; Healthy Weight 18.5 -25; Overweight 25-30; Moderate obese 30-35; Severe obese 35-40; Very severe obese Over 40.

After derived from the result of body type, the investigator was finding the reason for this body types by testing the factors influencing the body types.

Physical and health factor questionnaire used to find out the factors influencing the body type among the Pondicherry University women. The questionnaire content is with different factors analyzing questions by which find the factor of body become grown up. The main objective of variables selected from this is food habit, inactive on physical activities.

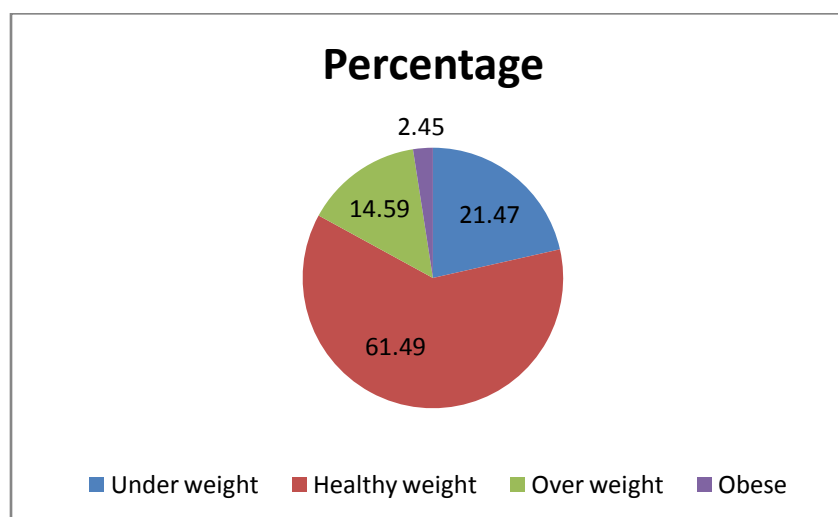
RESULT AND DISCUSSION

The following are the results of variables by using BMI calculation of Pondicherry University women.

S.NO	BMI RESULT	SUBJECT	PERCENTAGE
1.	Under weight	184	21.47
2.	Healthy weight	527	61.49
3.	Overweight	125	14.59
4.	Obese	21	2.45
	TOTAL	857	100

Totally 857 subjects were taken data of their height and weight, out of which underweight is 184(21.47%), Healthy weight 527 (61.49 %), Over weight 125 (14.59%), and Obesity 21 (2.45%).

The results showed that in Pondicherry University hostel staying students were 2.45% falls in obesity and 14.59% were in overweight category. Total 21.47% were in lean body mass.



RESULT OF FOOD HABIT

S.NO	Food Habits	Representation	Percentage
1.	Vegetarians	150	17.50
2.	Non-vegetarians	707	82.49
3.	Fast food	337	39.32
4.	Gracie eater	53	6.18
5.	Health conscious food	521	60.79
6.	Irregular food habits	226	26.37
	TOTAL	857	

The above results showed that out of 857 women participants of Pondicherry University stated that 17.50% (150) of students are vegetarians 82.49% (707) are non-vegetarians, 39.32% (337) are fast food frequent takers, 6.18% (53) are gracy eater and 60.79% (521) are health conscious food takers. 26.37% (226) are represents the irregular food habits.

The result described that, the high percentage of 82.49% may be causes of falling obese and over weight of students, similarly 6.18% students are gracy eater it may another reason influence the overweight and obesity. The 60.79% students' conscious in their food to maintenance their body health, this may be reason of students are in good and average weight. The irregular food habits of students are 26.37%, it may results of lean body mass.

RESULT OF PHYSICAL ACTIVITIES

S.No.	Physical Activities	Representation	Percentage
1.	Daily doing exercises	26	3.03
2.	Never doing exercises	526	61.37
3.	Occasionally doing exercises	81	9.45
4.	Not interested to do exercises	461	53.79
5.	No awareness	521	60.79
	TOTAL	857	

The results derived from the above table that, 3.03% (26) of the students are doing regular physical activities it may cause their good health and weight of the Pondicherry University women. 61.37% (526) students are stated never doing exercises, this may be reason they may fall into overweight and obese. 53.79% (461) students are saying not interested to do exercises, it mean that this may be reason they are in either lean body mass or overweight. 60.79% (521) university students stated that don't have awareness of important of exercise (awareness), this may be another reason theyfall into overweight or obese and lean body mass.

CONCLUSIONS

1. Most of the students of Pondicherry University are good in BMI that is average weight category (61.49%)

2. 21.47% of Pondicherry University students are lean body mass.
3. Overweight 14.59% of the students are in this category
4. Obese are in 2.45% in Pondicherry University women students.
5. Gracy eater and fast food habits may cause for obesity and overweight of students.
6. Irregular food habits may be influence the lean body mass of the students.
7. Most of the students do not have awareness of importance of exercise and inactivity of physical exercises may be reason for overweight and obesity of Pondicherry University students.
8. Overeating and lack of physical activity are the main causes of obesity.

RECOMMENDATIONS

The following are the recommendation from the above findings.

1. The knowledge of BMI must teach to the students to get aware of their body type.
2. To create awareness programme of importance of physical activities to improve their health and body type.
3. To give information about the food chart to the students to follow their food habits.
4. The physical exercise programme must be compulsion in college level to improve their physical, psychological, health wellbeing.
5. Suggest the recommended training programme to the overweight and obese students to reduce their body weight.
6. Suggest the recommended food and exercise to gain the body weight for the lean body mass students.

REFERENCE

1. Alfredo Martinez J, "Body-weight regulation: causes of obesity proceedings of the nutrition society" Volume 59, Issue 3 August 2000, pp. 337-345.
2. Jacob C Seidell Katherine M Flegal "Assessing obesity: classification and epidemiology" *British Medical Bulletin*, Volume 53, Issue 2, 1 January 1997, Pages 238–252.
3. Gilles Plourde and Denis Prudhomme "Managing obesity in adults in primary care" *CMAJ* June 12, 2012 184 (9) **1039-1044**; DOI: <https://doi.org/10.1503/cmaj.111640>.
4. Swinburn BA, Caterson I, Seidell JC, James WPT "Diet, nutrition and the prevention of excess weight gain and obesity public health nutrition" Volume 7, Issue February 2004 , pp. 123-146.
5. James M Rippe and Stacey Hess "The Role of Physical Activity in the Prevention and Management of Obesity" *Journal of the American Dietetic Association*, Volume 98, Issue 10, Supplement, October 1998, Pages S31-S38.
6. Thomas A. Wadden, Meghan L. Butryn, Christopher Wilson "Lifestyle Modification for the Management of Obesity" *Gastroenterology* Volume 132, Issue 6, May 2007, Pages 2226-2238.
7. Aurélie Bocquier, Pierre Verger, Arnaud Basdevant, Gérard Andreotti, Jean Baretge, Patrick Villani, Alain Paraponaris "Overweight and Obesity: Knowledge, Attitudes, and Practices of General Practitioners in France" *obesity A research Journal* Volume 13, Issue 4 April 2005 Pages 787–795.

8. Katherine M. Flegal, Margaret D. Carroll, MSPH; Brian K. Kit, et al “Prevalence of Obesity and Trends in the Distribution of Body Mass Index Among US Adults, 1999-2010” JAMA. 2012;307(5):491-497. doi:10.1001/jama.2012.39.
9. Melinda S Sothorn, Obesity prevention in children: physical activity and nutrition Nutrition July–August, 2004 Volume 20, Issues 7-8, Pages 704–708.
10. Tom Baranowski et.al, “Physical Activity and Nutrition in Children and Youth: An Overview of Obesity Prevention” Preventive Medicine Volume 31, Issue 2, August 2000, Pages S1-S10.



COMPARISON OF SELECTED MOTOR FITNESS COMPONENTS BETWEEN MEN BASKETBALL AND HANDBALL PLAYERS

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ABSTRACT

The purpose of the study was find out the comparison of selected motor fitness components between men basketball and handball players. To achieve the purpose of the study investigator selected 25 Basketball players and 25 Handball players from Tamil Nadu Physical Education and Sports University at Chennai. Their ages ranges from 18 to 25 years. They were randomly selected from Basketball players and Handball players. After analyzing the various factors associated with the presented study. The following motor fitness components such as speed, agility. Speed was measured 50 meters dash test, agility was measured Semo agility test. The collected data were analysed statistically by indepent 't' test used. From the analysis of data it was proved that there is significant difference agility. That there was no significant difference speed between men basketball and handball players.

KEYWORDS: *Speed And Agility.*

INTRODUCTION

The term motor fitness is most often used synonymously with physical fitness by the coaches but it is very important for the physical education students to understand the basic difference between physical fitness and motor fitness. Physical fitness is used to denote only the five basic fitness components strength muscular endurance, cardio vascular endurance, freedom from obesity and flexibility, whereas motor fitness is a more comprehensive term, which includes all the ten fitness components including additional five motor performance components power, speed, agility, balance and reaction time are important mainly for success in sports. In other word, motor fitness refers to the efficiency of basic movements in addition to the physical fitness (Kansal, 1996).

STATEMENT OF THE PROBLEM

The purpose of the study was to comparing of selected motor fitness components between college level men basketball and handball players.

HYPOTHESIS

It is hypothesized that there will be a significant difference on motor fitness components namely such as speed and agility between basketball and handball players.

REVIEW AND RELATED LITERATURE

Ramu Pilli (2010) conducted a study to compare the anthropometric and physical variables among kho-kho and handball players of Andhra Pradesh school games teams. To conduct the study, 40 male players of kho-kho and handball were selected as subjects from Andhra Pradesh state school Games teams. The players who were selected as subjects for the studies have participated at national level competition. The age of the subjects were ranged between 16 and 20 years. The following variables such as speed, endurance, explosive strength, muscular endurance, and height, weight, sitting height, body fat and soma to type were selected as criterion variables. The analysis of 't' ratio was used to analyses the significant differences if any between the groups. The level of significance was fixed at 0.05 level of confidence, which was considered to be appropriate. The result of the study shows that handball players were better in six variables such as explosive strength, muscular endurance, height, weight, sitting height, body fat and soma to type; further the study indicates that kho-kho player were better in speed and endurance.

Meera(1984) was conducted a study to compare the selected general motor ability compounds i.e. .speed .agility , flexibility , muscular endurance, balance, leg strength.Arm and shoulder strength and co-ordination of women basketball and volleyball .the subject chose were women basketball and volleyball players in Lakshmibai national college of physical education , Gwalior .fifteen players in each game were selected and the components were tested on the player the data collected in all the test were statistically compared by using 't' ratio at 05 level of significance .the analysis showed that the women basket player were comparatively superior to volleyball players in arm and shoulder strength ,But there were no significant difference between the two groups in speed agility trunk flexion . Abdomenonalendurance,balance, leg strength and hand eye co-ordination.

METHODOLOGY

To achieve the purpose of the study investigator selected 25 Basketball players and 25 Handball players from Tamil Nadu Physical Education and Sports University at Chennai. Their ages range from 18 to 25 years. They were randomly selected from Basketball players and Handball players. After analyzing the various factors associated with the presented study. The following motor fitness components such as speed, agility. Speed was measured 50 meters dash test, agility was measured semi agility test. The collected data were analysed statistically by independent 't' test used.

RESULTS AND DISCUSSION

TABLE-I
SHOWING THE MEAN VALUE OF BASKETBALL AND HANBALL PLAYERS ON
SPEED AGILITY

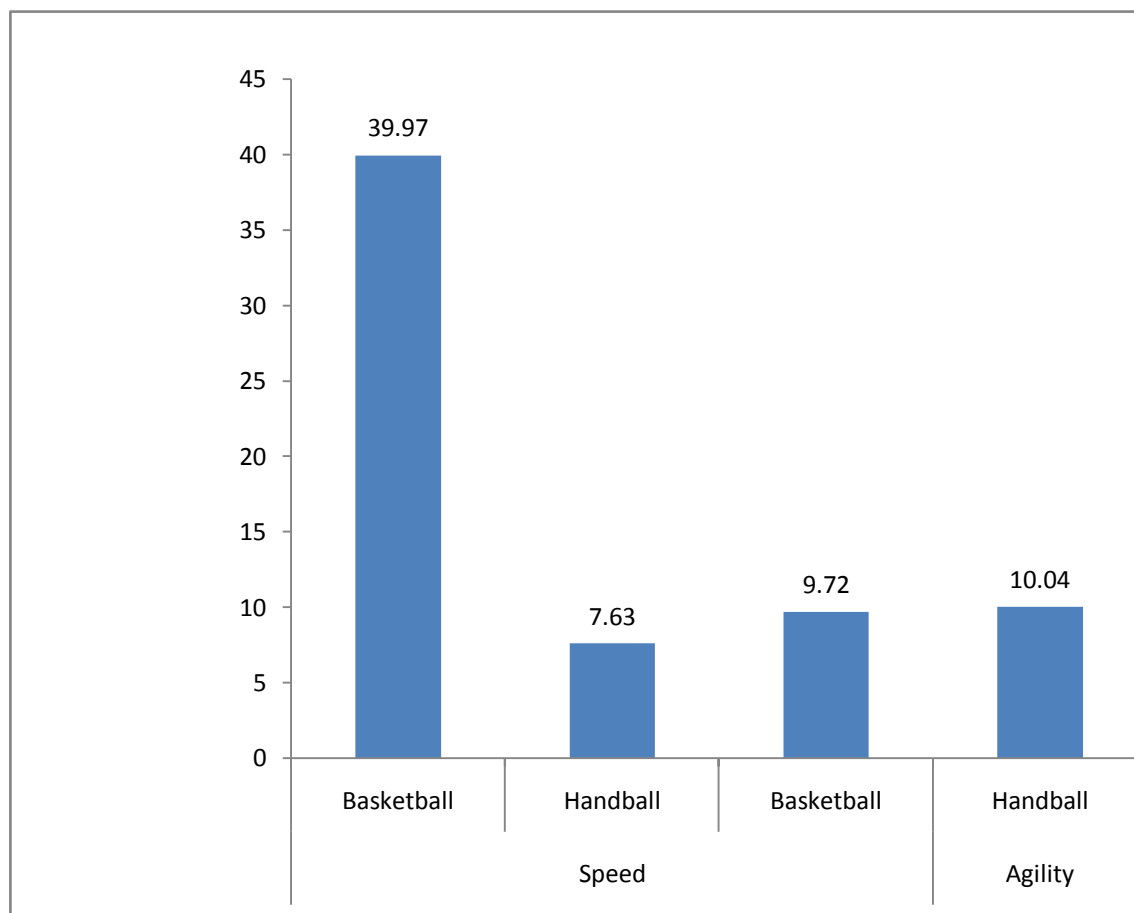
VARIABLES	GROUP	NUMBER OF SUBJECT	MEAN	STANDARD DIVATION	T
Speed	Basketball	25	39.97	157.79	1.02
	Handball	25	7.63	0.455	
Agility	Basketball	25	9.72	0.4044	2.24*
	Handball	25	10.04	0.581	

*Significant at 0.05 level with df 48 is 2.02

The result presented in Table I proved that there was no significant difference in speed as the obtained 't' value of 1.02 was lesser than the table 't' value of 2.02.

That there was significant difference in agility as the obtained 't' value of 2.24 was greater than the table 't' value of 2.02.

Figure – 1
SHOWING THE MEAN VALUE OF BASKETBALL AND HANBALL PLAYERS ON
SPEED AND AGILITY



CONCLUSION

1. It was concluded that there was no significant difference in speed between basketball and handball players.
2. It was concluded that there was significant difference in agility between basketball and handball players.

REFERENCE

Kansal, 1996, "Strength and Power Predictors of Sports

Speed" The Journal of Strength and Conditioning Research, Vol.19, (2005).

Ramupilli,(2010) "Comparison Of Anthropometric And Physical Variables Among Kho-Kho And Handball Players Of Andhra Pradesh School Games Team" , British Journal of Sports Medicine,

Meera (1984)"Comparison of Selected General Motor Abilitybetween Women Basketball and Volleyball Players".



INCULCATION OF INTERNET CULTURE FOR HEALTHY LIVING

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ABSTRACT

Internet is the dangerous advancement in the present scenario. Though it is useful people thrust for misusing it. "Time is precious". But wasting time in internet is precious for the youngsters. Usage of net in late nights, causes many health problems like poor eye sight, back pain, headache, tiredness etc... this may lead to dangerous disease also. So students should know what the usage of internet is. Parents and teachers should be given some awareness about this developing problem. In this study the internet addiction and its hazards are explored. The mean value shows that the yes response (59.13) is higher than the no response those who get eye irritation. So the null hypothesis stated, "there is no significant difference between eye irritation and internet addiction" is rejected. For these reasons we need to consider the many negative impacts and fight to reduce internet addiction. It is described as the use of internet is increasing amounts of time in order to achieve satisfaction.

KEYWORDS: "Time Is Precious", Hazards, Tiredness, Headache, Hypothesis

INTRODUCTION

The personal lives of people have been reshaped with the usage of internet. Number of users of internet has increased drastically. The working style has modified the lifestyles of the people leading health hazards. Obesity, carpal tunnel syndrome, dryness in the eye, headache, back ache and also a serious decline in personal hygiene are experienced among the people who overuse internet.

Global communication is the greatest blessing of the internet. Anywhere, anytime anything can be communicated easily, smoothly and in various means with the help of internet. This facility if not utilized properly may lead to addiction. The addictive usage makes it compulsive behaviour that interferes with daily life, relationships and also in the personal spheres of the people.

Twitter, face book, instagram and other such sites gulps a lot of time. Such engagements start affecting the wellbeing of the person. When a person spends large amount of time in any chore including exercising, driving, or watching TV impacts the health. The billion dollar question today is about the goodness/badness of the social media.

Addition to internet is actually recognized as a disorder by psychologist Kimberly Young, David Greenfield. Anyhow in India, the true nature of internet addiction is yet to be determined. Hence a study is taken up in this regard to find out the nature of this addiction. As the student teachers are the shapers of the future generation, the investigators selected the B.Ed students and studied the impact of gender on internet addiction in addition to the eating habits and related health hazards

OBJECTIVES OF THE STUDY

The following objectives as follows:

- To understand the internet addiction level on the basis of gender.
- To study the internet addiction and health related problems.
- To study the internet addiction and eating habits of student teachers

HYPOTHESES

- There is no significant difference between internet addiction scores based on gender.
- There is no significant difference between internet addiction scores based health related problems
- There is no significant difference between internet addiction scores based on eating habits

METHODOLOGY

Sample

The investigator selected a sample of 320 students from three B.Ed institutions of Trichirappalli district. The institutions selected for data collection are located at both rural and urban areas in Trichirappalli District.

Tools used

The tools used for the present study are:

1. Personal data sheet (prepared by the investigator)
2. Internet Addiction Scale(prepared by Dr. Kimberly Young)

RESULTS AND DISCUSSION

Analysis of Internet Addiction Scores Based on Gender

Internet addiction scores of male and female Student Teachers are compared using the t-test for significance of difference between means (t-test) the t-value obtained are given in the following table.

TABLE 1 INTERNET ADDICTION SCORES BASED ON GENDER

GENDER	MEAN	S.D	No	't'-value
Male	61.4	11.08	100	4.653**
Female	55.2	10.35	220	

No- Number of Students, SD-Standard Deviation, **Significant At 0.01 Level

From the above table, it is clear that there is high significant difference in internet addiction score of male and female. Therefore the null hypothesis stated, "there is no significant difference between internet addiction scores based on gender" is rejected. Internet addiction scores of male were found to be higher than those of female. These findings were supported by various studies. In a study carried out by **Choi et al., (2008)** it was reported that the case of internet addiction was more common in male students when compared to female students.

Analysis of t-test Scores Based on Internet Addiction with Respect to Health Condition

Internet addiction and health related problems are compared using the t-test for significance of difference between means the t-value obtained are given in the following table.

TABLE -2 INTERNET ADDICTION AND HEALTH RELATED PROBLEMS

VARIABLES		No	MEAN	S.D	't'- value
Headache	Yes response	114	58.59	11.81	1.671^{NS}
	No response	206	56.33	11.04	
Back pain	Yes response	159	58.54	10.74	2.211*
	No response	161	55.75	11.79	
Eye irritation	Yes response	160	59.13	11.39	3.195**
	No response	160	55.13	11.00	

NS-Not Significant, *Significant at 0.05 Level, ** Significant at 0.01

From the above table it is inferred that when the health condition is taken into consideration headache does not have any significant difference based on internet addiction score. So the hypothesis stated that, "there is no significant difference between headache and internet addiction" is accepted.

With regard to the t-value 2.211 which are found significant at 5 percent level. It is found that there is a significant difference between the internet addiction score and back pain. The mean value shows that the yes response (58.54) is higher than the no response those who get back pain. Therefore the null hypothesis stated, "There will not be any significant difference between internet addiction and back pain" is rejected.

It is also clear that when the eye irritations are taken into consideration there is a highly significant difference based on internet addiction scores. Those who use internet for a longer duration will suffer from eye irritation. The mean value shows that the yes response (59.13) is higher than the no response those who get eye irritation. So the null hypothesis stated, “there is no significant difference between eye irritation and internet addiction” is rejected.

Analysis of Internet Addiction Scores Based on Eating Habits

Internet addiction and eating habits are compared. Consumption of junk food and skipping food were considered as the major probing areas. The eating habits and the internet addition scores are statistically analyzed hereunder.

TABLE – 3 INTERNET ADDICTION BASED ON EATING HABITS

VARIABLES		No	MEAN	S.D	‘t’-value
Skip food	Yes response	115	61.21	11.19	4.93**
	No response	205	54.85	10.82	
Junk food consumption	Yes response	125	59.41	10.69	2.94**
	No response	195	55.68	11.56	

**** Significant at 0.01 Level**

Forget to eat and consuming junk foods were found to be common among the internet addict users. From the above table, we come to know that the calculated t- value 4.93 is highly significant. This means that there is a significant difference in the internet addiction of sample based on their eating habits. From the mean scores, it is clear that those who skip the meals are more addicted to internet. So the stated hypothesis” there is no significant difference in skip and internet addiction” is rejected.

From the above table, we come to know that the calculated t –value 2.94 is also highly significant. When the eating habit is taken into consideration consuming junk food have significant difference based on internet addiction. Hence the hypothesis framed “there is no significant difference in eating junk food and internet addiction” is rejected.

FINDINGS OF THE STUDY

1. There exists a high significant difference in internet addiction on the basis of gender. Male were found to have more internet addiction than female
2. There was a significant difference between back pain, eye irritation and internet addiction.
3. There was a significant difference in internet addiction on the basis of eating habits.

CONCLUSION

The internet is useful and accessible to all people in different parts of the world. However internet addiction has negative health, social, mental, and financial effects. For these reasons we need to consider the many negative impacts and fight to reduce internet addiction. It is described as the use of internet is increasing amounts of time in order to achieve satisfaction.

Teacher should explain to the student's merits and demerits of internet and judicious use of internet has to be inculcated.

REFERENCES

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Arlington, VA: American Psychiatric Publishing; 2013. p. 796
2. Daniel T, Shek L, Rachel C, Sun F, Lu YU. Neuroscience in the 21st Century from Basic to Clinical. 2nd ed. New York: Springer Science + Business Media LLC; 2013
3. Young KS, de Abreu CN. Internet Addiction: A Handbook and Guide to Evaluation and Treatment. New York: Wiley; 2010. p. 23
4. Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder *Cyber psychology and Behavior*, 1 (3), 237–244



PSYCHO-PHYSIOLOGICAL CHANGES TO YOGIC PRACTICES AMONG THE AGRICULTURAL STUDENTS

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ABSTRACT

The purpose of the study was to investigate the Psycho – Physiological changes to yogic practices among Agricultural students. For this research (N=30) students were selected from Tamil Nadu Agricultural University, Coimbatore in Tamil Nadu. The age group of the girls ranged from 17 to 19 years. To achieve the purpose of this study, the subject: were divided into two equal groups of 10 subjects each. Group I underwent yogasana. Group II acted as a control group. The duration of the experimental period for yogasana practices group was restricted to six weeks and the number of session per week confined to six days. It was concluded that there was significant reduction in anxiety , Personality, Resting pulse rates and Breath holding capacity due to yogic practices as compared to control group. It was concluded that there was significant improvement in study psycho – physiological changes to yogic practices as compared to control group. On the basis of the findings and conclusions of the present study, the following recommendations were made, Similar study may be conducted for various other age groups, The present study was mainly focused on College professional students only; Yoga may be included in other schemes of the government for the welfare society.

KEY WORDS: *Yogic Practices, Anxiety, Personality, Resting Pulse Rates And Breath Holding Capacity, Professional Students, Etc.*

INTRODUCTION

Sarvesham Swastir Bhawatu
Sarvesham Shantir Bhawatu
Sarvesham Purnam Bhawatu
Sarvesham Mangalam Bhawatu

May all being dwell in happiness, May all being dwell in peace, May all being attain oneness, May all being attain auspiciousness. As the modern life is full of stress and tension, people are realizing the need of relaxation and mental calm. From ancient times the sages have developed various systems of yoga which is practiced properly give rest to your mind and body and refresh them. Yoga is universally benefiting all the peoples of all ages. The study is fascinating to those with the philosophical mind as is defined as the silencing of the mind's activities which leads to complete realization of the intrinsic nature of the Supreme Being. It is a practical holistic philosophy designed to bring about profound state of well being is an integral subject. Which takes into consideration man as a whole? The word yoga is derived from 'Yuj' that means union of merger. The merger of soul with God and the experience of oneness with Him are meant by yoga. B.K.S. Iyengar states that, "Yoga is a timeless practice since over thousands of years dealing with physical mental and spiritual wellbeing of human society as whole."

Yoga has a long history, it is very ancient. Yoga involved in Indian continent over a period of 5000 years. It has its roots in the Hinduism and Brahmanism, yet our contemporary western approach of yoga has titled to do any particular belief of religion. However it can be said that contemporary western approach to yoga is only very small portion of what yoga is all about. Yoga is deep well of knowledge which helps quell our thrust for truth. Yoga content several branches of learning, which includes hath yoga, the physical branch of yoga, everyone in the west is familiar with. Ascetics living primarily in the southern portion of India developed yoga. These ascetics led much disciplined lives, they were vegetarians and they adhered to a non violent philosophy. They lived close to the earth; they observed nature, and the animals and themselves. The yoga is derived from Sanskrit, and it simply means 'to bind together' and 'to reunite' Over the time there has been a steady effort many great Indians seers to develop and perfect specific techniques which could unite the lower mind with the higher mind or with what they called universal cons piousness. Yoga is India's greatest gift to the world, and we here in the west have only recently come to know and appreciate its many wonders. Hinduism developed in India in the same historical period that yoga did and these two rich profound philosophies have had great influence on each other so that; until the beginning of 20th century all yogis were devout Hindu Priests. Then in the earliest part of the 20th century, Hindu yoga masters and swamis, travelled to the west in order to share their religious beliefs and practices, Yoga at this point was to undergo another profound changes, as it's light was about a filter through the prism of western existentialism and rational scientific materialism. These teachers brought a new spiritual awareness to the west. Our modern approaches to yoga have created a clear delineation between the Hindu religion and practice of yoga. Yoga as it has been developed in the west is largely concerned with physical exercise and health promoting breathing exercises of yoga. It has moved away from its original religiosity. Yoga as practiced in the west is largely on religious because the need of Americas the large culture of health and exercise which used it for its own purposes. The most popular form of yoga is being taught today are the combination of yogic exercises and breath control, these practices are known as Hath yoga. Many styles of yoga was evolved over the last century such as power yoga, Bikram

yoga, Iyengar yoga just to name a few, there are no more than styles of yoga these styles all vary in how much they still embody the Hindu faith and its symbols and ideologies. The styles are also quite different in structure as they range from being quite slow, and restorative, to some which offer most extreme forms of physical exercise you can find. Yoga is much more than exercise though and with time the deeper aspect of yoga is eventually touch western culture and change it forever as yoga itself will change it forever because of western culture influence. The yoga is the ultimate technique which produces a marvelous change in the life style. The criminal nature of the unsocial elements can be changed by yoga. The sentiment of dissatisfaction egotism, anger, greediness, attachment etc. are the root cause of crime, when a person being aware and conscious by yoga practice recognizes its basic nature and suffering gained by the ill statement then a change appears in his mind and he live a decent social life, Which is full of softness, piousness, friendliness and happiness

STATEMENT OF THE PROBLEM:

The problem of the present research to was stated as “Effect of Yogic Practices on the Selected Psycho- physiological variables of the prisoners”.

OBJECTIVES OF THE STUDY:

The main objectives of the study were formulated as follows:

- a) To find out the effect of yogic practices on the attitude, aggression, anxiety and Personality of the jail inmates.
- b) To find out the effect of yogic practices on the Blood Pressure, Pulse rate, Vital Capacity and Cardio Vascular Endurance of the jail inmates.

METHODOLOGY

The purpose of this study was to find out the psycho – physiological changes to yogic practices among Agricultural students Tamil Nadu Agricultural University, Coimbatore, and Tamil Nadu. The subjects for the study were randomly selected for the purpose of the study. The subjects were divided in two equal groups: Group A and Group B, Group A was Experimental, (N=15) and B was Control (N=15). The age of the subjects was ranging between 17 to 19 years.

Criterion Measure:

The data on selected psychological and physiological variables was collected by using following standard tools and techniques before starting the training programme and after training were utilized in collection of the data.

Psychological Criterion:

1. **Anxiety**– Comprehensive anxiety test (C.A.Test) of Dr. Harish Sharma, Dr. R.L. Bhardwaj and Dr. Mahesh Bhargav of Agra
2. **Personality**-16 PF test of Dr.Raymond Cattle, Hindi version prepared by Dr.S.D.Kapoor

Physiological Criterion

1. **Resting Pulse Rate** -- Manually through Radial artery
2. **Cardio vascular Endurance** -- Harvard Step Test

Statistical Measures:

The present study pre test – post test randomized control group design which consists of experimental group was used. The data was collected before and after six weeks of yogic practices. The data was analyzed by applying t-test technique to find out the psycho – physiological changes to yogic practices among Agricultural students. The level of significance was set at 0.05.

Computation of Analysis of Covariance

The results of analysis of covariance on data collected prior to and after the experimental period on variables among the yogic practices and control group presented in tables from 1 to 4.

TABLE – 1: MEAN, STANDARD DEVIATION, MEAN DIFFERENCE, AND T-VALUE OF EXPERIMENTAL GROUP

EXPERIMENTAL GROUP								
Group	Variables	Test	N	Mean	Sd	Std. error mean	T value	Sig.
Experimental group	Resting pulse rate	pre	15	74.42	3.761	1.133	8.867	0.00
		post	15	65.44	2.32	0.701		
	Breath holding capacity	pre	15	37.890	2.063	.622	7.790	
		post	15	45.124	2.567	.774		

*significant at 0.05 level of confidence

Table 1 shows the mean, SD, mean difference and t-values of experimental group. In this analysis mean value of experimental group: Resting pulse rates and Breath holding capacity were improved in the post test. This increase indicates the effect of yogic practice

TABLE-2: MEAN, STANDARD DEVIATION, MEAN DIFFERENCE, AND T-VALUE OF CONTROL GROUP.

Group	Variables	Test	N	Mean	Sd	Std. error mean	T value	Sig.
Control group	Resting pulse rate	pre	15	74.009	2.252	0.679	.693	0.54
		post	15	73.741	1.435	.432		
	Breath holding capacity	pre	15	37.29	2.309	0.693		
		post	15	37.24	2.216	.668	.201	.854

*significant at 0.05 level of confidence

Table 2 also shows the mean, SD, mean difference and t-values of the control group. In this analysis mean value of control group have no any changes in Resting pulse rate, Breath holding capacity were found.

TABLE – 3: MEAN, STANDARD DEVIATION, MEAN DIFFERENCE, AND T-VALUE OF EXPERIMENTAL GROUP

Group	Variables	Test	N	Mean	Sd	Std. error mean	T value
Experimental group	Anxiety	pre	15	59.23	17.37	1.133	8.84
		post	15	52.70	8.04	0.701	
	Personality	pre	15	61.47	13.74	.622	7.58
		post	15	47.03	9.71	.774	

*significant at 0.05 level of confidence

Table 3 shows the mean, SD, mean difference and t-values of experimental group. In this analysis mean value of experimental group: Anxiety and Personality were improved in the post test. This increase indicates the effect of yogic practice

TABLE-4: MEAN, STANDARD DEVIATION, MEAN DIFFERENCE, AND T-VALUE OF CONTROL GROUP

Group	Variables	Test	N	Mean	Sd	Std. error mean	T value
Control group	Anxiety	pre	15	70.09	3.52	1.679	.65
		post	15	75.70	1.735	.632	
	Personality	pre	15	36.39	2.809	0.613	.501
		post	15	37.41	2.71	.672	

*significant at 0.05 level of confidence

Table 4 showed the mean, SD, mean difference and t-values of the control group. In this analysis, mean value of control group has no changes in Anxiety and Personality were found.

CONCLUSION

Within the research sample and the available possibilities, the study revealed that yoga exercises have positive effect on the selected psycho – physiological variables (Resting pulse rates, Breath holding capacity, Anxiety and Personality). This effect may be attributed due to the participation in a yogic practices programme regularly, which declares that yoga exercises induce changes in psycho – physiological parameters. In view of the fact that psycho – physiological statistics on GGU, students are insufficient; the recent study might be useful for other sports also where the selected psycho – physiological variables play a vital role. The study of the physical fitness demands through sport activity helps in designing training programmes on a psycho – physiological foundation. Pranayama variables are considerable indicators of changes in psycho – physiological variables as a result of training. In conclusion, detecting the effects of yogic practices on psycho – physiological aspects adding new dimensions that can assist in evaluating, directing and developing yogic training programmes for athletic training and modern sports.

REFERENCES

1. Richardson, P. A and Latadn, L.M(1995) Therapeutic Imagery and Athletic Inhere Journal of Athletic Training. 30:10-12s.

2. Sheard, Michael and Golby, Jim (2006). Effect of a psychological skill training program on swimming performance and positive psychological development. *International Journal of Sport & Exercise Psychology*: Vol.4 Issue 2. p. 149-169 21p.
3. Vetr M, voksel R,(1989) *Psychology of the inhered athlete*. First edition. Chapping: JNATA:104-109,154.
4. Wainberg, B, S and Gould, N .(2007). The effects of a mental skills training package on gymnasium triathlon performance. *The Sports Psychologist*, 15, p. 127-141.
5. Weinberg, R. S., and Gould, D. (2007). *Introduction to psychological skills training*.
6. Weinberg, R,S and Gould, D .(1999).*Foundations of Exercise Psychology*. (Second Edition.) Champing, IL. Human Kinetics. Page:265-284
7. Ann marri&kripe‘brant‘ key. (1990) “Sport psychology and behavior “translated by Hassan mortazavi‘Tehran‘published by sazmantarbiatbadani‘I edition.



CHANGES IN CARDIO RESPIRATORY ENDURANCE AMONG SCHOOL BOYS DUE TO YOGIC PRACTICES

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ABSTRACT

The purpose of the study was to find out the changes in cardio respiratory endurance among school boys due to yogic practices. To achieve this purpose of the study, sixty boy's students studying in the different schools in Chennai were selected as subject at random. Their age ranged between the 15 to 18 years. The selected subjects were divided in two equal groups of thirty each namely yogic group and control group. Group I underwent yogic for five days per week for twelve weeks, whereas Group II acted as the control group who maintained their daily routine activities and no special training was given to them. The following variable namely cardio respiratory endurance was selected. Respiratory endurance was measured by using cooper's 9 minutes run/walk test at prior and immediately after the training period. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significant differences, if any between the groups. The .05 level of confidence was fixed to test the level of significance, which was considered as an appropriate. The results of study showed that there was a significant difference exists between yogic group and control group on cardio respiratory endurance. And also there was a significant improvement on cardio respiratory endurance due to yogic practices.

KEYWORDS: Cardio Respiratory Endurance, Yogi Practice, Cooper's 9 Minutes Run/Walk

INTRODUCTION

The Bhagavad-Gita it is said work along is your privilege never expects the fruits there but the fruits of action by your motive and never ceases to work in the name of the lord abandoning selfish desires. Be not affected by success or failure this equipoise is called yoga. According to lying yoga is the true union of our will with the will of god. By proper and regular yogic practices body becomes healthier and increase its resistance power to disease mind gets sharpened and concentrates and uses its ability for good things and thought becomes purified peaceful and becomes enjoyable and happy.

The body mind and thought will becomes unified and work for good things. Physical activity is an important ingredient in the quality of life becomes it increase energy and promotes physical, mental and psychological well being in addition to conferring worth habits. Physical inactivity is considerably more dangerous than Physical activity. A health person has been defined as an individual who is not obviously ill and whose physical and mental functions correspond to those of the average person in the same age group at the same period of time.

METHODOLOGY

The purpose of the study was to find out the changes in cardio respiratory endurance among college women due to yogic practices. To achieve this purpose of the study, sixty boys/students studying in the different schools in Chennai were selected as subject at random. Their age ranged between the 15 to 18 years. The selected subjects were divided in two equal groups of thirty each namely yogic practice group and control group. Group I underwent yogic practice for five days per week for twelve weeks, whereas Group II acted as the control group who maintained their daily routine activities and no special training was given to them. The following variable namely cardio respiratory endurance was selected. Respiratory endurance was measured by using Cooper's 9 minutes run/walk test at prior and immediately after the training period.

The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significant differences, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance, which was considered as appropriate. The analysis of covariance on cardio respiratory endurance of the pre and post test scores of yogic group and control group have been analyzed and presented in Table I.

TABLE I
ANALYSIS OF COVARIANCE ON CARDIO RESPIRATORY ENDURANCE FOR
YOGIC GROUP AND CONTROL GROUP

Test /Group		Cardio Respiratory Endurance	Control Group	Source of variance	Sum of Square	df	Mean Square	obtained 'F' Ratio
Pre Test	Mean	1645.00	1638.00	Between	490.00	1	490.00	0.21
	S.D	38.32	56.72	Within	89020.0	28	2342.63	
Post test	Mean	1981.00	1656.50	Between	1053002.50	1	1053002.50	260.79
	S.D	63.32	63.76	Within	153435.00	28	4037.76	
Adjust Post test	Mean			Between	1043455.27 152809.84	1	104355.27	252.65
	6.95 7.26	1980.71	1656.79	Within	152809.84	27	4120.00	

Significant at 05 level of confidence.(The table values required for significant at .05 level of confidence for 1 and 28 and 1 and 27 are 4.20 and 4.21 respectively).

The table I showed that the pre test mean values on yogic and control group were 1645.00 and 1638.00 respectively. And the obtained 'F' ratio of 0.21 for pretest which was less than the required table value 4.20 with df 1 and 28 at .05 level of confidence on cardio respiratory endurance. The post test mean values on cardio respiratory endurance for yogic group and control group were 1981.00 and 1656.50 respectively. And the obtained 'F' ratio of 260.79 for post test which was greater than the required table value 4.20 with df 1 and 28 at .05 level of confidence on cardio respiratory endurance. The adjusted post test mean values on cardio respiratory endurance for yogic group and control group were 1980.71 and 1656.79 respectively. the obtained 'F' ratio of 252.65 for adjusted post test which was greater than the required table value 4.21 with df 1 and 27 for significance at .05 level of confidence on cardio respiratory endurance. Hence, the results of the study showed that there was a significance differences exists between yogic group and control group on cardio respiratory endurance.

CONCLUSION

The results of study showed that there was a significant difference exists between yogic practice group and control group on cardio respiratory endurance. And also there was a significant improvement on cardio respiratory endurance due to yogic practice.

REFERENCE:

1. Fox and Mathews, The physiological Basis of Physical Education and the Athletics, (3rd End).
2. Garrote. M.L. Guidelines for yogic practice (Lonavala : Madhya publication, 1982)
3. Hewit, James, The complete yoga Book (London : Stanley Paul and co. Ltd., 1984).
4. Mvc Carthy, James, Yoga – The way Life (London : Rides and company, 1969).



EFFECT OF SIMPLIFIED KUNDALINI YOGA ON SELECTED PHYSIOLOGICAL VARIABLES AMONG WOMEN AT MENOPAUSE STAGE

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ABSTRACT

Women encounter a lot of fluctuations in the hormone levels starting from their puberty till the menopause. The menopausal symptoms affect them both physically and mentally. The study was made to explore how the Simplified Kundalini Yoga (SKY Yoga) helps to alleviate the physiological variables BMI and the Resting Pulse Rate. The hypothesis was that there would be significant differences in physiological variables due to the practice of simplified kundalini yoga. The research study was a true random group design with pre and post tests. 30 menopausal women in Chennai, in the age group of 45 to 55, were selected randomly and were assigned to experimental and control groups with 15 subjects each. The Simplified Kundalini Yoga practices that include simplified physical exercise, kayakalpa yoga and meditation were given in the training period of six weeks to the experimental group alone. The statistical technique ANCOVA was used to analyze the data. There was a significant difference between adjusted means of experimental and control groups. It was concluded that BMI and Resting Pulse Rate were significantly reduced due to the practice of Simplified Kundalini Yoga.

KEYWORDS: *Simplified Kundalini Yoga (SKY Yoga), menopause, BMI (Body Mass Index), Resting Pulse Rate, Kayakalpa Yoga, Meditation*

INTRODUCTION

“Women are more special than men as the whole human race is the divine gift granted by them to the society”, says Vethathiri Maharishi who designed the Simplified Kundalini Yoga. Womanhood which is considered as a boon becomes a curse when the symptoms of menopause affect the quality of life. The symptoms are caused due to the drastic change in hormone secretion. According to Dr. Marilyn Glenville, “Women’s health and wellbeing are somewhat dependent on the hormones because they take them on such a roller coaster ride for most of their lives”. One of the natural way to balance the hormone levels is yoga.

Menopause

The word Menopause takes its root from the Greek words, ‘Menos’ which means month and ‘pausos’ means an ending. Menopause can be explained in three stages. Pre-menopause represents the whole woman’s life from the first period to the last. Peri-menopause is the stage around the menopause that leads to the final period. Post-menopause is beyond the menopause.

Yoga and Menopause

The word Yoga means communion, harmony. The Indian philosophy views the human body as the embodiment of panchab hood has which means the five elements, viz. earth, water, fire, air and akash(energy particles). The postures and movements in SKY yoga regulate the blood, heat and air circulations in the body which in turn maintains the harmony between the physical body and the soul(the energy). The yoga leads to physical, mental and spiritual wellbeing. “Yoga supports a woman’s physical and spiritual journey through menopause”, says Suza Francina, a noted yoga trainer and the author of many yoga books.

OBJECTIVES OF THE STUDY

To find out whether there would be significant difference in the physiological variables due to the practice of SKY yoga among menopausal women.

Statement of the problem

The purpose of the study was to find out the effect of Simplified Kundalini Yoga on selected physiological variables among women at menopause stage.

Hypothesis

It was hypothesized that there would be significant difference in physiological variables due to the practice of Simplified Kundalini Yoga among women at menopause stage.

Limitations

Certain factors like diet, life style, heredity, body structure, medicine, environmental and climatic conditions were not considered.

Definition of the terms

BMI (Body Mass Index)

The World Health Organization (WHO) defined the body mass index as the standard for measuring the risks associated with overweight in adults. It is calculated using the formula,

$$\text{BMI} = \text{weight(kg)} / \text{square of the height(m)}$$

Resting Pulse Rate

The rate at which the heart beats measured to obtain a quick evaluation of a person's health.

Selection of subjects

Thirty menopausal women in the age group of 45 to 55 years, residing in Chennai were selected randomly. They were divided into two equal groups. Group 1, experimental group and Group 2, the control group.

Experimental design

The study adopted a true random group design with pre and post tests. Pre-test were conducted for all the 30 subjects on selected Physiological variables. The 6 weeks training programme was given to experimental group and control group underwent no training programme. At the end post test were conducted for both the groups.

Training Schedule**For 1st and 2nd weeks**

Sl.No	Name of Practices	No. of Times	Duration (Mins)
1	Prayer	1	3
2	Kayakalpa	2	6
3	Hand Exercise	5	5
4	Leg Exercise	5	5
5	Neuro-Muscular Breathing Exercise	5	7
6	Eye Exercise	5	5
7	Kapalapathi	3	5
8	Agna Meditation	1	20
9	Closing Prayer	1	3

For 3rd and 4th weeks

Sl.No	Name of Practices	No. of Times	Duration (Mins)
1	Prayer	1	3
2	Kayakalpa	2	6
3	Hand Exercise	5	5
4	Leg Exercise	5	5
5	Neuro-Muscular Breathing Exercise	5	10
6	Eye Exercise	5	5
7	Kapalapathi	3	5
8	Makarasana(Part A & B)	3	10
9	Shanthi Meditation	1	20
10	Closing Prayer	1	3

For 5th and 6th weeks

Sl.No	Name of Practices	No. of Times	Duration (Mins)
1	Prayer	1	3
2	Kayakalpa	2	6
3	Hand Exercise	5	5
4	Leg Exercise	5	5
5	Neuro-Muscular Breathing Exercise	5	10
6	Eye Exercise	5	5
7	Kapalapathi	3	5
8	Makarasana (Part A & B)	3	10
9	Message	1	5
10	Acu-Pressure	1	7
11	Relaxation	1	7
12	Thuriya Meditation	1	20
13	Closing Prayer	1	3

RESULTS AND DISCUSSIONS**Computation of Analysis of Co-Variance on BMI (scores in kg/m²)**

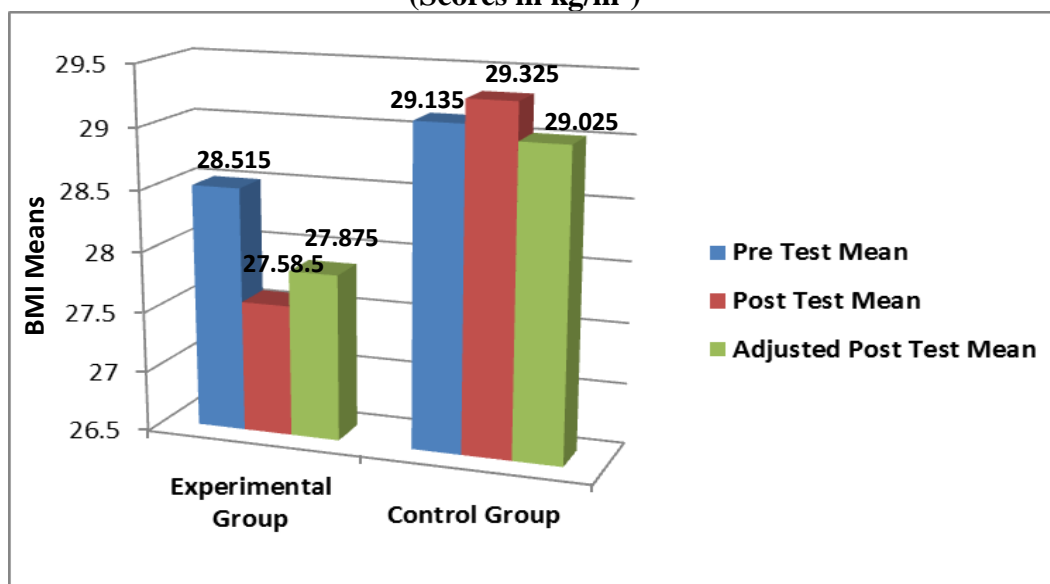
Test	Exp.Grp-I	Control Grp II	Source of Variance	Sum of Squares	df	Mean Sum of Square	'F' Ratio
Pre-Test Mean	28.51	29.13	Between within	2.93 147.39	1 28	2.93 5.26	1.80
Post-Test Mean	27.58	29.32	Between Within	22.67 139.12	1 28	22.69 4.97	4.57*
Adjusted Post Test Mean	27.87	29.02	Between Within	9.65 5.86	1 27	9.65 0.22	44.46*

*Significant

Table 'F' ration at 0.05 level of confidence for df (1,28) = 4.2 and for df(1,27) = 4.21

The above table shows that adjusted post means for experimental group and control group were 27.87 and 29.02 respectively. The difference among pre test scores post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and F values obtained were 1.80, 4.57 and 44.46 respectively. The multiple mean comparisons proved that there existed significant differences between the adjusted means of experimental group and control group.

**Bar Diagram On Ordered Pre Test, Post Test and Adjusted Means of BMI
(Scores in kg/m²)**



**COMPUTATION OF ANALYSIS OF CO-VARIANCE ON RESTING PULSE RATE (SCORES
IN BEATS/MIN)**

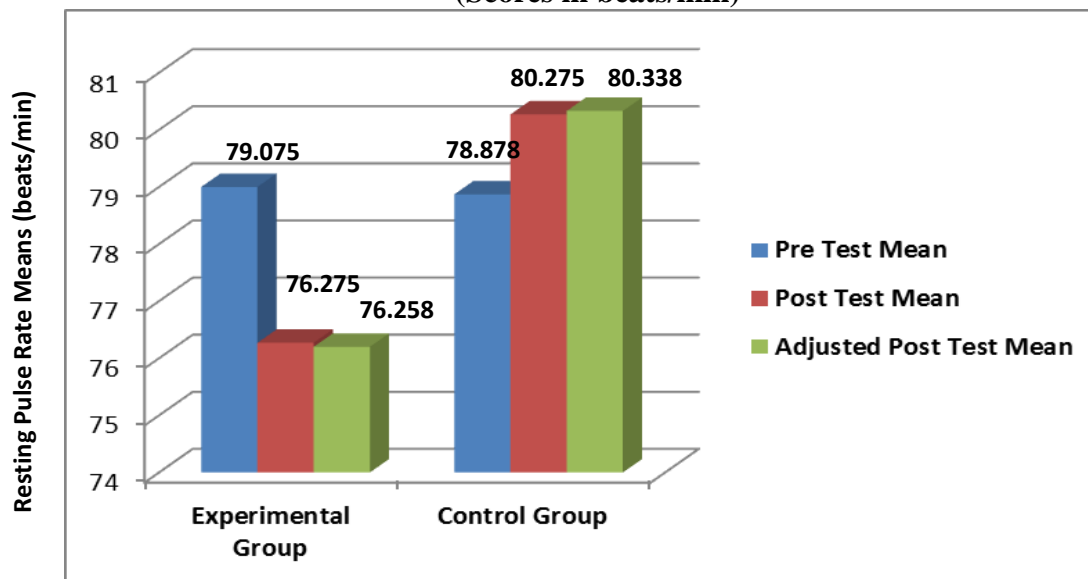
Test	Exp.Grp-I	Control Grp II	Source of Variance	Sum of Squares	df	Mean Sum of Square	'F' Ratio
Pre-Test Mean	79.00	78.87	Between within	0.13 791.73	1 28	0.13 28.28	0.005
Post-Test Mean	76.27	80.27	Between Within	120.00 767.87	1 28	120.00 27.42	4.38*
Adjusted Post Test Mean	76.20	80.33	Between Within	127.51 86.40	1 27	127.51 3.20	39.85*

*Significant

Table 'F' ration at 0.05 level of confidence for df (1,28) = 4.2 and for df(1,27) = 4.21

The above table shows that adjusted post means for experimental group and control group were 76.20 and 80.33 respectively. The difference among pre test scores post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and F values obtained were 0.005, 4.38 and 39.85 respectively. The multiple mean comparisons proved that there existed significant differences between the adjusted means of experimental group and control group.

Bar Diagram On Ordered Pre Test, Post Test and Adjusted Means of Resting Pulse Rate (Scores in beats/min)



CONCLUSIONS

Based on the results and limitations of the study, the conclusion drawn was that the physiological variables, BMI and resting pulse rate were significantly reduced due to the influence of six weeks practices of Simplified Kundalini Yoga.

BIBLIOGRAPHY

Books

Marilyn Glenville (2012) Natural Solutions to Menopause, Pal Macmillan, PP 10,11

SuzaFrancina (2003) Yoga and the Wisdom of Menopause, Health communications, Inc. Florida, USA, PP 25-37

ThathuvagnaniVethathiri Maharishi (1977). Simplified Physical Exercise (The World Community Service Centre, Vethathiri publications, 34th edition 2009) pp 3-28

Journals

Lee JA, et.al., (2012) "Effects of Yoga Exercises on serum adiponectin and metabolic syndrome factors in obese post menopause Women", Menopause, 19:3, PP 296-301.

Sulabha Joshi, et.al., (2011) "Effect of Yoga on Menopausal Symptoms", Obstetrics and Gynecology.



RELATIONSHIP OF COORDINATIVE ABILITY AND GOALKEEPING ABILITY AMONG COLLEGE LEVEL HANDBALL GOALKEEPERS

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ABSTRACT

The purpose of the study was to investigate the relationship of Coordinative ability and goalkeeping ability among college level handball goalkeepers. Twenty five handball goalkeepers the subjects selected were the students of the R B Gothi College for Women, Redhills and Arts & Science College Students. The necessary data for analyzing the relationship was collected by administering various coordinative ability tests as suggested by Peter Hirtz. Mainly five selected coordinative abilities namely Orientation ability, Reaction ability, Balance ability and Rhythm ability were taken for this study. Apart from coordinative abilities, a Goalkeeping ability test was also conducted by the scholar and according to the level of performance each player out of 25 subjects were assigned the scored out of 25. Further the data were analyzed to find out the significant relationship between these abilities and Goalkeeping performance. Co-efficient of correlation (Statistical Technique) was used employed to analyze the relationship and the level of significance was set at 0.05 levels for testing the hypothesis.

KEYWORDS: Orientation, Goalkeeping, Co-Efficient, Coordinative Abilities,

INTRODUCTION

HANDBALL

Handball is the one of the world's fastest games. It is played between two teams in which a ball is hit with the hand in a walled court. A team moves then ball by dribbling, passing or bouncing it as. They run players may stop, catch, throw, bounce or strike the ball with any part of body above the knees. Each team tries to score goals by directing the ball past the opposition's goalkeeper in to the net

The first record of ball games with the hand is from 2000 B.C in Egypt. Their priests of the temple of Osiris in Thebes were depicted on the tombs striking the ball with the hand. Such iconographic evidence is also found in America where ball games formed an integral part of pre-Hispanic culture. Over 700 ball court sites have been identified from Arizona to Nicaragua. Many having sculptures, bas-reliefs and painted vessels showing peoples engaged in hand played ball.

HISTORY OF HANDBALL

Handball was first originated in Europe around 1904. The Amateur Handball Federation was formed with eleven countries in 1928 and as Olympic committee was formed in 1936. The International Handball Federation was formed in 1946. Handball was included as a new Olympic event for men in 1972 at Munich and for women in 1976 at Montreal. Handball is basically a running sports and it can provide a large contribution to muscular endurance training. It requires skills common to other sports such as running, jumping, throwing and catching. To perform those skills in a precise manner, agility and coordination are much needed. The rules are simple and the activity level is high. It ranks as one of the fastest of team sports (Dale mood, 1983).

Games similar to modern team handball have historically been played in many different cultures around the world. We do for instance know that the ancient Greeks and Romans played a type of handball, and handball was also played by the Inuit in Greenland and the French in Europe as early as the Middle Ages. By the 19th century, handball was played in countries such as Ukraine (gandbol), Denmark (håndbold), Germany (torball), Slovakia (hádzaná) and Czech Republic (házená).

Team handball as we know it today developed in northern Europe by the end of the 1800s. It was especially popular in Sweden, Norway, Denmark and Germany during this period, and Denmark is widely recognized as the birthplace of modern handball. The rules for modern handball was drawn up by Danish gym teacher Holger Nielsen in 1898 and published in 1906. Rasmus Nicolai, also a Danish teacher, drew up similar rules in 1897.

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the relationship of Coordinative ability and goalkeeping ability among college level handball goalkeepers.

HYPOTHESIS

1. It is hypothesized that there would be a significant difference in relationship of Coordinative ability and goalkeeping ability among college level handball goalkeepers.

2. On the basis of available literature and scholar own understanding of the problem it was hypotheses was that there would be significant relationship of selected coordinative.

METHODOLOGY

The purpose of study was to analysis the coordinative abilities and playing ability in handball goalkeeper among college level handball players. The investigator was motivated to analyze relationship of coordinative ability and goalkeeping ability in handball goalkeepers.

The study is conducted on 25 handball goal keepers inter college level men. The age group between 20 to 25 years. The subject's height and weight not taken in to consideration. Subjects are normal and health without any physical and mental disabilities. The subjects of R B Gothi Jain College for Women, Redhills and Arts & Science Studnets.

RESULTS AND DISCUSSION

Table – I
SHOWING RESULT ON RELATIONSHIP BETWEEN COORDINATIVE ABILITY
AND GOALKEEPING ABILITY IN HANDBALL

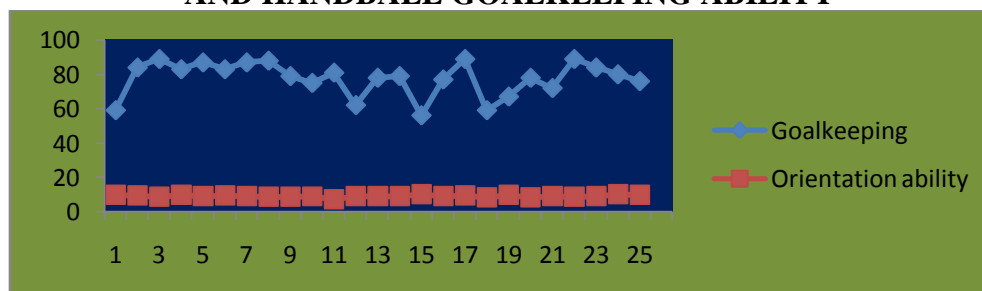
S.NO	VARIABLES	Mean	Standard Deviation	R (value)
1	Orientation ability	4.56	4.58	0.97
2	Balance ability	3.03	3.07	0.97
3	Rhythm ability	8.76	8.77	0.98
4	Reaction ability	0.61	0.63	0.96

***Significant at 0.05 level**

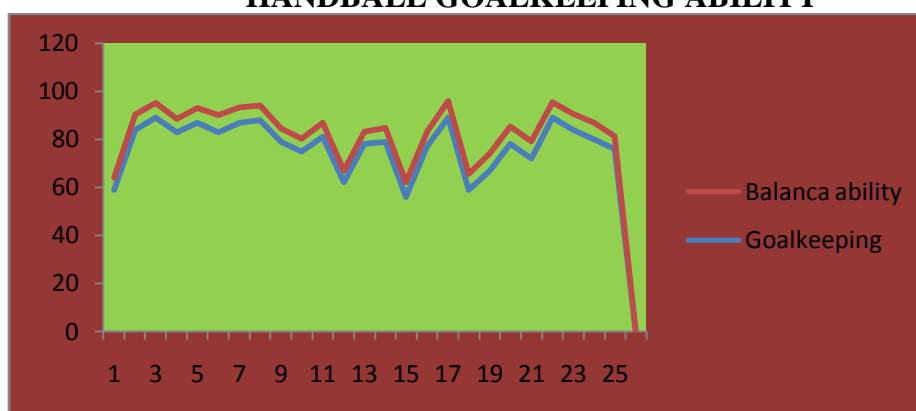
The result of the study showed that there was a significant relationship of Handball Goalkeeping ability with coordinative abilities. So the research hypothesis was accepted for orientation ability, balance ability, reaction ability.

Table- I show that the means values of Orientation was 4.56 with standard deviation 4.58. The mean value of Balance ability was 3.03 with standard deviation 3.07. The mean value of Rhythm ability was 8.76 with standard deviation 8.77. The mean value of reaction ability 0.61 with standard deviation 0.63. The mean value of goalkeeping ability was 19.37 with standard deviation 2.02.

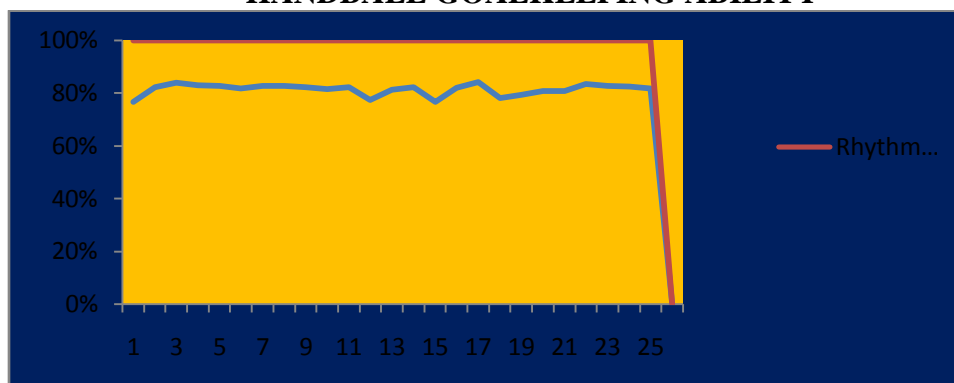
SHOWING PEARSON COORILATION BETWEEN ORIENTATION ABILITY
AND HANDBALL GOALKEEPING ABILITY



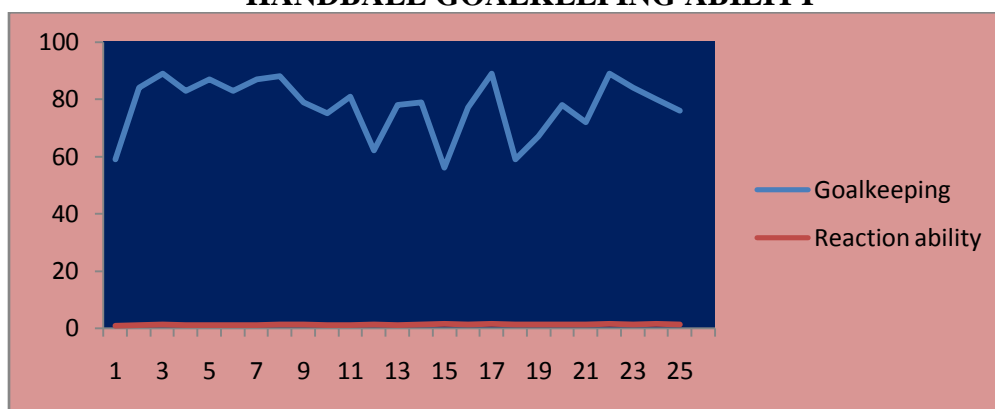
SHOWING PEARSON COORILATION BETWEEN BALANCE ABILITY AND HANDBALL GOALKEEPING ABILITY



SHOWING PEARSON COORILATION BETWEEN RHYTHM ABILITY AND HANDBALL GOALKEEPING ABILITY



SHOWING PEARSON COORILATION BETWEEN REACTION ABILITY AND HANDBALL GOALKEEPING ABILITY



CONCLUSION

On the basis of result obtained from the study, following conclusion was drawn:

1. It was concluded that there was a significant relationship between Orientation ability and Goalkeeping ability in Handball.
2. It was concluded that there was a significant relationship between Balance ability and

Goalkeeping ability in Handball.

3. It was concluded that there was a significant relationship between Reaction ability and Goalkeeping ability in Handball..

4. It was concluded that there was significant relationship between Rhythm ability and Goalkeeping ability in Handball.

This study also indicated that development of different selected Coordinative abilities may consider as an essential factor to achieve the best Goalkeeping ability by Handball players.

REFERENCE

Peter Hirtz, (1985) “**Coordinative fahigkeiten in schulspor** (Berliln: volk and Wissen, Volkseingerverlag)”,33

Gangopadhyay, S.R (1993). **Physical Education Today and Tomorrow**. Delhil: Friends publication.

Uppal, A.K.(1992) **Physical Fitness**, Delhi: Friends Publication



EFFECT OF SKILLS TRAINING WITH AND WITHOUT YOGIC PRACTICES ON FLEXIBILITY AMONG YOUTH MALE HANDBALL PLAYERS

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ABSTRACT

The purpose of the study was to investigate the effect of skills training with and without yogic practices on flexibility among youth male handball players. Forty five youth male handball players were selected from Kanchipuram District, and their age ranged between 16 to 19 years. The subjects were divided into three groups consists of 15, each namely two experimental groups and one control group. The experimental group-I underwent a skills training programme and experimental group-II underwent skills training with yogic practices for twelve weeks training programme. The control group was not taking any part of training during the course of the study. Flexibility was assessed by sit & reach test and unit of measurement in centimeters. Pre-test was taken before the training period and post-test was measured immediately after the twelve weeks of training period. Statistical technique was used for Analysis of Co-Variance (ANCOVA) and the level of significance was set at 0.05. Scheffe's test was used as a post hoc test to determine which of the paired mean differ significantly. The results revealed that there was a significant difference found on flexibility.

KEYWORDS: Skills Training, Skills Training With Yogic Practices And flexibility.

INTRODUCTION

Sports performance is complex mixture of genetic make-up and environment influences like training etc. Performance in handball is determined by several factors namely skill, technique, tactics, fitness, training etc. Sports' training is the physical, technical, intellectual, psychological and moral preparation of an athlete by means of physical exercise. The main aim of training is to prepare the handballers for outstanding performance in competition. Physical fitness is the sum of numerous factors, which can vary from individual to individual. Different sports required different type of fitness emphasizing on a particular fitness factors. Similarly the training varied sports discipline to sports discipline. Skills training is a highly co-ordinate and well planned exercise. Generally in military this type of training is very common. In modern sports training the game-specific skills' training is gaining tremendous popularity, which focus on game-specific fitness as well as performance related skill factors.

Yoga is a physical, mental and spiritual discipline, originating in ancient India. The goal of yoga or of the person practicing yoga is the attainment of a state of perfect spiritual insight and tranquility while meditating on the super soul. Yoga is a system that benefits body, mind and spirit by teaching self control through series of postures and exercises as well as through breathing and relaxation and meditation techniques. The most important benefit of yoga is physical and mental therapy. By keeping the body clean, flexible and well lubricated, we can significantly reduce the catabolic process of cell deterioration. To get the maximum benefits of yoga one has to combine the practices of yogasanas, pranayama and meditation.

In the game of handball the team tries to put the ball in the opponent's goal. In doing so, each player must be able to catch, pass and dribble the ball. Handball is not a game where one plays hard and the rest of them look on. The success or lack of it depends on every player's running jumping, receiving and passing the ball and tackling the opponent. The opponent wants to fight for the ball i.e. The attacks the player in possession of the ball, fights for ball, uses his body, stops the ball or tries to get it from the hand of the opponent. Handball requires stamina, strength, speed and agility. General athleticism in every form plays a particularly important role; it is a pre-requisite for skills and tactical performance. In the training, choose exercises which contain one or more athletic elements.

OBJECTIVE OF THE STUDY

The objective of this study was to find out the effect of skills training with and without yogic practices on flexibility for twelve weeks among youth male handball players.

METHODOLOGY

To achieve this purpose of the study forty five youth male handball players were selected from Kanchipuram district, Tamilnadu and their age ranged from 16 to 19 years. The subjects were randomly assigned into three groups of 15 subjects each and namely such as experimental groups-II and control group - I. The group-I underwent a skills training, group-II underwent skills training with yogic practices and group-III acted as control group and did not undergo any special training program. The training was given to the experimental groups for twelve weeks, per week three days. The independent variables are skills training and skills training with yogic practices. The dependent variable was flexibility. Flexibility was assessed by sit & reach test and unit of measurement in centimeters. The data has collected before and after twelve weeks of training period and statistically analyzed by using Analysis of Co-Variance (ANCOVA).

Scheffe's test has used as a post hoc test to determine which of the paired mean differ significantly. All the statistical analysis tests were computed significance at 0.05 level of confidence.

RESULTS

TABLE I
ANALYSIS OF CO-VARIANCE FOR THE PRE, POST AND ADJUSTED POST-TEST
MEAN VALUES FOR EXPERIMENTAL GROUPS AND CONTROL GROUPS
ON FLEXIBILITY

Means	Experimenta l Group-I (Skills Training)	Experimenta l Group-II (Skills With Yoga)	Contro l Group	Source of Varianc e	Sum of Squar e	df	Mean Squar e	'F' ratio	Table Valu e
Pre Test	18.27	18.20	18.13	Between	0.133	2	0.067	0.10	3.22
SD±	0.798	0.861	0.743	With in	27.067	42	0.644		
PostTest	20.67	21.27	18.07	Between	86.800	2	43.40	51.78*	3.22
SD±	0.899	0.099	0.703	With in	35.200	42	0.838		
Adjuste d Post Test	20.67	21.27	18.07	Between	86.475	2	43.238	50.37*	3.23
				With in	35.194	41	0.858		

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 & 42 and 2 & 41 are 3.22 and 3.23 respectively).

The table - I shows that the pre-test mean values on flexibility of skills raining group, skills training with yogic practice group and control group are 18.27, 18.20 and 18.13 respectively. The obtained 'F' ratio 0.10 for pre-test scores was less than the table value 3.22 for df 2 and 42 required for significance at 0.05 level of confidence on flexibility. The post-test mean values on flexibilityof skills training group, skills training with yogic practice group and control group are 20.67, 21.27 and 18.07 respectively. The obtained 'F' ratio 51.78 for post-test scores was greater than the table value 3.22 for df 2 and 42 required for significance at 0.05 level of confidence on flexibility. The adjusted post-test means of skills training group, skills training with yogic practice group and control group are 20.67, 21.27 and 18.07respectively. The obtained 'F' ratio of 50.37 for adjusted post-test means was greater than the table value of 3.23 for df 2 and 41 required for significance at 0.05 level of confidence on flexibility. The results of the study indicated that there was a significant difference among the adjusted post-test means of skills training group, skills training with yogic practices group and control group on flexibility.

Since the obtained 'F' ratio value was significant further to find out the paired mean difference, the Scheffe's test was employed and presented in table- II

TABLE-II
THE SCHEFFE'S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON FLEXIBILITY

Experimental Group-I (Skills Training Group)	Experimental Group-II (Skills Training with Yogic practices Group)	Control Group	MD	CI
20.67	-	18.07	2.60*	0.86
-	21.27	18.07	3.20*	
20.67	21.27	-	0.60	

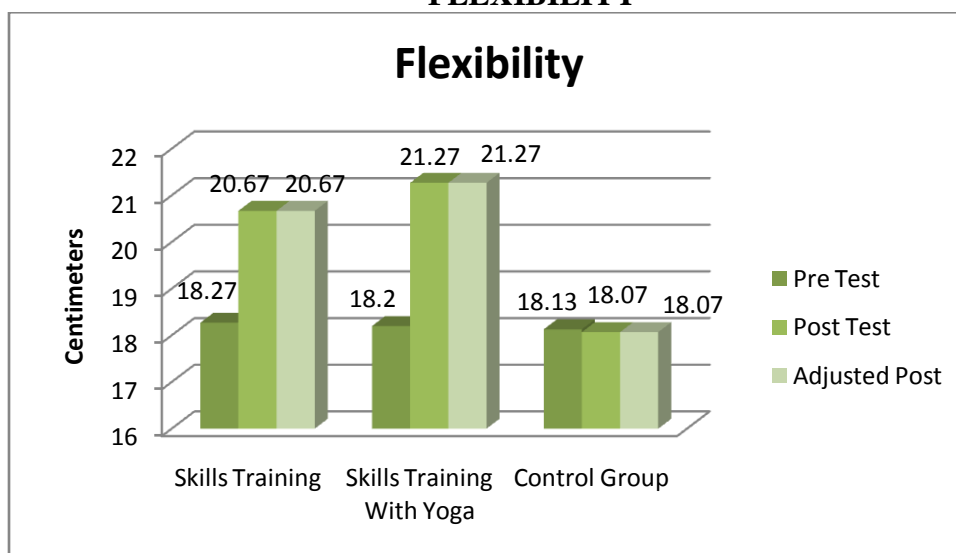
*Significance of .05 level of confidence, Scheffe's C.I value of flexibility was 0.86.

The table-II shows that the adjusted post-test mean difference in flexibility between skills training group and control group is 2.60 it was significant at 0.05 level of confidence and proved there was a significant improvement. Skills' training with yogic practices and control group is 3.20 it was significant at 0.05 level of confidence. However, the mean difference between the two experimental groups was 0.60 which was not significant at 0.05 level of confidence.

It may be concluded from the results that there was no significant difference between adjusted post means of skills training group and skills training with yogic practices group. Statistically significant difference existed between the skills training with yogic practices group and control group. The result of the study showed that there was a significant difference between skills training group and control group on flexibility.

The pre test, post test and adjusted post mean values of skills training group, skills training with yogic practices group and control group on flexibility are graphically represented in the Figure-1.

Figure I
BAR DIAGRAM FOR SHOWING THE PRE, POST AND ADJUSTED MEAN VALUE OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON FLEXIBILITY



DISCUSSION ON FINDINGS

The goal of the investigation is to find whether there is any effect on flexibility in the effect of skills training with and without yogic practices and further to find improvement on training group. The obtained 'F' ratio showed that there was significant difference between experimental group -I, experimental group-II and control group in performance of flexibility. The skills training with and without yogic practice group had shown a significant improvement on flexibility among youth male handball players.

CONCLUSIONS

1. The experimental groups namely skills training and skills training with yogic practices groups had significantly improved on flexibility. The control group did not show any significant improvement on flexibility because they were not exposed to any special training.
2. A significant improvement between experimental groups and control group on flexibility.
3. The results show there is a significance difference between the experimental groups in the selected dependent variables and the skills training with yogic practices method outperformed the skills training method on flexibility.

REFERENCES:

- Gorostiaga, E. M., Granados, C. R. I. S. T. I. N. A., Ibanez, J. A. V. I. E. R., Gonzalez-Badillo, J. J., & Izquierdo, M. I. K. E. L. (2006). Effects of an entire season on physical fitness changes in elite male handball players. *Medicine and science in sports and exercise*, 38(2), 357.
- Hermassi, S., Chelly, M. S., Tabka, Z., Shephard, R. J., & Chamari, K. (2011). Effects of 8-week in-season upper and lower limb heavy resistance training on the peak power, throwing velocity, and sprint performance of elite male handball players. *The Journal of Strength & Conditioning Research*, 25(9), 2424-2433.
- Memmert, D., & Roth, K. (2007). The effects of non-specific and specific concepts on tactical creativity in team ball sports. *Journal of Sports Sciences*, 25(12), 1423-1432.
- Parimalam and Pushparajan, (2012) Effect of specific basketball training program on physical fitness and skill performance variables of inter collegiate women basketball players, *IJALS*, Volume (6) Issue (1) Feb - 2013. RESEARCH ARTICLE, ISSN 2277 – 758X



VARIATIONS IN BODY COMPOSITION AT DIFFERENT PHASES OF MENSTRUAL CYCLE AMONG SPORTSWOMEN

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ABSTRACT

Understanding about the menstrual cycle (MC) and its physiological mechanism is of great importance to the comprehension on the many biological alterations which occur at each new cycle. The aim of this study is to find out the variations in body composition at different phases of MC among sportswomen. 60 sportswomen from different games and athletes from Andhra Pradesh in the age group of 22 - 25 years were selected and measured of their height and weight on normal day which formed initial scores and on 3rd, 9th, 14th and 21st day of menstrual cycle which formed menstruation phase (MP), follicular phase (FP), ovulation phase (OP) and luteal phase (LP) scores respectively. Body Mass Index (BMI) of the subjects were determined based on the collected data. To test statistically significance of differences in means repeated ANOVA was used. The obtained BMI values of different phases of menstrual cycle proved that from the mean value of 24.86 at the initial stage of the sports women decreased slowly with mean values of 24.85 at MP, 24.80 at FP, 24.79 at OP and 24.72 at LP. These differences were tested for significance and the obtained F value of 25.21 was significant ($P < 0.05$). The post hoc analysis proved that comparing with initial level BMI, different phases of menstrual cycle has significant decrease in BMI. The paired mean comparisons further proved that the decrease was significant from one phase to another. Thus, the results of this study proved that among sports women there was decrease in weight which caused reduction of BMI. Thus, it was concluded that slight decrease in body weight recorded in the menstrual cycle phases resulted in reduction of BMI among sportswomen.

KEYWORDS: Menstruation, Sportswomen, Comparisons

INTRODUCTION

By nature, a woman's body is developed to protect her and a potential fetus. As a result, women have more body fat than men, that is, about five percent more. Thus, women have more enzymes for storing fat and fewer enzymes for burning fat. Additionally, the estrogen women have activates fat storing enzymes and causes them to multiply. Women experience more changes in hydration levels than men because of their menstrual cycle, and this can affect body fat. And retaining fluid may also cause weight to fluctuate day-to-day during this period causing additional variation in the body fat percentage. **(Tanita Corporation, 2016)**

Understanding about the menstrual cycle (MC) and its physiological mechanism is of great importance to the comprehension on the many biological alterations which occur at each new cycle are being investigated by different researchers specially how it reflect on women's body. Such alterations depend on the integrity and suitable action of the neuroendocrine system which, by the activity of its hormones, is responsible for these alterations **(Guyton and Hall 1999)**. According to Nativ et al. **(2007)** the normal MC varies from 21 to 35 days, with mean of 28 days, and can be divided in three distinct phases: follicular, ovulatory and luteal. The follicular phase is characterized by low levels of estradiol and progesterone, which make that the uterine filling degenerates and comes off during menstruation, marking the first day of the MC. Increase in the luteinizing and follicle-stimulating hormone levels signal the beginning of the ovulatory phase, in which the estradiol level reaches its peak and progesterone increases. In the luteal phase the luteinizing and follicle-stimulating hormones decrease, the follicle closes after releasing from the ovule and makes the luteal body, which segregates progesterone **(Janse de Jonge (2003))**. If the ovule is not fertilized, the luteal body degenerates and stops producing progesterone, the estradiol level decreases and a new MC begin **(Guyton and Hall 1999)**.

Ellard et.al. (1991) determined the effects of a normal menstrual cycle on body weight, percentage body fat (% fat by hydrostatic weighing) and other variables among 20 regularly menstruating (23- to 35-d cycles) subjects (aged 20–30 years) on days 1, 7, 14, 21 and 28 after the onset of menstrual flow. Repeated-measures analysis of variance indicated no significant differences for any measured parameter between the 5 assigned days. Therefore, body composition in this age group was not affected by normal menstruation. Gleichauf CN, Roe DA (1989). examined the reliability of resistance (R) and body composition estimates in 25 women during their menstrual cycle. Significant differences were observed between phases 1 and 2 for R (p less than 0.001), weight (p less than 0.05), and fat-free mass (p less than 0.05) and differences were observed between phases 2 and 4 for R (p less than 0.05) and weight (p less than 0.05); no significant differences were observed for percent body fat. Changes in body weight (p less than 0.001) associated with Na intake explained a significant proportion of error in resistance measures.

Thus, the theoretical foundations based on previous researches proved that there were changes in body composition due to menstrual cycle, however researches differed whether these changes were significant or not. Hence, further research in this area is needed to find out the variations in body composition among sports women during menstrual cycle.

METHODOLOGY

The subjects for this study were 60 sportswomen from different games and athletes from Andhra Pradesh. The age of the subjects ranged between 22 - 25 years. The subjects were selected on random basis. The subjects' menstrual cycles are counted from the first day of menstrual flow,

because the onset of menstruation corresponds closely with the hormonal cycle. Subjects tested for their body composition through Body Mass index, which was determined by weight in kilograms and height squared in centimeters. Thus data of initial stage, that is, a day before the first day of menstrual flow and 3rd day, 9th day, 14th day and 21st day which are considered as menstrual phase (PM), follicular phase (FP), Ovulation phase (OP) and Luteal phase (LP) scores. The collected data was subjected to statistical treatment using repeated ANOVA. When significant F ratio was obtained, the results were further subjected to post hoc analysis using Scheffe's confidence interval test. In all cases 0.05 level was fixed to test the hypothesis of this study.

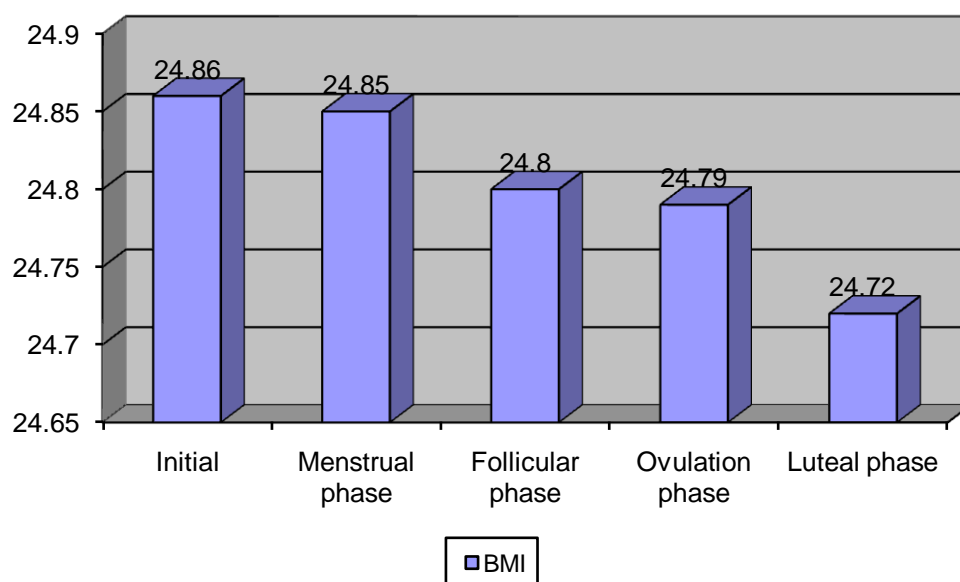
RESULTS

The influence of menstrual cycle on body mass index of the sports women, the mean, standard deviation and the range are presented in Table I.

Tab I: Body Mass Index Mean, Standard Deviation and Range during Menstrual cycle compared with initial scores

Menstrual Phases	Mean	SD	Range	
			Min	Max
Initial	24.86	± 2.96	19.88	34.19
Menstrual phase	24.85	± 2.93	19.88	34.11
Follicular phase	24.80	± 2.93	19.83	33.99
Ovulation phase	24.79	± 2.93	19.80	34.11
Luteal phase	24.72	± 2.93	19.80	34.07

Results presented in Table I shows that there was differences due to menstrual cycle phases. The variation on menstrual cycle of sportswomen's body mass index is presented through figure I.



Statistical significance of the differences was tested through repeated ANOVA and results presented in Table II.

Tab II: Repeated ANOVA results Influence of Menstrual Cycle on Body Mass Index of Sportswomen

Source	SS	df	MS	F
Subjects	2540.60	70		25.21*
Trials	0.73	4	0.18	
Residual	2.18	300	0.01	
Total	2542.05	374		

* Significant

Since significant F value of 25.21 was obtained, the results were subjected to post hoc analysis using Scheffe's confidence interval test and the multiple comparisons of paired means presented in Table III.

Tab III: Post Hoc Analysis of Multiple Comparisons of Paired Means on BMI

Initial	Menstrual Phase	Follicular phase	Ovulation Phase	Luteal phase	MD	Reqd C.I
24.86	24.85				0.009	0.049
24.86		24.80			0.062*	0.049
24.86			24.79		0.068*	0.049
24.86				24.72	0.138	0.049
	24.85	24.80			0.053*	0.049
	24.85		24.79		0.058*	0.049
	24.85			24.72	0.129	0.049
		24.80	24.79		0.006	0.049
		24.80		24.72	0.076*	0.049
			24.79	24.72	0.070*	0.049

* Significant

DISCUSSIONS ON FINDINGS

Regulatory hormones, body temperature and other physiological mechanisms fluctuates during the menstrual cycle including changes in weight. In this study, the variations of body mass index during menstrual cycles among sportswomen were studied. The mean values presented in Table I of different phases of menstrual cycle proved that there exists difference in body mass index of the sportswomen. From the BMI mean value of 24.86 at the initial stage, of the sports women decreased slowly with mean values of 24.85 at menstrual phase, 24.80 at follicular phase, 24.79 at ovulation phase and 24.72 at luteal phase. These differences were tested for significance and

the obtained F value of 25.21 was significant ($P < 0.05$). The post hoc analysis proved that comparing with initial level BMI, different phases of menstrual cycle has significant decrease in BMI. The paired mean comparisons further proved that the decrease was significant from one phase to another. Thus, the results of this study proved that among sports women there was decrease in weight which caused reduction of BMI. **Ellard et.al. (1991)** found that there was slight increase in body weight due to menstrual cycle. But this study proved that there was slight decrease in body weight among sports women. This may be because of the fact they sports women might have participated in regular physical activities which might have caused for reduction in BMI. Thus, the findings of this study was not in agreement with the findings of **Ellard et. Al (1991)**, however concurred with the findings of **Gleichauf CN, Roe DA (1989)** who found decrease in body weight due to menstrual cycle.

CONCLUSION

It was concluded that the low level decrease in body weight recorded in the menstrual cycle phases resulted in reduction of BMI among sportswomen.

REFERENCES

- Ellard, C.O., Thompson W.R., and Burks S (1991), "Effects of Menstrual Cycle on Body Composition", **Scandinavian Journal of Medicine & Science in Sports**, 1: 3, 147-150.
- Gleichauf CN, Roe DA (1989), "The menstrual cycle's effect on the reliability of bioimpedance measurements for assessing body composition.", **American Journal of Clinical Nutrition**. Nov;50(5):903-7.
- Guyton AC, Hall JE. (1999) **Fisiologia humane mecanismo das doenças**. Rio de Janeiro; Guanabara Koogan.
- Janse de Jonge XAK. (2003) "Effects of the menstrual cycle on exercise performance." **Sports Medicine** 33:833-51.
- Nattiv A, Loucks AB, Manore MM, Sanborn CF, Sundgot-Borgen J, Warren MP. (2007) "American College of Sports Medicine - Position Stand. The female athlete triad." **Medical Science Sports Exercise** 39:1867-82.
- Tanita Corporation, "Women and Body Fat" <http://www.tanita.com/es/messageforwomen/> retrieved on 25.2.2016.



EFFECT OF VISUAL EXERCISE PROTOCOL ON SOME VISUAL ABILITIES AND LEVEL OF RELATED SKILL PERFORMANCE IN YOUNG HANDBALL PLAYERS

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ABSTRACT

Every sport requires some visual skills that are critical elements to most sports performance. A considerable debate has been taken place for the concerned role of vision in sports performance, but it is the training of those specific skills that influence to strengthen specific visual abilities resulting in actually improved performance. The aim of present study was aimed to identify the influence of visual exercise protocol on select visual abilities and related skill performances among young handball players. Participants of this research were the students of physical education of Annamalai University. The sample consisted of 24 young handball players under 25 age (22.14 ± 1.99 years old; 174.69 ± 4.66 cm height; and 64.84 ± 5.07 kg weight). The selected participants in this visual exercise protocol courses for 8 weeks (5 days per week) and control group continued their daily routine activities during the exercise. Student's t-test for independent samples was used to determine the differences in vision parameters between the two groups. The $p < 0.05$ was considered as statistically significant. The results showed that there was a significant difference between the experimental Group and control group in the post-test of the skill variables. The visual exercises protocol increases motor skills, visual perceptual skills and reading skills in young handball players and it also showed that the control group was weaker than the experimental group.

KEYWORDS: Visual Training, Vision Functions, Handball

INTRODUCTION

One of the extreme advantages that each player can have in sport competitions is the effective vision skills [1]. Eventually, the emergence of vision system makes all body systems are coordinated and the athletic has a particular and efficient performance. One of the subjects that recently have drawn the attention of the researcher is "sport vision". Sport vision meant a set of methods and techniques that are used for the betterment of vision system function with the purpose of the improved sport performance[2].

Visual training in the sports ground is a relatively to sports performance system. Recently, it has been taken into interest majorly, actively and increasingly(3).Sports scientists and trainers have constantly been looking for modern training methods on purpose to improve visual training and physical performance is one of eye exercise for improving the main visual functions that are important for athletes in most of the competitive sports (4). It has been suggested that 95% of all physical movement is controlled visually and that this is the trigger mechanism for the first movement of the athlete. (5,6).

Concentration, coordination, precision and balance are considered as the needed skills for every sport event and some researchers believes that they are better by vision practices, because they showed that vision system reacts well to overload in vision practices [1] and also we can make better the conceptual components of vision system through sport vision practices. The effects of vision practices on reaction time, adaption, conception of depth, Saccade movements of eye and also the skill performance have been surveyed. The results of this research show an appropriate improvement in vision characteristics and skill performance of the experimental group. But about the control group, similar findings have not been observed [7,8,9,10,11].

Visual effects can be studied through in two main specific keys those are internal effects of eye that means the strength and efficiency of vision and the considerable components of the inner eye used in the medical field and the external effects that is improving all things related to sports field that is improving fixed and mobile visual precision, visual concentration and external awareness used greatly in the sports field that brings about more results than expected (12).

Some researchers have proved that the inefficacy of vision practices in the improvement of skill performance and vision skills[13,14,15]. After studying the mentioned researches, we can understand that there is some confusion between the efficiency and inefficiency of vision practices with the physical practices. Every sport needs a set of visual skills that are critical elements to so many sports performance and it is the training of these specific skills that influence to strong specific visual abilities leading to actual better performance [16].

An athlete with a visual difficulty should visit an optometrist, but sports vision is about much more than the standard sight test. With sports vision, the entire visual system comes into consideration.

Hence, the present study is an effort to assess the impacts of the visual exercise protocol on visualabilities and skill level performance among young handball players.

METHODOLOGY

Two groups (experimental and control) performed pre and post – training designed intervention in which Eye-hand coordination (EHC) , Eye-foot coordination (EFC) ,visual acuity (VA) , visual reaction time (VRT), Visual Tracking (VT) from different distances (10cm , 20cm and

30cm), and Performance level of shooting skill (PLSS) were recorded. The experimental group (EG) (12 young handball players) trained 1 hour per day 2 times a week on visual exercise training besides the handball drills for eight weeks. The control group (12 handball players) continued their normal training (handball drills). While the experimental group completed a visual exercise training program to see whether this type of training modality would have a positive or negative or no effect on (EHC), (EFC), (VA), (VRT), (VT) and (PLSS).

Samples 24 young handball players under 23 age (15.89 ± 1.36 years old; 175.16 ± 6.06 cm height; and 71.47 ± 5.51 kg weight), training experience of all the participants ranged from 4 to 5 years. Subjects and coaches were required to read and complete a health questionnaire and informed consent document; there was no history of injuries, diabetes or recent surgery

Training protocol

The 8-weeks in-season exercise training program consisted of 4-types and levels of exercises:

- ☐ Level 1: Head Positioning Exercises
- ☐ Level 2: Dynamic Visual Acuity Exercises
- ☐ Level 3: Peripheral Vision Exercises
- ☐ Level 4: EyeHand Coordination Exercises

Testing procedures

Subjects were assessed before and after 8-weeks of visual exercise training program all measurements were taken one week before and after training at the same time of day. Tests followed a general warm-up that consisted of running, calisthenics, and stretching.

Following are the variables for the trial of visual abilities and skill level performance.

- Eye-hand coordination (EHC)
- Eye-foot coordination (EFC)
- Visual acuity (VA)
- Visual reaction time (VRT)
- Visual Tracking (VT)

Statistical analysis

Statistical analyses were calculated by the SPSS statistical package. The results are reported as means and standard deviations (SD). Differences between two groups were reported as mean difference $\pm 95\%$ confidence intervals. Student's t-test for independent samples was used to determine the differences in vision parameters between the two groups. The $p < 0.05$ was considered as statistically significant.

RESULTS

TABLE 1. ANTHROPOMETRIC CHARACTERISTICS OF THE GROUPS (MEAN \pm SD)

Group	N	Age [years]	Weight [kg]	Height [cm]
Experimental	12	22.14 ± 1.99	64.84 ± 5.07	174.69 ± 4.66
Control	12	22.22 ± 1.70	64.97 ± 3.82	175.37 ± 5.08

Table 1 shows there were no significant differences were observed in the anthropometric characteristics for the subjects in the two groups.

TABLE 2. MEAN \pm SD AND (T) TEST BETWEEN PRE - TESTS IN VISUAL ABILITIES AND PERFORMANCE LEVEL FOR EXPERIMENTAL AND CONTROL GROUPS.

Variables	Experimental group	Control group	T value
Eye-hand coordination (EHC)	8.66 \pm 1.49	8.50 \pm 1.24	.29
Eye-foot coordination (EFC)	5.81 \pm 1.33	5.66 \pm 1.23	.31
Visual acuity (VA)	8.08 \pm 0.99	7.50 \pm 1.51	.43
Visual reaction time (VRT)	0.75 \pm 0.62	0.58 \pm 0.51	.71
Visual Tracking (VT)	6.00 \pm 1.12	5.66 \pm 0.65	.88
Performance level	10.41 \pm 1.31	9.83 \pm 1.33	.85

Table 2 shows there were no significant differences at 0.05 between control and experimental groups in all the variables

TABLE 3. MEAN \pm SD AND (T) TEST BETWEEN POST - TESTS IN VISUAL ABILITIES AND PERFORMANCE LEVEL OF EXPERIMENTAL AND CONTROL GROUPS.

Variables	Experimental group	Control group	T value
Eye-hand coordination (EHC)	11.66 \pm 1.96	7.91 \pm 1.78	4.89
Eye-foot coordination (EFC)	9.00 \pm 0.95	6.41 \pm 1.44	5.17
Visual acuity (VA)	11.00 \pm 2.44	7.91 \pm 1.78	3.52
Visual reaction time (VRT)	1.41 \pm 0.51	0.91 \pm 0.51	2.37
Visual Tracking (VT)	7.7 \pm 1.48	6.50 \pm 1.31	2.18
Performance level	15.75 \pm 191	11.91 \pm 3.02	3.70

Is clear from Table (3) significant differences at 0.05 between control and experimental groups in all the variables

DISCUSSION

The training of the visual skills is also known as vision therapy, can be thought of as physical therapy for the brain and eye. Since “the eyes lead the body” concept was put into perspective by Blanton Collier, a football coach, a greater force has been given to understand the impact of visual skills on sports performance [17]. Vision skills are necessary to achieve success in most sports [18,19]. Visual sensory input may account for up to 85-90% of the sensory input an athlete is receiving at the time of athletic contest. Since, vision is learned; this can be learned well or poorly by the athletes and hence, the training of the visual skills is necessary to maintain a good performance day in and day out.

On one hand, there are several studies that highlighted the positive role of vision training on sport-specific tasks [20,21,22] but on the other, there are studies which demonstrating no improvement in performance [23,24]. It is necessary to realize that training of the visual skills following a particular approach is required to improve these skills with sensory integration and improve the capability to interpret what is seen.

The major findings from the study were the significant Improvements in the visual abilities in Performance level, which proves the visual training efficacy. Athletes successful in shooting generally have good visual skill abilities that set them apart from non-athletes (25). It is required for an athlete not only how good his eyesight is, as it might be measured by looking at a standard eye chart, but also how good his vision is, that is, how well his brain can interpret the information his eyes pick up, specifically when that information contains moving objects that may be glimpsed only for a split second. Hence vision training helps the athlete in having prompt response and judgment in the game as visual information enhances the ball catching skill (26).

From the results, it could be deducted that many skills that were tested, the experimental group performed significantly better than the control group. Therefore, if the control group in Bressan's 33 study performed poorly because of no visual training, one could similarly expect the same for the age group handball players (27).

CONCLUSION

The results of the present showed that there is a significant difference between the experimental group and control group of the variables. The present visual exercises protocol has positive effect and improves on all variables of visual abilities and level of performance in young handball players after eight weeks of vision exercise training. The basic visual skills such as reaction time, movement time, and eye hand/foot coordination were enhanced because of vision exercise training protocol which led to the improvement in the motor skills.

REFERENCES

1. Wilson Thomas & Falkel Jeff. 2004. Sports vision: Training for Better Performance, Human Kinetics; 1 edition. USA.
2. Farrow, D. & Abernethy, B. 2002. Can anticipatory skills be learned through implicit video-based perceptual training, Journal of Sports Sciences, 20, 471-485.
3. Zeiman, A., Z. Hascelik, O. Basgaza, K. Turker, S. Narman and R. Ozker, 1998. The effects of physical training on physical fitness tests and visual reaction time of volleyball players. J. Sports Medicine, 29: 234-239.
4. Walker, I., 2001. Why visual training programs for sport do not work. Sport Sci. Mar., 19: 203-220.
5. Handler SM, Fierson WM, Section on Ophthalmology; Council on Children with Disabilities; American Academy of Ophthalmology; American Association for Pediatric Ophthalmology and Strabismus; American Association of Certified Orthoptists. Learning disabilities, dyslexia, and vision. Pediatrics 2011; 127: e818-856.
6. Schulte-Körne G, Deimel W, Bartling J, Remschmidt H. Neurophysiological correlates of word recognition in dyslexia. J Neural Transm (Vienna) 2004; 111: 971-984.
7. Balasaheb T., Maman P & Sandhu JS. 2008. The impact of visual skills training on batting performance in cricketers. Serb J Sports Sci, 2[1]: 17-23.
8. Zupan, Michael F., Arata Alan W, Wile Alfred & Parker Ryan. [2006]. Visual adaptations to sports vision enhancement training, A study of collegiate athletes at the US Air Force Academy. CLINICAL. 43-48.

9. Quevedo, L., Sole, J., Palmi, J., Planas, T. &Saona, C.1999. Experimental study of visual training effects in shooting initiation. Clinical and Experimental Optometry 82[1], 30-36.
10. Ahmed Maysa Fouad & Shosha Nadia Taher, 2010. Efficiency of the program of visual training On some visual skills and visual perceptual skills and their relationship to performance level synchronized swimming juniors, Social and Behavioral Sciences, 5, 2082–2088.
11. Du Toit PJ, Kruger PE, Fowler KF, Govender C & Clark J. 2010. Influence of sports vision techniques on adult male rugby players. African Journal for Physical, Health Education, Recreation and Dance; 16[3]:510-517.
12. <http://www.Avoca.Org.homecourt.htm>
13. Abernethy, B., & Wood, J. M. 2001. Do generalized visual training programmes for sport really work? An experimental investigation. J Sports Sci., 19: 203-222.
14. Wood, J.M. & Abernethy, B. 1997. An assessment of the efficacy of sports vision training programs. Optometry and Vision Science 74, 646-659.
15. Cohn, T. E & Chapik, D. D. Visual training in soccer. Perceptual and Motor Skills, v. 72, p. 1238-1240, 1991.
16. Erickson GB (2007) Sports Vision: Vision Care for the Enhancement of Sports Performance: Butterworth-Heinemann.
17. Colloer B (1979) The eyes lead the body. Optom Management 15:73.
18. Knudson D, Kluka DA (1997) The impact of vision and vision training on sport performance. JPERD 68(4): 17-24.
19. Williams AM, Ward P, Knowles JM, Smeeton NJ (2002) Anticipation skill in a real-world task: measurement, training, and transfer in tennis. J Exp Psychol Appl 8(4): 259-270.
20. West KL, Bressan ES (1996) The effect of a general versus specific visual skills training program on accuracy in judging length of ball in cricket. International Journal of Sport Vision 3: 41.
21. Quevedo i Junyent L, Sole i Forto J (1995) Visual training programme applied to precision shooting. Ophthalmic Physiol Opt 15(5): 519-523.
22. Kofsky M (1988) Sports vision visual training and experimental program with Australian Institute of Sport Basketball Players. Australian Journal of Optometry 6: 15.
23. Quevedo L, Sole J, Palmi J, Planas A, Soana C (1999) Experimental study of visual training effects in shooting initiation. Clin Exp Optom 82(1): 23-28.
24. Wood JM, Abernethy B (1997) An assessment of the efficacy of sports vision training programs. Optom Vis Sci 74(8): 646-659.
25. Kluka D, Knudson D, 1997, The impact of vision and vision training on sport performance. Journal of Physical Education, Recreation and Dance, 68, 17-27.
26. Laurent M, Ripoll H, Montagne G, 1993, Visual information pick up in ball catching. Human Movement Science, 12, 273-297.

27. Bressan ES, 2003, Effects of visual skills training, vision coaching and sports vision dynamics on the performance of a sport skill. African Journal for Physical, Health Education, Recreation and Dance, 9(1): 20-31.



EFFECT OF SQUAT JUMP TRAINING ON LEG STRENGTH AND EXPLOSIVE POWER AMONG COLLEGE MEN

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ABSTRACT

The purpose of the study was to find out the effect of squat jump training on leg strength and explosive power among college men. To achieve the purpose of this study, 20 college men are randomly selected as subjects from the SRM University, Chennai, Tamilnadu, India. Their age ranged from 18 to 25 years. The selected participants were randomly divided into two groups such as experimental group underwent squat jump training (n=10) and control group (n=10). Experimental group underwent squat jump training for three alternate days per week and each session lasted for an hour for six week. Control group was not exposed to any specific training but they were participated in regular activities. The data on leg strength and explosive power were collected by administering by wall sit test and standing broad jump. The pre and post tests data were collected on selected criterion variables prior and immediately after the training programme. The pre and post-test scores were statistically examined by the dependent 't'-test and Analysis of Co-Variance (ANCOVA) for each and every selected variable separately. It was concluded that the squat jump training group had shown significantly improved in leg strength and explosive power. However the control group had not shown any significant improvement on any of the selected variables such as leg strength and explosive power.

KEYWORDS: Squat Jump Training And Soccer

INTRODUCTION

Sports are institutionalized competitive activities that involve vigorous physical exertion or the use of relatively complex physical skills by participants motivated by personal enjoyment and external rewards. Sport is all forms of physical activity which, through casual or organized participation, aim to use, maintain or improve physical fitness and provide entertainment to participants.

The word “training” has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years.

Jump squat is a plyometrics exercise where the squatter engages in a rapid eccentric contraction and jumps forcefully off the floor at the top of the range of motion. This jump squat variation is performed rhythmically with each jump occurring immediately after the next. The performance will be just like the vertical or horizontal jumps. These variations are most effective for reactive development and to peak the vertical and horizontal jumps. They should quickly descend down into a 1/4 squat position and try to jump as high as and as far as possible on the ascent - focus on driving the balls of the feet through the floor at toe-off, also these variations the focus is just as much on the negative eccentric contraction as it is on the "jump".

Leg strength is the maximum force that can be generated with the legs (Ted., 1991) and Measuring the distance between a person's standing reach and the height he or she can jump and reach has been proposed as a test of leg explosive power. (Uppal, 2001).

Statement of the Problem

The purpose of the study was to find out the effect of squat jump training on leg strength and explosive power among college men.

METHODOLOGY

Selection of Subjects

The purpose of this study was to find out the effect of squat jump training on leg strength and explosive power among college men. To achieve the purpose of the study twenty college men were randomly selected from *SRM University, Chennai, Tamilnadu*, and their age ranged from 18 to 25 years. They were divided into two equal groups consisting of 10 each and named as experimental group and control group. The investigator did not make any attempt to equate the groups. The control group was not given any special treatment and the experimental group was attended squat jump training for three alternative days per week, for a period of six weeks.

Selection of Variables and Tests

The researcher reviewed the available scientific journals, periodical magazine and research paper, taking into consideration feasibility criteria, availability of the instrument and relevance of the variable of the present study the following variables were selected. The selected dependent variables were leg strength and explosive power tested by wall sit test and standing broad jump.

Experimental design and Statistical technique

This study was conducted to determine the possibility cause and effects of squat jump training on leg strength and explosive power among college men. This study consisted of two equal groups

of ten subjects each. Group-I (n=10) underwent squat jump training and Group II acted as control group. The related group research design was used in this study. The collected data from two groups prior to and after the experimental treatments on selected variables were statistically analyzed by using the statistical technique of dependent 't' test and analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed as a level of confidence to test the hypotheses.

ANALYSIS OF THE DATA

The effects of squat jump training on leg strength and explosive power were analyzed and presented below.

1. Leg strength

The t-test on leg strength of the pre and post test scores of squat jump training group and control group have been analyzed and presented in table I.

TABLE I
COMPUTATION OF 'T'-RATIO BETWEEN PRE AND POST TEST MEANS OF
SQUAT JUMP TRAINING GROUP AND CONTROL GROUP ON
LEG STRENGTH (SECONDS)

Group	Test	Mean	Standard Deviation	t-Ratio
Squat jump Training	Pre test	44.58	±9.37	8.67*
	Post test	68.37	±15.24	
Control Group	Pre test	41.27	±4.58	0.89
	Post test	40.08	±4.21	

*Significant at .05 level. (The table value required for 0.05 level of significance with df 9 is 2.26)

The table I shows that the pre-test mean value of squat jump training group and control group are 44.58 and 41.27 respectively and the post test means are 68.37 and 40.08 respectively. The obtained dependent t-ratio values between the pre and post test means of squat jump training group and control group are 8.67 and 0.89 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. Since, the obtained 't' ratio value of squat jump training group was greater than the table value, it is understood that squat jump training group had significantly improved the leg strength. However, the control group had not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training. Analysis of covariance (ANCOVA) on leg strength of experimental and control groups have been analyzed and presented in table II.

TABLE II
ANALYSIS OF COVARIANCE (ANCOVA) ON LEG STRENGTH OF SQUAT
JUMP TRAINING GROUP AND CONTROL GROUP

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F – ratio
Squat jump Training Group	Control Group	Between	127.05	1	127.05	21.57*
65.37	41.12	Within	100.13	17	5.89	

* Significant at 0.05 level. (The table value required for significance at 0.05 level with df 1 and 17 is 4.45)

Table II shows that the adjusted post test means values on leg strength. The obtained f- ratio of 21.57 for adjusted post test mean is greater than the table value 4.45 with df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean difference exist between the adjusted post test means of squat jump training and control groups on leg strength.

The bar diagram shows the mean values of pre test, post test and adjusted post test on leg strength of squat jump training group and control group.

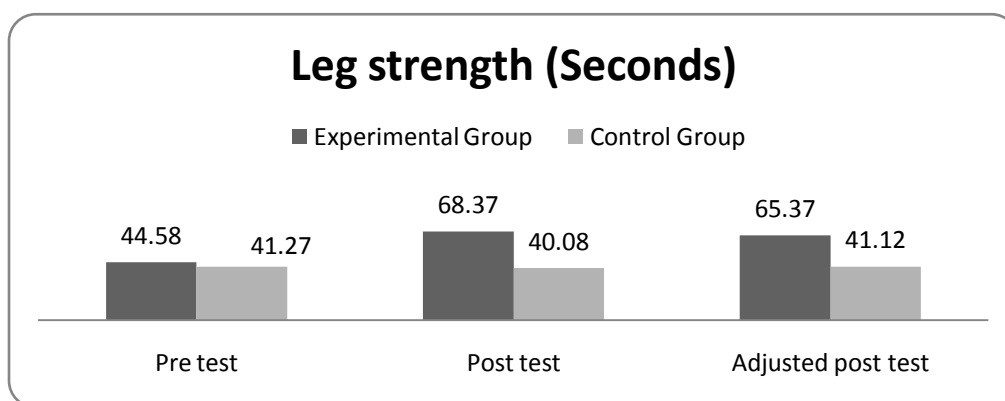


FIGURE I: PRE TEST, POST TEST AND ADJUSTED POST TEST MEAN VALUES OF SQUAT JUMP TRAINING EXPERIMENTAL AND CONTROL GROUPS ON LEG STRENGTH.

2. Explosive power

The t-test on explosive power of the pre and post test scores of squat jump training group and control group have been analyzed and presented in table III.

TABLE III
COMPUTATION OF 't'-RATIO BETWEEN PRE AND POST TEST MEANS OF SQUAT JUMP TRAINING GROUP AND CONTROL GROUP ON EXPLOSIVE POWER (Centimeters)

Group	Test	Mean	Standard Deviation	t-Ratio
Squat jump Training	Pre test	157.64	±14.27	11.85*
	Post test	179.38	±13.63	
Control Group	Pre test	151.37	±19.64	1.53
	Post test	150.78	±20.17	

*Significant at .05 level. (The table value required for 0.05 level of significance with df 9 is 2.26)

The table III shows that the pre-test mean value of squat jump training group and control group are 157.64 and 151.37 respectively and the post test means are 179.38 and 150.78 respectively. The obtained dependent t-ratio values between the pre and post test means of squat jump training group and control group are 11.85 and 1.53 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. Since, the obtained 't' ratio value of squat jump training group was greater than the table value, it is understood that squat jump training group had

significantly improved the explosive power. However, the control group had not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

Analysis of covariance (ANCOVA) on explosive power of experimental and control groups have been analyzed and presented in table IV.

TABLE IV
ANALYSIS OF COVARIANCE (ANCOVA) ON EXPLOSIVE POWER OF
SQUAT JUMP TRAINING GROUP AND CONTROL GROUP

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F ratio
Squat jump Training Group	Control Group	Between	5904.93	1	5904.93	18.34*
178.51	153.78	Within	5473.59	17	321.97	

* Significant at 0.05 level. (The table value required for significance at 0.05 level with df 1 and 17 is 4.45)

Table IV shows that the adjusted post test means values on explosive power. The obtained f-ratio of 18.34 for adjusted post test mean is greater than the table value 4.45 with df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean difference exist between the adjusted post test means of squat jump training and control groups on explosive power.

The bar diagram shows the mean values of pre test, post test and adjusted post test on explosive power of squat jump training group and control group.

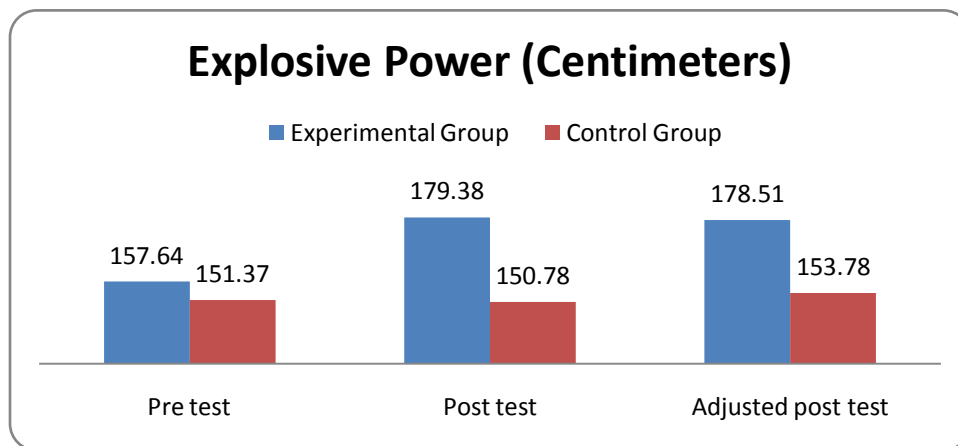


FIGURE II: PRE TEST, POST TEST AND ADJUSTED POST TEST MEAN VALUES OF SQUAT JUMP TRAINING AND CONTROL GROUPS ON EXPLOSIVE POWER.

DISCUSSION ON FINDINGS

The result of the study indicates that there was a significant improvement on leg strength and explosive power due to the effect of squat jump training among college men when compared to control group. The results of this investigation are also supported by the following studies of Adams., et al., (1992), Gourgoulis., et al., (2003) and Chelly (2009).

CONCLUSIONS

3. There was significant improvement on leg strength and explosive power due to the effect of squat jump training among college men.
4. However the control group had not shown any significant improvement on any of the selected variables.
5. There was a significant

REFERENCE

- Adams, K., O'Shea, J. P., O'Shea, K. L., & Climstein, M. (1992). The Effect of Six Weeks of Squat, Plyometric and Squat-Plyometric Training on Power Production. *The Journal of Strength & Conditioning Research*, 6(1), 36-41.
- Harris, N. K., Cronin, J. B., Hopkins, W. G., & Hansen, K. T. (2008). Squat jump training at maximal power loads vs. heavy loads: effect on sprint ability. *The Journal of Strength & Conditioning Research*, 22(6), 1742-1749.
- Gourgoulis, V., Aggeloussis, N., Kasimatis, P., Mavromatis, G., & Garas, A. (2003). Effect of a submaximal half-squats warm-up program on vertical jumping ability. *The Journal of Strength & Conditioning Research*, 17(2), 342-344.
- Chelly, M. S., Fathloun, M., Cherif, N., Amar, M. B., Tabka, Z., & Van Praagh, E. (2009). Effects of a back squat training program on leg power, jump, and sprint performances in junior soccer players. *The Journal of Strength & Conditioning Research*, 23(8), 2241-2249.
- Ted A, Baugarter., and Andrew J, Jackson. 1991. Measurement for Evaluation in Physical Education and Exercise Science. Dubuque: IOWA WMC Brown Publishers, 4th ed, p. 227. 22 Ibid, p. 236
- Gourgoulis, V., Aggeloussis, N., Kasimatis, P., Mavromatis, G., & Garas, A. (2003). Effect of a submaximal half-squats warm-up program on vertical jumping ability. *The Journal of Strength & Conditioning Research*, 17(2), 342-344.
- Chelly, M. S., Fathloun, M., Cherif, N., Amar, M. B., Tabka, Z., & Van Praagh, E. (2009). Effects of a back squat training program on leg power, jump, and sprint performances in junior soccer players. *The Journal of Strength & Conditioning Research*, 23(8), 2241-2249.



COMPARATIVE STUDY OF THE FOOTBALL PERFORMANCE AMONG RURAL AND URBAN HIGHER SECONDARY SCHOOL OF VELLORE DISTRICT

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ABSTRACT

The purpose of the study was to find out the comparative study of football performance among rural and urban higher secondary school of Vellore district. To achieve the purpose of the study investigator selected 15rural football players 15 urban football players from government higher secondary school at veollore district. Their ages ranges from 16 to 19 years. They were rondomly selected from rural and urban football players. After analyzing the various factors associated with the presented study. The following physical fitness variables such as speed, agility cardio respiratory and physiological variables resting pulse rate and vital capacity were tested through 50 meters run, shuttle run, cooper's 12 min run/walk, pulse rate and spiro meter. The collected data were analysed statistically by independent 't' test was used. From the analysis of data it was proved that there is significant difference on speed, agility, vital capacity and there was no significant difference on cardio-respiratory endurance and pulse rate.

KEYWORDS: *Speed, Agility, Cardio Respiratory Endurance, Resting Pulse Rate And Vital Capacity*

INTRODUCTION

Football is a passing and running game un predictable and constantly changing pattern demanding an acute awareness of other players and ability to make quick decisions and act upon them without delay .(Reilly 1996)

Physical fitness is a quality of life. It is the condition that helps a person to look and feel well to carry out his daily duties and responsibility successful reserves to enjoy his other social, civic, cultural and recreational interest. In addition it enables him to meet unusual (or) emergency demands. (Anderson and Johnson, 2005).

Physiology is the study about the function of the body (Astrand, 1997)

STATEMENT OF THE PROBLEM

The purpose of the study was comparative study of the football performance among rural and urban higher secondary school of vellore district.

HYPOTHESIS

1. It was hypothesized that there would be a significant difference on Physical fitness components such as speed, agility and cardio respiratory endurance between rural and urban football players.
2. It was hypothesized that there would be a significant difference on physiological variables such as resting pulse rate and vital capacity between rural and urban football players.

REVIEW AND RELATED LITERATURE

Perumal. R (2012) conducted a research on physical physiological and anthropometrical parameters associated with playing ability of elite junior badminton players. To achieve the purpose of the study 50 badminton players were selected as subject. They age ranges between 14 to 15 years. They following physical fitness variables are speed, agility, leg explosive power, cardio vascular endurance, reaction time, shoulder strength, mean arterial blood pressure, percent body fat, hemoglobin, anaerobic power, vital capacity, respiratory rate. Anthropometric variables are height, weight, arm length, leg length, trunk length. The selected variables were tested through speed was measured 50meter sprint test. Agility was measured 4x10meter shuttle run. Explosive power was measured standing broad jump. Cardiovascular endurance was measured 12minuties run walk test. Reaction time was measured nelson's eye foot reaction test. Shoulder strength was measured push up. Abdominal strength was measured sit ups. Resting heart rate and blood pressure was measured sphygmomanometer and stethoscope. Body fat was measured skin fold calipers. Hemoglobin was measured blood sample collected. Anaerobic power was measured margaria kulaman test. Vital capacity was measured spirometer. Respiratory rate was measured biomonitor. Weight was measured weighing machine. Height, weight arm length, leg length and trunk length was measured flexible tape. The collected data were analysis with correlation of coefficient. The result of the study shows s that there was a significant related physical variables are speed, agility, cardiovascular endurance, reaction time, shoulder strength and abdominal strength. Physiological variables are respiratory rate anthropometric variables are height, weight, arm length and trunk length that there was a not significant difference in physical fitness variables are leg explosive power. Physiological variables are resting heart rate, mean arterial blood pressure, percent body fat, hemoglobin, aerobic power, vital capacity. Anthropometric variables are leg length.

Ram Kumar. N (2012) conducted a research on comparison of anthropometric variables physiological variables are hemoglobin between rural and urban school children. To achieve the purpose of the study 20 students rural school boys 20 students urban school boys were selected as subject from the rural school boys in S.S.A Middle School and urban School boys in P.A.K Palanisamy Higher Secondary from Chennai. They age ranges between 12 and 14 years. The variables selected were anthropometry variables are height and weight physiological variables are resting pulse rate and breath holding time. Hemoglobin. The selected variables were tested through height was measured stadiometer. Weight was measured weighing machine. Resting pulse rate radial pulse rate. Breath holding time was measured nose clip. Hemoglobin was measured sahil's hacmometer. The collected data were analysis with 't' test. The result of the study sources that there was a significant difference physiological variables are resting pulse rate and breath holding and hemoglobin rural and urban school children that there was no significant difference in anthropometric variables are height and weight rural and urban school children.

METHODOLOGY

To achieve the purpose of the study investigator selected 15rural football players 15 urban football players from government higher secondary school at veollore district. Their ages ranges from 16 to 19 years. They were rondonly selected from rural and urban football players. After analyzing the various factors associated with the presented study. The following physical fitness variables such as speed, agility cardio respiratory and physiological variables resting pulse rate and vital capacity were tested through 50 meters run, shuttle run, cooper's 12 min run/walk, pulse rate and spiro meter. The collected data were analysed statistically by independend 't' test was used.

RESULTS AND DISCUSSION

TABLE-I
SHOWING THE MEAN VALUE OF RURAL AND URBAN FOOTBALL PLAYERS
SPORTS ON SPEED AGILITY CARDIO RESPIRATORY ENDURANCE
RESTING PULSE RATE AND VITAL CAPACITY

VARIABLES	GROUP	NUMBER OF SUBJECT	MEAN	STANDARD DIVATION	T
Speed	Rural	15	6.61	0.60	2.71*
	Urban	15	5.68	0.32	
Agility	Rural	15	20.1	0.83	3.14*
	Urban	15	21.11	0.93	
Cardio Respiratory Endurance	Rural	15	2412.67	100.56	1.32
	Urban	15	2364.67	97.49	
Resting Pulse rate	Rural	15	59.53	1.89	1.62
	Urban	15	58.53	1.45	
Vital Capacity	Rural	15	4.34	0.25	3.09*
	Urban	15	4.74	0.43	

Table t – ratio at 0.05 level of confidence for 2 and 28 (df) = 2.04 *Significant at 0.05 levels.

The result presented in Table I proved that there was significant difference in speed as the obtained 't' value of 2.71 was greater than the table 't' value of 2.04.

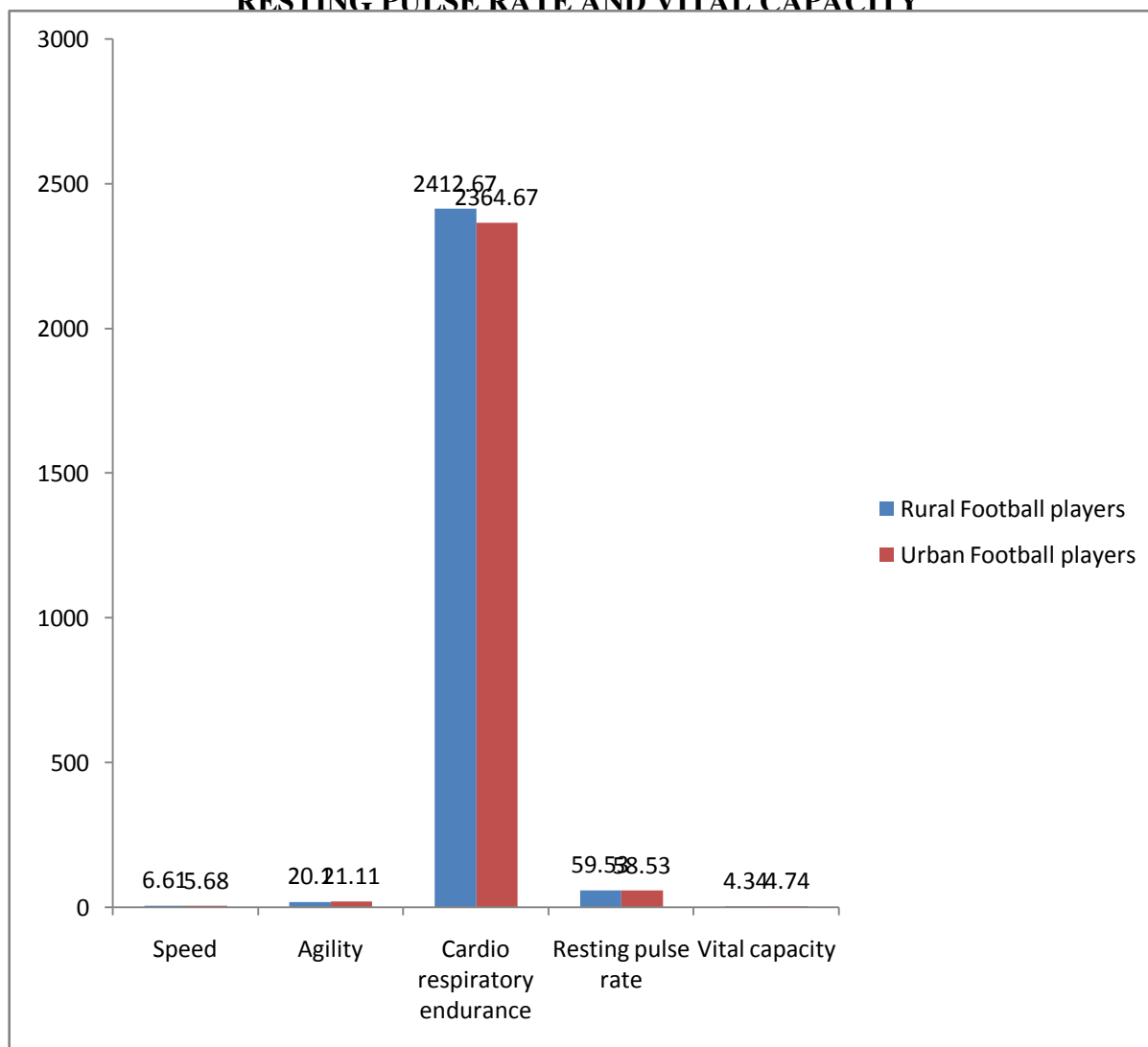
That there was significant difference in agility as the obtained 't' value of 3.14 was greater than the table 't' value of 2.04.

That there was no significant difference in Cardio respiratory endurance as the obtained 't' value of 1.32 was lesser than the table 't' value of 2.04.

That there no was significant difference in Resting as the obtained 't' value of 1.62 was lesser than the table 't' value of 2.04.

That there was significant difference in Vital Capacity as the obtained 't' value of 3.09 greater than the table 't' value of 2.04.

Figure – 1
SHOWING THE MEAN VALUE OF RURAL AND URBAN FOOTBALL PLAYERS
SPORTS ON SPEED AGILITY CARDIO RESPIRATORY ENDURANCE
RESTING PULSE RATE AND VITAL CAPACITY



CONCLUSION

1. It was concluded that there would be significant difference in speed, agility and vital capacity between rural and urban football players.
2. It was concluded that there would be no significant difference in Cardio respiratory endurance and resting pulse rate between rural and urban football players.

REFERENCE

Anderson, B. and Pamela J. Johnson (2005), “Physical Fitness and Digest DIBI Book”, Inc., Illinois.

Perumal. R (2012), “Physical Physiological and Anthropometrical Parameters associated with Playing ability of Elite Junior Badminton Players”, Unpublished Doctoral Thesis, Tamil Nadu Physical Education and Sports University.

Ram kumar. N (2012), “Comparision of Anthropometric Variables Physiological Variables and Haemoglobin between Rural and Urban School Children”, Unpublished Masters Thesis, Tamil Nadu Physical Education and Sports University.



PONTOON SWIMMING POOL

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ABSTRACT

Swimming, which is the coordinated and harmonic movement of the human body inside a liquid medium by means of the combined action of the superior and inferior limbs, is a physical activity which is diffused throughout the whole world and it is practiced by healthy and non-healthy subjects. Swimming is one of the physical activities with less contraindication and with limited exceptions, can be suggested to individuals of both sexes and of every age range, it is one of the life saving skill. The main aim of the project is to promote cost effective and easily constructible swimming pools in hazardous free waters of the country. Pontoon pools will create professional swimmers even from the rural areas where proper swimming pools are not available. Pontoon pools are easily moveable from one place to another and it has very less maintenance. People who live in islands and coastal areas are prone to water borne disasters. It is essential that everyone knows the life saving skill swimming to meet up with such unforeseen emergencies. This pontoon swimming pool will facilitate many to learn swimming. This paper discusses the specification of the pontoon pool, its features, advantages, disadvantages and practical applicability.

KEYWORDS: Features, Advantages, Disadvantages, Applicability

INTRODUCTION

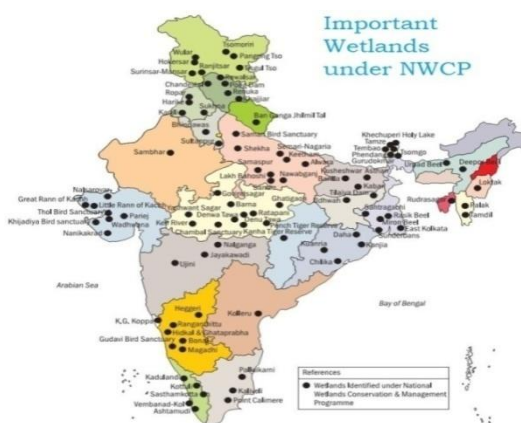
Swimming is a coordinated and harmonic movement of the human body inside a liquid medium by means of the combined action of the superior and inferior limbs. It is a physical activity which is diffused throughout the whole world and it is practiced by all sought of people. Swimming can be suggested to individuals of both sexes and of every age range.

People who live in islands and coastal areas are prone to water borne disasters. It is essential to know the life saving skill to meet up with such unforeseen emergencies. A swimming pool, swimming bath, wading pool, or paddling pool is a structure designed to hold water to enable swimming or other leisure activities. Pools can be built into the ground or built above the ground; the swimming pool can also be build using pontoons (floating docks) in the shallow waters of lakes and lagoons. In India there are so many water bodies, so by introducing these kinds of pools to the shallow waters of India, we can create an opportunity for more people to learn swimming which is an essential life skill than the current level.

SHALLOW WATERS IN INDIA

Lakes are traditionally under-valued resources to human society. They provide a multitude of uses and are prime regions for human settlement and habitation Uses include drinking and municipal water supply; industrial and cooling water supply; power generation; navigation; commercial and recreational fisheries; body contact recreation, boating, and other aesthetic recreational uses, in India there are more than 180 lakes are available, from this around 106 lakes are suitable for implementing pontoon swimming pools, and it may be less if we deeply studied about the safeties of these lakes.

Lagoon is a shallow body of water separated from a larger body of water by barrier islands or reefs. Lagoons are commonly divided into coastal lagoons and atoll lagoons. Lagoons are common coastal features around many parts of the world. Lakshadweep islands and Andaman and Nicobar islands are sources of lagoons in India, in Lakshadweep archipelago there are 11 islands are inhabited islands and in Andaman and Nicobar islands there are 36 inhabited islands, these lagoons are one of the best source for implementing pontoon pools in island level.



PONTOON CUBES

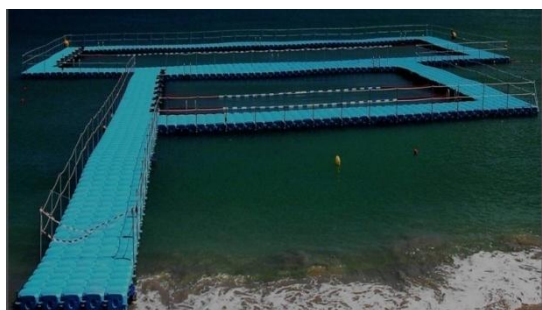


Pontoon cubes are made of high density polyethylene. They are blow molded, the size of the pontoon is 50cm x 50cm x 40cm and the weight is 6.5 kg/ cube, these pontoons that can be installed in the open sea or any other body of water exposed to difficult conditions. With a load capacity of 87.5kg per cube, this solution also offers exceptional buoyancy of 350kg/ m², the assembly of pontoon cubes are extremely simple, each cubes has 4 ears on each angle which enable assembly by the connecting pins tightened by mean of a locking key, the cubes are

also connected on the periphery using a coupler comprising of a screw.

PONTOON SWIMMING POOL

In the process of construction of pontoon pools, the pontoon are interlocked with help of screws and for the length of 25m pool length 50 pontoons are interlocked and for the width of 20 m, 40 pontoons are interlocked each other, and a platform of 4 m is extended around this length, so for the construction of 25m x 20m pool, around 2000 pontoon are needed. The pool contain 8 lanes with 8 starting platform installed at any end and 16 non electronic touch panels installed to both end of every lane for the better push off the swimmers, then the pool is tightly anchored at every side to get better stability.



PONTOON POOL INSTALLED IN A LAKE

The surrounding area of pool can be protected using any small meshed fishing net to restrict the entry of aquating organisms.



PONTOON POOL INSTALLED IN LAGOON



COST ESTIMATION FOR A SHORT COURSE POOL (25 M X 20 M)

Items	Quantity	Price/ piece (Rs)	Total (Rs)
Pontoon cubes	2000	2000	40,00,000
Starting Platform	8	4000	32,000
Touch Panel	16	4000	64,000
Lane rope (25m)	7	6000	42,000
Total			41,38,000

ADVANTAGES

- The pontoon swimming pool is very cost effective compare to the other normal swimming pools.
- This kind of pools can be installed both in lakes and in lagoons where the water is hazardous free.
- As it is installed on surface of natural water source, so there is no need of any kind of water treatments further.
- The pontoon pools are easily movable from one place to another.
- The pontoon cubes are very simple to assemble.
- It is easy to maintain.

DISADVANTAGES

- The water density will be different compare to the standard pools.
- Bad climatic condition will effect in the stability of the swimming pool.

CONCLUSION

This thematic paper provided an overview of construction of swimming pools using pontoons in shallow waters of India. For this, the shallow water sources were identified and found about 106 lakes were suitable from more than 180 lakes present in India and 47 Lagoons were also identified as a suitable location for the implementation of these pools. The details about pontoon cubes and their construction methods and the estimated expenditure for the construction of 25m x 20m swimming pool were mentioned and it was about 41,38,000.

And it has the advantages of cost effectiveness and can be easily installed in hazardous free water and there is no need of water treatment and also it can maintain easily and move the pool from one place to another. The main disadvantage is the water density were compared to standard pool water and the bad climatic condition will effect in stability of the swimming pool.



IMPACT OF VARIOUS PLYOMETRIC TRAINING WITH SELECTED ASANA PRACTICES ON EXPLOSIVE STRENGTH, AGILITY AND BALANCE OF MALE FOOTBALLERS

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ABSTRACT

The purpose of the study was to find out the effect of unilateral, bilateral plyometric training with yogasana practices on selected physical variables explosive strength, agility and balance of engineering college football players. To achieve the purpose of the study forty (N=40) male football players from various engineering colleges in Andhra Pradesh were randomly selected. The age group of the subject was 18 to 22 years. Selected subjects were equally divided into two groups namely control and experimental group. Control group was not given any type of training. Experimental group was given unilateral, bilateral plyometric training with yogasana for a period of six weeks. The pre test and post test data on explosive strength, agility and balance was collected on both the groups before and after the experimental training. Collected data was analysed by using ANCOVA to find significant difference among mean at 0.05 level of confidence. It was concluded that experimental training unilateral, bilateral plyometric training combined with yogasana significantly improved the explosive strength, agility and balance of the engineering college football players.

KEYWORDS: Unilateral, Bilateral Plyometric Training, Explosive Strength, Agility, Balance And yogasana.

INTRODUCTION

Football is an intermittent, highly-intensive and complex sport. A successful performance is dependent on basic abilities, in particular, repeated explosive burst, strength, power, kicking, tackling, and their derivatives such as jumping, turning, sprinting, and changing pace, all making important contributions to the performance of the football player.

Plyometrics are exercises that challenge the muscles explosively. With consistent plyometric training, football players can significantly increase their explosive strength, agility and balance. Unilateral Plyometrics are the exercises involves using both limbs simultaneously and the Bilateral Plyometrics are the exercises where the limbs are working separately of each other in exercises. (Teixeira et al., 2013)

Plyometrics is one the most effective ways to increase explosive strength and power in football. Research has shown that a muscle stretched before contraction will contract more forcefully and rapidly. And that is basically what plyometric exercises do. They stretch muscles rapidly and then immediately demand a powerful concentric contraction which helps to make explosive movements in football.

Agility is an essential feature of a football player that develop his performance during both the training and the match. Repeatedly using the actions such as sudden decisions, quickness, and reflex that the game requires presents the necessity of the improved agility feature for the football player (Besler, 2010).

Balance is an important function in all types of everyday movement patterns such as standing and walking. It has also been recognized as an integral part of selected sports skills for over 50 years (Seashore, 1947). Gambetta and Gray (1995) stated that balance is “the single most important component of athletic ability” (Gambetta & Gray, 1995, p. 15). According to Strickland (2000), motor development, including balance, should not be treated as unconnected events strung together but rather as interrelated components. For example, agility is interrelated to strength; the more strength and more under controlled an athlete’s movements are, the more agility that athlete has. Because that athlete has better agility the easier it is to balance and coordinate their movements.

HYPOTHESES

1. It was hypothesized that there would be significant difference on explosive strength among control group and experimental group due to unilateral, bilateral plyometric training with yogasana practices of engineering college male football players.
2. It was hypothesized that there would be significant difference on agility among control group and experimental group due to unilateral, bilateral plyometric training with yogasana practices of engineering college male football players.
3. It was hypothesized that there would be significant difference on balance among control group and experimental group due to unilateral, bilateral plyometric training with yogasana practices of engineering college male football players.

Delimitations

7. Forty male intercollegiate level football players from various engineering college in Andhra Pradesh were selected.
8. The age group of the subject was 18-22 years.

9. Neuromuscular variables explosive strength, agility and balance were selected as dependent variables.
10. Training was given for a period of six weeks.
11. Selected unilateral, bilateral plyometric exercise and asanas were given as experimental training.

Limitations

7. The influence of certain factors like daily routine, food habits, life style and rest period were not taken into consideration.
8. Hereditary and environmental factors which contribute to neuromuscular variables were not taken into consideration.
9. No attempt was made to determine whether the subjects were having the same degree of motivation during the various stages of training and testing periods.

METHODOLOGY

To achieve the purpose of the study 40 male football players from various engineering college in Andhra Pradesh were selected. Selected subjects were equally divided into two group namely control and experimental group. Control group was not given any type of physical training. Experimental group was given unilateral, bilateral plyometric training combined with yogasana practices for a period of six weeks. Experimental training was given for a duration of 60-70 minutes in the morning followed by warm up and end with proper warm down. Monday experimental group was given unilateral plyometric training. Thursday experimental group was given bilateral plyometric training. Yogasana practice was done by experimental group on Tuesday and Wednesday.

Training Schedule

TABLE I

	Exercise	1-3 weeks		4-6 weeks	
Unilateral	Single leg speed hops	15 repetition	3 sets	15 repetition	5 sets
	Single leg bounding	15 meters	3 sets	15meters	5 sets
	Skater jump	1meter height/15 repetition	3 sets	1meter height/15 repetition	5 sets
	Hurdle hop	6 repetition 4 hurdles	3 sets	6 repetition 4 hurdles	5 sets
	Single leg X hops	20 inch height, 10 reptition	3 sets	20 inch height, 10 reptition	5 sets
Bilateral	Front Hurdle jump	15 repetition	3 sets	15 repetition	5 sets
	Pike jump	15 meters	3 sets	15 meters	5 sets
	Ankle hops	10 repetition	3 sets	10 repetition	5 sets
	Side – side pogo	10 repetition	3 sets	10	5 sets

	jumps			repetition	
	Plyo. Ins & Outs	10 repetition	3 sets	10 repetition	5 sets
Asana	UpavisthaKonasa na	20-30	10	40-60	10
	Ardha Hanumanasana	20-30	10	40-60	10
	Virabhadrasana	20-30	10	40-60	10
	AdhoMukhaSvan asana	20-30	10	40-60	10
	Parighasana	20-30	10	40-60	10

Pretest and post test data was collected on control group and experimental group before and after the six weeks of experimental training on explosive strength by using standing broad jump test (Chung, L. M. Y. et al. (2013), agility by using semo agility test (David Tomchuk, 2011) and balance by stork stand test (David Tomchuk, 2011). Collected data was analysed by using ANCOVA. The level of significance was fixed as 0.05.

RESULTS AND DISCUSSION

Table II showing the analysis of covariance on explosive strength,

TABLE II
ANALYSIS OF COVARIANCE ON EXPLOSIVE STRENGTH OF CONTROL AND EXPERIMENTAL GROUP

Source	Sum of Squares	df	Mean Square	F	Sig.
Between					.000
Within					
Total					

*Significant at 0.05 level

The obtained f-ratio value of _____ on explosive strength of control group and experimental group was higher than the required table value of _____ at _____ at 0.05 level. Hence, the null hypothesis was rejected. There was a significant difference on explosive strength between control and experimental group adjusted post test means. Hence, the stated hypothesis was accepted.

Figure 1 bar diagram showing the pretest and posttest mean values of control and experimental group on explosive strength.

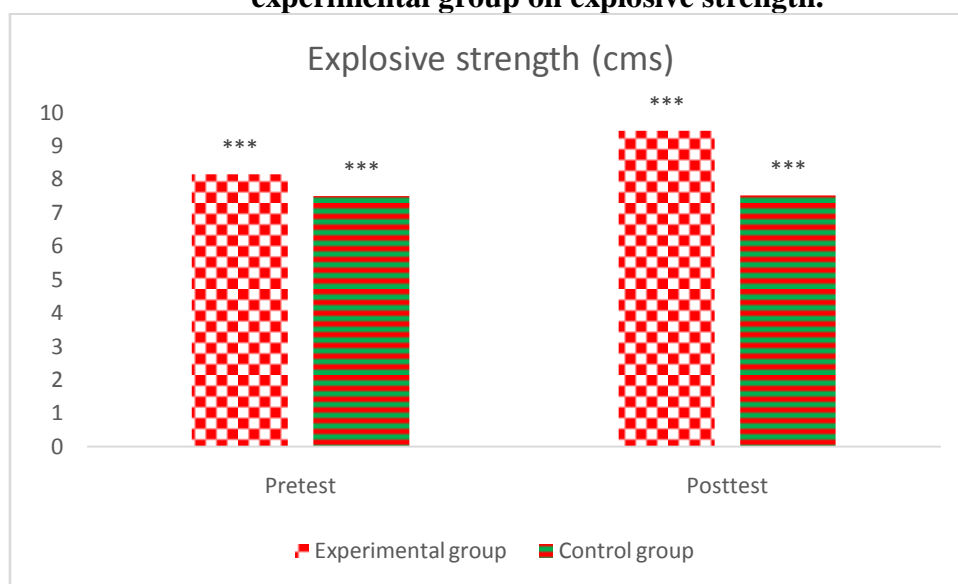


Fig1.

TABLE III
ANALYSIS OF COVARIANCE ON AGILITY OF CONTROL AND EXPERIMENTAL GROUP

Source	Sum of Squares	df	Mean Square	F	Sig.
Between					.000
Within					
Total					

*Significant at 0.05 level

The obtained f-ratio value of _____ on agility of control group and experimental group was higher than the required table value of _____ at _____ at 0.05 level. Hence, the null hypothesis was rejected. There was a significant difference on agility between control and experimental group adjusted posttest means. Hence, the stated hypothesis was accepted.

Figure 2 bar diagram showing the pretest and posttest mean values of control and experimental group on agility.

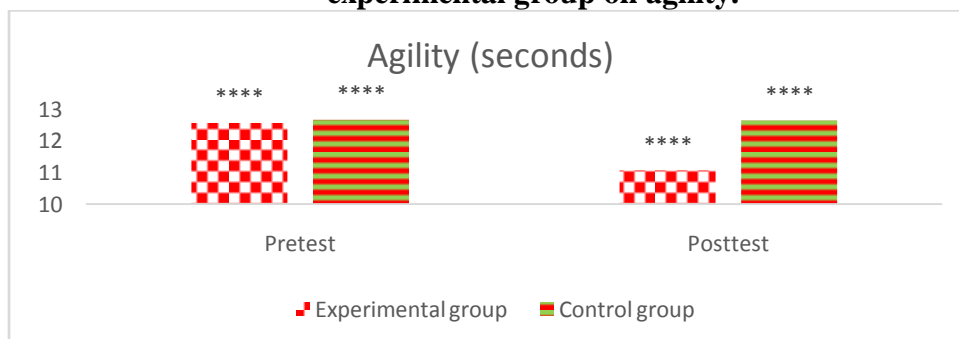


Fig.2

TABLE IV
ANALYSIS OF COVARIANCE ON BALANCE OF CONTROL AND EXPERIMENTAL GROUP

Source	Sum of Squares	df	Mean Square	F	Sig.
Between					.000
Within					
Total					

*Significant at 0.05 level

The obtained f-ratio value of _____ on balance of control group and experimental group was higher than the required table value of _____ at _____df at 0.05 level. Hence, the null hypothesis was rejected. There was a significant difference on balance between control and experimental group adjusted posttest means. Hence, the stated hypothesis was accepted.

Figure 3 bar diagram showing the pretest and posttest mean values of control and experimental group on balance.

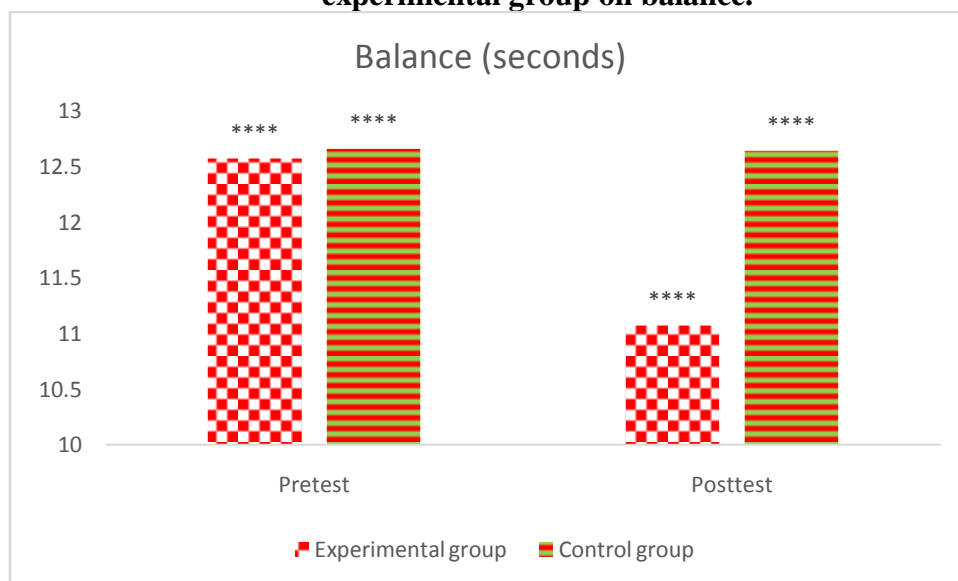


Fig.3

This study illustrates that unilateral and bilateral plyometric training with yogic practices showed significant improvement in explosive strength, agility and balance among football players.

DISCUSSION

The primary finding of the present study was that all the selected dependent variables improved significantly over 6 weeks of training. The variables changed linearly (increasing or decreasing) since 6 weeks training, even though significant contrasts were achieved end of the training.

Significant increase in the values of explosive strength has been found in the comparison made before and after the training for the experimental group ($p < 0.01$). After the program, a significant increase in the value of sit and reach test has been found in view of the values of explosive strength of the control group ($p < 0.05$).

A significant decrease in the values of semo agility test has been found in the comparison made before and after the training for the experimental group ($p < 0.05$).

A significant decrease in the values of stork stand balance test has been found in the comparison made before and after the training for the experimental group ($p < 0.05$).

CONCLUSION

1. It was concluded that six weeks of unilateral, bilateral plyometric training with combined yogasana practices significantly improved explosive strength of male football players of various engineering college in Andhra Pradesh.
2. It was concluded that six weeks of unilateral, bilateral plyometric training with combined yogasana practices significantly improved agility of male football players of various engineering college in Andhra Pradesh.
3. It was concluded that six weeks of unilateral, bilateral plyometric training with combined yogasana practices significantly improved balance of male football players of various engineering college in Andhra Pradesh.

REFERENCES

- Bogdanis GC, et.al., (2017). Comparison between Unilateral and Bilateral Plyometric Training on Single and Double Leg Jumping Performance and Strength. Journal of strength and conditioning research, April, p18
- Chu. D. (1995). Jumping into Plyometrics. Champaign, IL: Human Kinetics.
- David Tomchuk (2011). Companion Guide to Measurement and Evaluation for Kinesiology, Malloy Inc., USA, pp198-200
- Gambetta V., & Gray, G. (1995). Everything in balance. Training and Conditioning, 2, 15-18.
- Heitkamp, H.C., Horstmann, F., Mayer, J., Weller, H., Dickuth, H. (2001). Gain in strength and Muscular Balance after balance training. International Journal of Sports Medicine, 22, 285-290.
- Tsigilis, N., Zachopoulou, E., & Mavridis, T. (2001). Evaluation of the specificity of selected dynamic balance test. Perceptual and Motor Skills, 92, 827-833.



LET THY KITCHEN BE THY APOTHECARY

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ABSTRACT

According to our ancient Indian science, Ayurveda, Indian food is complete and enough for our bodies. Our legumes, beans, grains, fruits and vegetables provide us with ample amount of fiber, fat, carbohydrates, proteins and vitamins and minerals. Our foods are sufficient enough to make us nutritionally efficient. Even though we may be obsessed with our rice and roti, our traditional Indian diet composes of healthy ingredients. The spices we use for preparing the food, not only add flavor to the food but also enrich our food with necessary nutrients. They act as real medicine for all ailments that's why Hippocrates has rightly said, "Let thy kitchen be thy medicine and let the food be the medicine". This paper discusses about nutritional benefits of everyday food items we eat and how our home cooked food and the utensils used for cooking benefits us to stay healthy.

KEYWORDS: *Hippocrates, Minerals, Nutritionally, Sufficient*

INTRODUCTION

According to our ancient Indian science, Ayurveda, Indian food is complete and enough for our bodies. Our legumes, beans, grains, fruits and vegetables provide us with ample amount of fiber, fat, carbohydrates, proteins and vitamins and minerals. Our foods are sufficient enough to make us nutritionally efficient. Even though we may be obsessed with our rice and roti, our traditional Indian diet composes of healthy ingredients. The spices we use for preparing the food, not only add flavor to the food but also enrich our food with necessary nutrients. They act as real medicine for all ailments that's why Hippocrates has rightly said, "Let thy kitchen be thy medicine and let the food be the medicine". This paper attempts to discuss about nutritional benefits of everyday food items we eat and how our home cooked food and the utensils used for cooking benefits us to stay healthy.

Nutritional Benefits of everyday food

An average day's diet is mostly balanced with proper amount of carbohydrates, fats, fiber and proteins. Curd, beans, lentils, chicken, fish or meat not only provide essential amino acids, but are also good sources of healthy fats and is low in calories. Here are some of the food items that are surely available at our home and will help us to maintain a healthy body if consumed in a proper manner.

Moong daal: Moong daal is one the healthiest daals found in Indian household. Moong daal is not only easy to digest but is also rich in nutrients including Vitamin A, C, B, E, potassium, calcium and iron. This daal also helps to curb hunger by making you feel fuller for longer due to being rich in protein and fibre. It feels light in the stomach and is easy to digest thus is given to people when they have an upset stomach.

Spinach: We all have been told since our childhood how important it is to eat green vegetables. This green leafy vegetable is low in calories and rich in nutrients. It contains Vitamin K, Vitamin A, folate, iron, calcium, Vitamin C, fiber, calcium, protein and zinc. And you will be surprised to know that 1 cup of this nutrient-dense leaves contain only 10 calories. The fiber in it helps to keep the digestive tract on track and helps to fight constipation.

Bitter gourd (Karela): Karela is rich in many nutrients including vitamins, phosphorous, zinc, folate, magnesium, manganese and potassium. It is rich in iron and calcium and maintains the blood sugar level in your body by not absorbing the extra sugar. Bitter gourd is 85 per cent to 90 per cent water and as water has no calories it keeps your calorie intake in check and helps you lose weight.

Beetroot: Beetroot juice boosts your stamina and lets you workout for longer if consumed before the workout session. Beetroot is also one of those foods that are low in calories and rich in nutrients. Beetroot helps to detoxify the blood and adds more minerals and nutrients to it. The edible leaves of this vegetable can be added to salad and while making beetroot juice.

Black beans: The high fiber and protein content in black beans make them a great food for weight loss. Black beans also called as turtle beans due to their black hard shell are rich in many vitamins and minerals. It is rich in both soluble and insoluble fiber which makes them good for our cardiovascular system. Black beans also help in maintaining bone health, lowering the blood pressure, lowering blood sugar levels and maintaining healthy digestion.

Cinnamon: Cinnamon helps to keep the blood sugar level in check and also helps to prevent us from cardiovascular disease. You can use this spice while preparing your dal or vegetable. The powdered form of cinnamon is also used while baking cakes and while making tea. Just having half teaspoon of cinnamon every day can help control the post-meal spike in insulin. This insulin spike stores fat in your body rather than burning it.

Turmeric: Considered as an antiseptic, turmeric is the hot favourite spice among Indians. The presence of curcumin in turmeric keeps the fatty tissue at a minimum. Turmeric is also known to have cancer-fighting properties. It is also good for soothing stomach problems like indigestion and inflammation.

Radish: Like all the above-mentioned foods radish is also rich in fiber. One cup of radish contains 3 grams of fiber which is approximately 12 per cent of what is needed on a daily basis. As fiber takes time to break, it keeps you fuller for longer and stops you from unwanted cravings. It can be a part of salads, juices, soups and cooked vegetables.

Garlic: Garlic is wonder food which is helpful in fighting against high blood sugar levels, high cholesterol and high blood pressure. Garlic is good for weight loss as it is an appetite controller. The benefits do not end here, it also protects us against cardiovascular problems, diabetes, blood pressure and respiratory issues. It keeps many kinds of infections at bay and is also considered as a cancer-fighting food item. Having two cloves of garlic early in the morning is said to keep sugar level and blood pressure in control.

Lentils: Lentils are high in fiber and protein, both of which helps to keep the blood sugar level in check. Lentils are also said to remove belly fat. A staple in our Indian diet lentils are very easy to cook and taste delicious with rice. Lentils are also rich in iron and Vitamin. Lentil is rich in protein and helps to lower sugar levels, blood pressure and keeps cardiovascular diseases at bay. It increases our energy. It is a rich source of proteins for vegetarians.

Bananas: Due to their high fiber content bananas help in weight loss. Bananas are low in fat and have low glycemic index (do not raise the blood sugar levels instantly). Bananas are also rich in antioxidants and are powerhouse of energy. Bananas can be paired up with milk, almond, egg and oats to make a healthy snack or breakfast. Bananas also have many other benefits like it improves digestion, controls blood sugar levels, aids weight loss, supports heart health, improve insulin sensitivity, good for kidney health and keeps you fuller for longer.

Tomatoes: Tomatoes being rich in Vitamin C, release a hormone after they are consumed. These hormones help to keep to fuller for longer. Tomatoes are low in calories and make a great food for weight watchers. Tomato helps to maintain the blood sugar levels, reduces cholesterol, boosts energy and acts as a detoxifier. Tomatoes are rich in antioxidants and reduce the risk of cancer.

Cabbage: Cabbage again is very low in calories and high in fiber Cabbage has many health benefits like it helps to purify the blood, good for stomach during constipation. It fights ageing, stomach problems and Alzheimer's disease. Cabbage not only helps you to lose weight but also helps to improve your skin, due to the presence of Vitamin C in it. Cabbage can be used in salads and soups. So apart from looking a beautiful green ball cabbage also has a lot of health benefits.

Spices: Indian cuisine is rich in whole spices. Let our food be cooked with whole spices like kadipatta, cardamom and cinnamon. Rather than using more fat to flavour food, use spices.

Relying on traditional millets and grains: Don't only limit to wheat and rice. Different varieties of grains like bajra, jowar, makki, or dry dals can be used to make delicious rotis and dosas which are real health supplements.

Benefits obtained from using copper and brass utensils

In the earlier times, copper utensils were used for drinking water, and brass plates or utensils were used for cooking and serving food.

Copper: Copper enhances the Sattva component and hence, it is used for an all-encompassing source like water. Awakening of the Panchapran (Five vital energies) transfers the sattvikta (Purity) of food into the body within a short period.

Brass: Brass leads in emission of subtle Tej (Absolute Fire Principle)-enhancing sound that has inherent gas. The food charged with this subtle-sound is conducive for awakening of the Panchapran in the body.

Conclusion

Our ancestors had a healthy food style and so had a healthy life style. The present generation is fond of foreign foods and get addicted to it because of the flavor and taste it adds to it. But it demands nutritional benefits. It is our responsibility to be reminded of the nutritional benefits of our traditional everyday food and having the practice of taking food as our medicine to lead a healthy and happy life.

“Eat Healthy and Stay Healthy”

REFERENCE :

Sanatan's Holy Text “Components required for cooking a meal”

<http://www.healthfitnessrevolution.org>

<https://timesofindia.indiatimes.com/life-style/health-fitness/diet/20-weight-loss-foods-in-every-Indian-kitchen/articleshow/18145801.cms>



ANALYSIS OF ENDURANCE BETWEEN INTERCOLLEGIATE KABADDI AND KHO- KHO PLAYERS – A STUDY

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ABSTRACT

Kabaddi is one of the most popular games in India. It does not require any material or equipment. It does not require large area. Playing Kabaddi will improve physical and mental fitness, it develops the Neuro muscular co-ordination and with less expenditure it gives more recreation. This game shows a tremendous effect on respiratory system, circulatory system, nervous system and muscular system. Kabaddi has several fundamental skills such as cant, raid, side stepping, kicking, toe touch, defensive skills like ankle hold, wrist catch etc. Mastering the fundamental skills is very essential to improve the standard of the game. It is a team sport, which requires both skills Endurance, power and combines the characteristics of wrestling and rugby. It was originally meant to develop self-defence, in addition to responses to attack and reflexes of counter attack by individuals and by groups or teams.

KEYWORDS: *Fundamental, Individuals, Endurance, Defensive*

INTRODUCTION

Kho-Kho ranks as one of the most popular traditional sports in India. The origin of Kho-Kho is difficult to trace, but many historians believe, that it is a modified form of 'Run Chase', which in its simplest form involves chasing and touching a person. It is simple, inexpensive and enjoyable. It does, however, demand physical fitness, strength, speed and endurance. Dodging, feinting and bursts of controlled speed make this game quite thrilling. The purpose of the study was to assess the difference on endurance between the intercollegiate men Kabaddi and kho kho players. The purpose of the study was to analyse the endurance between kabaddi and kho-kho players of Osmania University of Hyderabad.

METHODOLOGY:

Selection of the Subjects:

To achieve the purpose of the study the scholar was randomly selected 100 players (50 players from Kabaddi and 50 players from kho- kho) who are regularly participating intercollegiate tournaments to Osmania University, Hyderabad.

Selection of the variable:

The variable for this study was Endurance.

Research Design:

The researcher was conducted a 600 yards run test for knowing the endurance of Kabaddi and kho kho groups. The subjects were asked to cover the distance of 600 yards on a standard track of 400/200 meters as fast as possible, with in their capacity either by walking or running or both. The timing was clocked and recorded in nearest full second

Statistical tools:

The independent 't' test was used for analysed the data. The level of significance was fixed at 0.05 levels.

Analysis of data:

TABLE-I
COMPUTATION OF 'T' RATIO ON ENDURANCE BETWEEN THE INTER
COLLEGIATE MEN KABADDI AND KHO KHO PLAYERS
GROUP STATISTICS

	Group	N	Mean	Std. Deviation	Std. Error Mean
endurance	Kabaddi	50	1.9474	.48970	.06925
	Kho Kho	50	1.7670	.33259	.04703

Above table shows the mean values of kabaddi and kho-kho players. Among these two games players the kho-kho players has showed more ability in endurance with better timing than kabaddi players. The kabaddi players had more standard deviation than kho-kho players' value.

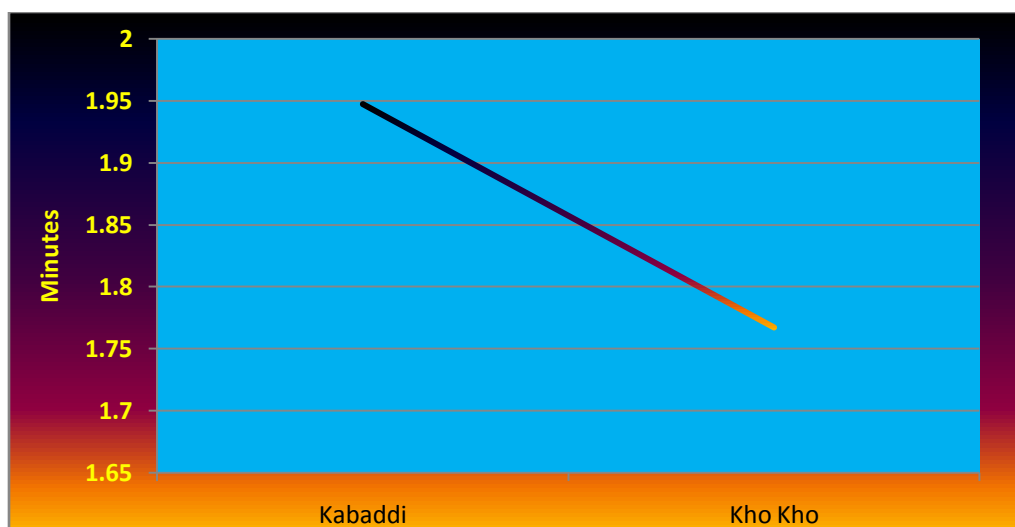
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
endurance	Equal variances assumed	2.165	.144	2.155	98	.034	.18040	.08372	.01427	.34653
	Equal variances not assumed			2.155	86.274	.034	.18040	.08372	.01399	.34681

Above independent 't' test results show that exact value of significance is 0.034 which is less than 0.05. Hence there was a significance difference in endurance between kabaddi and kho-kho players

FIGURE-I

bar diagram showing the mean difference between the inter collegiate men kabaddi and kho kho players on endurance



Above graph indicated the endurance ability between kabaddi and kho kho players. The regression line leaned from left to right. Therefore the kho kho players have more endurance level than kabaddi players.

DISCUSSION AND CONCLUSION

The results of the study reveals that, there is significant difference found on endurance between the Inter collegiate Kabaddi and kho kho players and also when comparing the mean values of endurance for the intercollegiate Kabaddi and kho kho players the inter collegiate Kho kho players were better than kabaddi players.

Based on the results of the study, it was concluded that there was significant difference found on endurance between the Inter collegiate Kabaddi and kho kho players of Osmania University. statistical results showed that exact value of significance was 0.034 which was less than 0.05. Hence there was a significance difference in endurance between kabaddi and kho-kho players

REFERENCES:

Dr. P. Senthilkumar (2015) Comparative Study of Speed Agility and Strength Endurance among Kho-Kho and Kabaddi Players *International Journal of Recent Research and Applied Studies* ISSN 2349-4891.

Rinku Tiwari, Dr. Reeta Venugopal (2015) To develop a tapping skill test for kho-kho female players *International Journal of Applied Research* 164-166.



A QUALITATIVE ANALYSIS OF THE EFFECT OF PHYSICAL ACTIVITIES ON THE ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS

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ABSTRACT:

Physical activity is any bodily movement which requires energy expenditure which maintains or enhances physical fitness and helps to prevent stress and depression promoting self-esteem. Physical inactivity leads to risk factor of mortality. Regular physical activity in schools can help children have good fitness, build strong bones and muscles, reduces symptoms of anxiety and depression, and keeps the students with good mental health. In this study the investigator has randomly selected 30 high school students, out of which 15 are boys and 15 are girls. The samples were selected and interviewed based on their active participation in three different categories of activities namely games, singing and dancing and painting. The data obtained through interview and academic records revealed that the students practicing physical activity like games showed good academic performance when compared with the students who showed interest towards singing, dancing and painting.

KEYWORDS: *Physical Activity, Academic Performance*

INTRODUCTION:

Education plays a fundamental role in moulding a man as a culturally well developed social being. Education aims at all round development which can be achieved not only through mere paper and pencil class room education but through both curricular and co curricular activities. Co curricular activities such as games, dancing, singing and arts typically take place outside the classroom environment. Extracurricular activities give the students a platform to enhance particular skills and exhibit their non academic abilities. Among all the co curricular activities physical activity such as Volley ball, Throw ball, Basket ball and athletics plays a vital role in imbibing the art of living and working together and in enhancing intelligence. It renders a number of values such as educational values, physical developmental values, psychological values, development of social values, civic values, recreational values, and cultural values. Participation in physical activities will create qualities of hardworking, dedication, and team work.

Physical Activity:

Physical activity is any activity that helps to gain physical fitness and mental freeness. This includes activities such as dancing, singing, sports etc. It has been proved in many cases that a person who is physically active has higher chances of living longer. Physical activities have the ability to enhance the quality of life by giving active strength to the muscles and body making it more reliable and weight bearing. It helps in the formation of new bone tissue and this makes bones stronger. Physical activities help to overcome lots of diseases such as Diabetics, Obesity, Blood Pressure and many other diseases. It also benefits the school students in maintaining good health, improving concentration in studies, creates opportunities and also develops the sense of responsibility. Physical activity not only helps them to be physically fit, but also help them to develop certain good qualities like leadership, teamwork and punctuality. On the whole the students who indulge in physical activities will have a sound mind and sound body.

REVIEW OF LITERATURE:

Bolm et al.,(2011) have found that there was a significant positive correlation between fitness and test scores and also found a negative relationship between fitness and attendance. These findings demonstrated that the more fit students are, the more likely to achieve at a high level. Another National Educational Longitudinal Study conducted by **Broh (2002)** helped to test the effect that participation in extracurricular activities such as athletics had on high school achievement. The author analyzed the data and reported that participation in athletics resulted in an increased development and a higher degree of academic achievement among students. **Jordan (1999)** investigated the relationship between the effects of sports participation on various school engagement and student self-evaluative variables, controlling for background characteristics such as socioeconomic status and gender and found that sports participation improved the school engagement and academic self-confidence of all student athletes.

OBJECTIVES OF THE STUDY:

Research question

Do different physical activities enhance the academic achievement of students?

Is there a effect of gender in the academic achievement of students who actively participate in physical activities?

METHODOLOGY:

The study was conducted to know the “The effect of Physical activity on the Academic Performance of High school students”. With the knowledge of the nature of the present study, survey was adopted for the investigation.

Sample and Locale of the Study:

The investigator has used multistage sampling to select the sample for the study and the final sample consisted of 30 high school students of Gudalur in Nilgiris district. The participants of the study consisted of 15 boys and 15 girls.

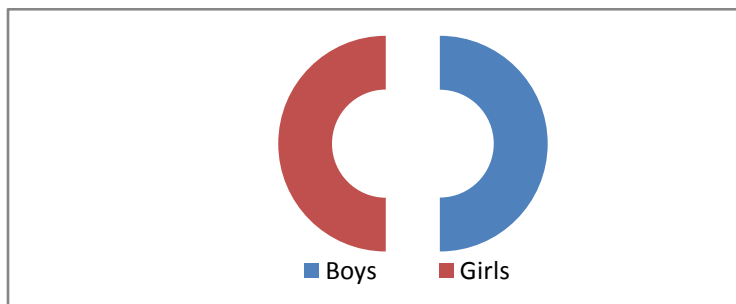


Fig.1. Gender wise distribution of samples

Tools Used for the Present Study:

- Personal data sheet (prepared by the investigator).
- Interview schedule validated by the investigator.

Interview schedule.

The investigator prepared an interview schedule with 30 questions which was validated using content and face validity and the final interview schedule used for the study consisted of 20 questions related to the interest in different activities, duration of practice, prizes and awards won for participating in their respective fields of interest.

Data collection and Data analysis:

The investigator first selected all the sixty students available in the VIII standard of the school and interviewed them and the students who are really practicing the different activities like singing, dancing, painting, and participating in sports and games were selected for the study. Of the 45 sample who were actively participating in the activities mentioned were again analyzed and the students who have got prizes and are good at singing, dancing, painting and in sports were finally selected for the study and hence the final sample consisted of 30 samples.

The data collected was analyzed using percentage analysis and it was found that **35 percent** of the students were interested in dancing and singing and **25 percent** of the students showed their interest in drawing and painting and **40 percent** of the students were interested in physical activities like Foot ball, Volley ball, Basket ball, and athletics. The academic performance of the students selected for the study was taken from the previous records of the schools and it was used for the study to analyze the effect of physical activity on academic performance.

When the academic records were analysed it was found that the students who prefer physical activities like Volley ball and Basket ball showed better achievement scores than the students who were actively participating in Singing, Dancing, drawing and painting. When the percentage analysis was made gender wise, the data revealed that the girls showed high academic performance than the boys and **57 percent** of girls who showed interest in athletics and volley ball had scored more academically whereas **43 percent** of boys practicing games and sports have scored better academic scores.

CONCLUSION:

The findings of the study shed light on the effects of physical activity on the academic performance of high school children. This helps us to understand the importance of participation in physical activity like games and it brings out the truth that the students who participate in physical activity are able to perform well in games and also in education. They are able to concentrate in all the activities and come up with laurels when compared to others. This study believes that these findings may help to know the importance of physical activity and it also serves as a guide to take decisions to participate in physical activities. In schools physical activities must be given equal importance and necessary facilities must be made, so that the children may be attracted and may involve themselves voluntarily in physical activities.

REFERENCE:

- Broh, B. A. (2002). Linking extracurricular programming to academic achievement: Who benefits and why? *Sociology of Education*, 75(1), 69-95
2. Jordan, W. J. (1999). Black high school students' participation in school-sponsored sports activities: Effects on school engagement and academic achievement. *The Journal of Negro Education*, 68(1), 54-71.
3. Bolm, L. C., Alvarez, J., Zhang, L., & Kolbo, J. (2011). Association between health-related physical fitness, academic achievement and selected academic behaviors of elementary and middle school students in the state of Mississippi. *International Council Health Physical Education Recreation Sport and Dance. Journal of Research*, 6(1), 13-19. Retrieved from <http://www.ichpersd.org/index.php/journal/ichpersd-journal-of-research>
4. Lee, A. L. (1996). Self-esteem of adolescent athletes. Retrieved from <http://files.eric.ed.gov/fulltext/ED398526.pdf>



EFFICACY OF AEROBIC EXERCISES ON AGILITY AMONG WOMEN VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the efficacy of aerobic exercises on agility among collegiate level women volleyball players. To achieve the purpose of the study 45 women volleyball players who had represented intercollegiate level games, from various Colleges of Kalasalingam Academy of Research and Education, Srivilliputur, Tamil Nadu, India, were selected as subject. The age of the selected subjects were ranged from 18 to 22 years. The selected subjects (N=45) were classified into three equal groups of fifteen each (n=15) at random. Group-I underwent moderate intensity aerobic training, group-II underwent high intensity aerobic training and group-III acted as control. The duration of the training period was restricted to eight weeks and the number of sessions per week was confined to three. Control group was restricted to participate in any specific training programme. The data was collected on agility from the experimental and control groups two days before and two days after the training programme. The collected data were statistically analyzed by means of Analysis of Covariance to interpret the influence of different intensities of aerobic training on agility. In all the cases the level of confidence was fixed at 0.05 for significance. The result of the study reveals that due to the eight weeks of moderate and high intensity aerobic training, agility of the subjects were significantly improved. However, no significant differences existed between moderate and high intensity aerobic training groups in altering agility.

KEYWORDS: Moderate And High Intensity Aerobic Training And Agility.

INTRODUCTION

Sports science has made rapid progress in the last few decades. Theory and the methods of sports training was a subject of central importance among the various disciplines and it has developed rapidly. Sports performance can be enhanced through training and competition. The recent trend is to improve the physical fitness standards through scientific and systematic training. In the present world of sports, the physical fitness factors have been regarded as one of the important measures for achieving elite levels of sports performance.

Sports training are the basic preparation for better performance through physical exercise. Trainings are meant for the improvement of specific physical Aerobic exercises are powerful and aerobic exercise needs to be a part of our fitness program. Aerobic exercise (also known as aerobics, cardiovascular exercise) is any sustained rhythmic activity that primarily uses of larger muscles, such as quadriceps and hamstrings, and challenges heart and lungs. Aerobic means "with oxygen," so when the exercise aerobically body uses oxygen to help produce energy during the exercise. Heart and lungs have to work harder to continuously deliver oxygen to body during aerobic exercise, and this strengthens the heart and lungs.

Aerobic training consists of performing low-to medium-intensity exercise for long periods of time. Such as jogging or running several miles or kilometers to hundreds of miles; cycling dozens of miles to thousands of miles; swimming hundreds of yards or meters to dozens of miles or kilometer. Athletes are trained for endurance to compete in 5 kilometer and 10 kilometer races, marathons, ultra marathons, triathlons, Century bike rides, mountain biking and so on. Non-athletes can be trained similarly with an aerobic workout to burn calories and fat.

It is important to know how aerobic training influences adaptations in motor ability components and physiological parameters when selecting an optimum training regimen for a specific sport or for improving fitness in the general community. Pate and Kriska, (1984) have described a model that incorporates the three major factors accounting for inter individual variance in aerobic endurance performance: maximal oxygen uptake ($VO_2\text{max}$), lactate threshold (LT), and work economy. Thus, the model should serve as a useful framework for comprehensive examination of the effects of aerobic training on motor ability components and physiological parameters.

The sound knowledge of the various training methods are most required for the coaches, trainers and players to achieve the goal. Through the study of science and various sports training, researchers have developed a greater understanding on how the human body reacts to exercise, training and many other stimuli. The effects of aerobic training on motor ability components is useful research objectives and it has drawn the attention of the investigator. The present scientific study is one of the efforts to explore and suggest a best scientific method for the development of motor ability components and physiological parameters.

METHODOLOGY

The purpose of the study is to find out the Efficacy of aerobic exercises on agility among collegiate women volleyball players. To achieve the purpose of the study 45 women volleyball players who had represented intercollegiate level games, from various Colleges of Kalasalingam Academy of Research and Education, Srivilliputur TamilNadu, India, during the academic year 2014-2015 were selected as subject. The age of the selected subjects were ranged from 18 to 22 years. The selected subjects (N=45) were classified into three equal groups of fifteen each (n=15) at random. Group-I underwent moderate intensity aerobic training, group-II underwent high

intensity aerobic training and group-III acted as control. Control group was restricted to participate in any specific training programme. The experimental groups I and II performed moderate and high intensity aerobic training alternatively three days in a week for eight weeks. In this present investigation continuous running was given to the women volleyball players as aerobic training. The method of doing aerobic exercises was explained to the subjects before starting the training. The Experimental group did only the experimental treatment given to them on alternate days for a period of twelve weeks only in morning session in between 6.30 am to 8.00 am under the personal supervision of the researcher. Every week the work out sequence was increased as per the principles of load progression. To fix the training load for the moderate and high intensity aerobic training groups, the subjects were examined for their exercise heart rate in response to different work bouts, by performing continuous running of two minutes duration for proposed repetitions and sets, alternating with active recovery based on work-rest ratio. The subject's training zone was computed using Karvonen formula and it was fixed at 60% HRmax to 75% HRmax for moderate intensity aerobic training and 80% HRmax to 95% HRmax for high intensity aerobic training. Agility was assessed by shuttle run. The data obtained analyzed by analysis of covariance (ANCOVA) to assess the significant differences among the groups between the pre test and post test on agility of women volleyball players. The adjusted post test mean differences among the experimental groups were tested and if the adjusted post test result was significant the Scheffe's post hoc test was used to determine the significance of the paired means differences (Thirumalaisamy, 1995). The level of significant was fixed at 0.05

TABLE – 1
ANALYSIS OF COVARIANCE ON AGILITY OF EXPERIMENTAL AND CONTROL GROUPS

	Moderate Intensity Aerobic Training Group	High Intensity Aerobic Training Group	Control Group	S O V	Sum of Square	df	Mean Square	'F' ratio
Pretest Mean	10.24	10.42	10.13	B	0.643	2	0.322	0.57
SD	0.55	0.69	0.76	W	23.64	42	0.563	
Post test Mean	9.76	9.59	10.16	B	5.105	2	2.553	6.11*
SD	0.54	0.48	0.75	W	17.554	42	0.418	
Adjusted Post test Mean	9.78	9.63	10.26	B	6.112	2	3.056	33.22*
				W	3.777	41	0.092	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 2 and 42 is 3.23 and degree of freedom 2 and 41 is 3.22) *Significant at .05 level of confidence

The post-test means and standard deviation on agility of moderate and high intensity aerobic training and control groups are 9.76 +0.54, 9.59+0.48 and 10.16+0.75 respectively. The obtained „F” value of 6.11 on agility is greater than the required table Avalue of 3.23 at 2, 42 df at 0.05 level of confidence. It implied that significant differences exist between the three groups during the post test on agility. The adjusted post-test means on agility of moderate and high intensity aerobic training and control groups are 9.78, 9.63 and 10.26 respectively. The obtained „F” value of 33.22 on agility is greater than the required table value of 3.22 of 2, 41 df at 0.05 level of confidence. Hence, it is concluded that significant differences exist between the adjusted post test means of moderate and high intensity aerobic training and control groups on agility.

Since, the obtained „F” value in the adjusted post test means is found to be significant, the Scheffe’s test is applied as post hoc test to find out the paired mean difference, and it is presented in table-2.

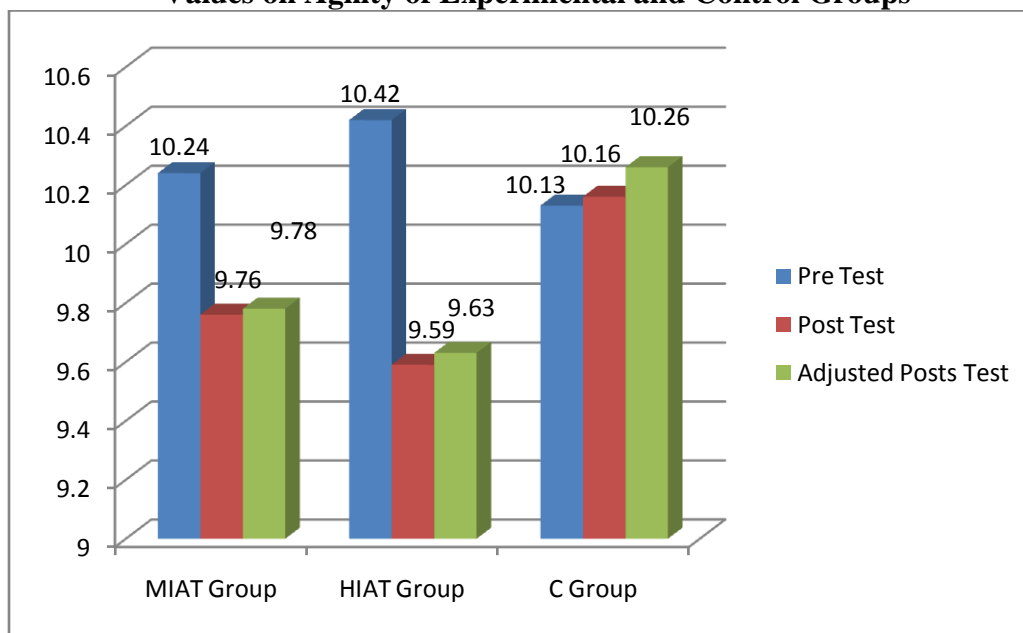
TABLE -2
SCHEFFE’SPOST HOC TEST FOR THE DIFFERENCES AMONG PAIRED MEANS
OF EXPERIMENTAL AND CONTROL GROUPS ON AGILITY

Moderate Intensity Aerobic Training Group	High Intensity Aerobic Training Group	Control Group	Mean Difference	Confidence Interval
9.78	9.63		0.15	0.28
9.78		10.26	0.48*	0.28
	9.63	10.26	0.63*	0.28

*Significant at .05 level

The Scheffe’s post hoc analysis proved that significant mean differences existed between moderate intensity aerobic training and control groups, high intensity aerobic training and control groups on agility since, the mean differences 0.48 and 0.63 are higher than the confident interval value of 0.28 at 0.05 level of significance. However the mean differences between moderate and high intensity aerobic training groups is 0.15 which is lesser than the confident interval value of 0.28 at 0.05 level of significance.

Figure – I
Diagram Showing the Pre Post and Adjusted Post Test Mean
Values on Agility of Experimental and Control Groups



DISCUSSION AND CONCLUSION

Hence, it is concluded that due to the effect of moderate and high intensity aerobic training the agility of the collegiate level women volleyball player is significantly improved. It is also concluded that no significant differences existed between moderate and high intensity aerobic training groups in altering agility of the women volleyball players.

The results of the study are in agreement with several reports. Alpert B et al., (2014) Investigated effects of aerobic exercise on a sample of 24 preschoolers. The findings suggest that cardiovascular fitness, agility, and self-esteem can be facilitated in preschoolers by an aerobic exercise program. Rajaram R (2015) findings suggests that due to the effect of aerobic training improved agility of the experimental groups.

REFERENCES

- Andriolo RB , El Dib RP , Ramos L, Atallah AN , da Silva EM.(2010) Aerobics exercise Training programmes for improving physical and psychosocial health in adults with down Syndrome . *Cochrane Database Syst Rev.* 12:(5)
- Tirumalaisamy R (1995), "Statistics in Physical Education", Karaikudi: Sentil Publishers, pp.479.
- Singh Hardayal. (1984) 1st Edition, Sports training, general theory and methods, Patiala, Nethaji Subhas National Institute of Sports, Printed by Roy Mangla .J at Phulkian press, Pulkian Marg, , p.16-23.
- Subramanyam, Sarada and Madhavankutty, K. (1995). Text book of Physiology, (New Delhi: S.Chand and Company, P.123.

Wilmore, Jack H., and Costill, David L.(1994) *Physiology of Sports and Exercise*, Champaign: Human Kinetics.

Parks, Janet B. and Zanger, Beverly Rok.(1996). *Sports and Fitness Management*, Human Kinetics Book Publications, Champaign Illinois, p.106.

Clarke., H. Harrison (1976) *Application of Measurement to Health and Physical Education*, Englewood cliffs; N.J. prentice Hall Inc. p.169.

Clarke and Clarke (1989). *Application of Measurements to Physical Education*, 154.



RELATIVE EFFECT OF MESSAGE MANIPULATIONS AND PLYOMETRIC TRAINING LONGJUMP PERFORMANCE MOTHER THERESA WOMEN UNIVERSITY ATHLETICS.

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ABSTRACT

The purpose of the study was to find out the effect of plyometric training and massage on long jump performances. To achieve this purpose of the study, thirty male students from the Mother Theresa Women University were randomly selected as subjects and they were divided into three equal groups. Each group consisted of the ten subjects. Group – I underwent plyometric training, group –II underwent massage for three days per week for thirteen weeks and group – III acted as control who were not participate any special training apart from the regular curricular activities. The subjects were tested on long jump performance at prior to and immediately after the training period. The selected criterion variable such as long jump performance was measured by using running long jump. The analysis of covariance (ANCOVA) used to find out the significant difference if any, between groups on each selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

KEYWORDS: *Plyometric, Appropriate, Considered,*

INTRODUCTION

Today's world is a world of competition and this is very true to sports and games. In fact it has become prestige issue to win medal at the international level. This has resulted in countries sparing no effort to achieve goals; multimillions are spent on research projects to invent much new techniques and technology to achieve excellence. Sports have a very important role in modern society. It is important for an individual, a group, a nation and in need the world. Sports performance is the result and expression of the total personality of a sports man. The development of a sports man enabling him to achieve high level of performance is usually concerned in four areas namely physical power, social adjustment, psychological development and physiological efficiency. Different activities make different demands on the organism with respect to circulatory, respiratory, metabolic and neurological and temperature regulating functions.

Selection of Variables

Jump is a basic need for the human movement to reach successful performance in sports and games. The jump is the vital role of the physical fitness. One of the most effective and efficient methods to enhance various aspects of jump is the plyometric training methods.

Massage is also selected as treatment variable. It generally accepted meaning of the word; massage includes a great number of manipulations of the tissues and organs by the body for therapeutic purposes.

METHODOLOGY

Selection of Subjects

The purpose of the study was to find out the effect of plyometric training and massage on the long jump performances. To achieve this purpose, thirty male students studying in Mother Theresa Women University were randomly selected as subjects. They were divided into three equal groups and each groups consisted of 10 subjects. Group-I underwent plyometric training, group-II underwent massage training for three days per week for thirteen weeks and group-III acted as control who were not participate any special training apart from the regular curricular activities.

TABLE-I TESTS SELECTION

Sl.No.	Criterion Variable	Test Item	Unit of Measurement
1	Long Jump	Running LongJump	Distance

Collection of the Data

The data on the long jump performance was collected with the help of administrating running long jump. The data were collected at prior and immediately after the training programme separately for each criterion variables.

Reliability of the Data

The intra-class correlation was used to find out the reliability of the data on each criterion variables separately and they were presented in Table.

TABLE-II
INTRA CLASS CORRELATION CO-EFFICIENT VALUES ON SELECTED
CRITERION VARIABLES

Sl.No.	Tests	'r' Value
1	Runnin LongJump	0.89*

*Significance at .01 level of confidence.

(Table value require for significance at .01 level of confidence with df 9 was 0.767)

Training Programme

During the training period, the experimental group-I underwent plyometric training, experimental group-II underwent massage. The training intensity was three days per week for thirteen weeks and group-III acted as control who were not participate any special training apart from the regular curricular activities. The training programmes carried out in the Department of Physical Education and Sports Sciences, Annamalai University campus used for this study. The subject underwent the respective programmes as per the schedules under the supervision of the investigator. Each training session was conducted only in the morning time. Prior to every training session both the groups had a ten minutes warm-up exercise involving jogging, calisthenics and stretching for plyometric training and for massage the relax there was no any warming period but they were remained in relaxed stature. All the subjects involving in the training programmes were questioned about their stature throughout the training period. None of them reported injury. However, muscle soreness and fatigue were reported in the early weeks only for plyometric training, which subsided later.

Experimental Design and statistical procedure

The random group design was used as experimental design. The purpose study was to find out effect of plyometric training and massage on long jump performance. To achieve this purpose, thirty male students from the Mother Theresa Women University were selected as subjects. They were divided into three equal groups of the subjects each. During the training period, the experimental group-I underwent plyometric training, group-II massage only. The training intensity was three days per week for eight weeks and group-III acted as control, which did not participate any special training apart from the regular curricular activities. The selected subjects were tested on selected criterion variables at prior to and immediately after the training programmes and were statistically examined for significant differences, if any, by applying analysis of covariance (ANCOVA). In all the cases, .05 level of confidence was used to test the significance, which was considered as an appropriate.

ANALYSIS OF THE DATA RESULTS OF THE STUDY

The purpose of the study was to find out the effect of plyometric training and massage on long jump performances. To achieve this purpose of the study, thirty male students from the Mother Theresa Women University were randomly selected as subjects and they were divided into three equal groups. Each group consisted of the ten subjects. Group – I underwent plyometric training, group –II underwent massage for three days per week for thirteen weeks and group – III acted as control who were not participate any special training apart from the regular curricular activities. The subjects were tested on long jump performance at prior to and immediately after the training period. The selected criterion variable such as long jump performance was measured by using

running long jump. The analysis of covariance (ANCOVA) used to find out the significant difference if any, between groups on each selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

LONG JUMP

The analysis of covariance on long jump performance of experimental groups and control group are analysed and presented in Table - III

TABLE – III
ANALYSIS OF COVARIANCE ON LONG JUMP PERFORMAMANCE
OF PLYOMETRIC MASSAGE AND CONTROL GROOUPS

	Plyometric Group	Massage Group	Control Group	SOV	Sum of Squares	Df	Mean Square	'F' ratio
Pre-test Mean	4.61	4.75	4.70	B:	0.103	2	0.051	1.54
S.D.	0.11	0.19	0.23	W:	0.90	27	0.033	
Post-test Mean	4.94	4.44	4.64	B:	1.19	2	0.060	10.40 *
S.D.	0.088	0.28	0.29	W:	1.54	27	0.057	
Adjusted Post-test Mean	5.01	4.37	4.63	B:	1.78	2	0.089	35.37 *
				W:	0.654	26	0.025	

*Significant at .05 level of confidence.

(The table value for significance at 0.05 level of confidence for 2 and 27 and 2 and 26 are 3.37 and 3.36)

Table – III shows that the pre-test means of long jump performance for plyometric training group, massage group and control group were 4.61 ± 0.11 , 4.75 ± 0.19 and 4.70 ± 0.23 respectively. The obtained 'f' ratio value of 1.54 for pre-test score of plyometric training

group, massage group and control group on long jump performance was less than the required table value of 3.27 for significance with df 2 and 27 at .05 level of confidence.

The post-test mean values of long jump performance for plyometric training group, massage group and control group were 4.94 ± 0.088 , 4.44 ± 0.28 and 4.64 ± 0.29 respectively. The obtained 'f' ratio value of 10.40 for post-test scores of plyometric training

group, massage group and control groups was more than the required table value of 3.27 for significance with df and 27 at .05 level of confidence.

The adjusted post-test mean values of plometric training group, massage group and control groups were 5.01, 4.37 and 4.63 respectively. The obtained 'f' ratio value of 35.37 for adjusted post-test scores of plyometric training group, massage group and control group was more than the required table value of 3.28 for significance with df 2 and 26 at .05 level of confidence.

The above statistical analysis indicates that there was a significant improvement in long jump performance after the training period. Further to determine which of the paired means has a significant increase, Scheffe S test was applied. The result of the follow-up test is presented in Table-IV

Table- IV
SCHEFFE S TEST FOR THE DIFFERENCE BETWEEN THE
ADJUSTED POST-TEST MEAN OF LONG JUMP PERFORMANCE

Adjusted Post-test Mean				
Plyometric Training Group	Massage Group	Control Group	Mean Difference	Confidence Interval at .05 level
5.01	4.37		0.64*	0.23
5.01		4.63	0.38*	0.23
	4.37	4.63	0.26*	0.23

*Significant at .05 level of Confidence.

Table-IV shows that the adjusted post-test difference in long jump performance between plyometric training group and massage group was 0.64 and plyometric training group and massage group was 0.38, which was significant at .05 level of confidence. The adjusted post-test mean difference between massage group and control group was 0.26, which was also significant at .05 level of confidence but in favour of control group. It may be concluded from the results of the study that there was a significant improvement of long jump performance after the plyometric training. But the massage group shows the significant decrease in the performance of long jump when compared with plyometric training and also with control group. This is due to the nature of massage treatment. The means values of plyometric training group, massage group and control on long jump performance were graphically represented in figure-I

CONCLUSIONS

The result of the study reveals that the plyometric training was significantly improved the long jump performance. And also there was a significant improvement after the plyometric training on long jump performance when compared with massage and control group. There was decrease in long jump performance after the massage when compared with the plyometric training group and control group.

REFERENCE:

Clarke, Harrison, Application of Measurement of Health and Physical Education, Englewood Cliffs: New Jersey Prentice Hall, 1976.

Kalf, C.E. and D.D. Aruheim, Modern Principles of Athletic Training, St. Louis: The C.V. Mosby Publishers, 1963. Singh, Hardayal, Sciences of Sports Training, New Delhi: D.V.S. Publication, 1991.

Clutch, David, et al. "The Effect of Depth Jumps and Weight Training on Leg Strength Vertical Jump." Research Quarterly, 15:21, 1998.

Diallo, O. and others, "Effects of plyometric Training Followed by a Reduced Programme on Physical Performance in Prepubescent Soccer Players", Journal of Sports Medicine and Physical Fitness, 4:1, March 2001

Kabushiki and Stevens, The Effect of Plyometric Training and Strength Training on the Muscular Capacities of the Trunk”, Medicine and Science in Sport and Exercise, 28:15,1996.

Sands, W.A., et al., “Comparison of the Wingate and Bosco Anaerobic Tests”, Journal of Strength and Conditioning. Research,18:4,2004



SPORTS SPONSORSHIP IN INDIA

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ABSTRACT

The relationship between sports-related event sponsorship and stock market valuation and identify factors that influence the financial rewards of sponsorship using World Cup and PGA tour sponsorship data. In particular, relationship between sports sponsorship with financial performance is examined in teams of sponsorship fit, event characteristics, and brand equity. Event study result that sponsorship for world cup and PGA is positively related to abnormal returns. Regression analysis indicates that unexpectedly brand equity and U.S. country of Origin is negatively associated with financial performance, However, U.S. sponsors with top brand value boost their abnormal stock return. Product fit enhances Short-term financial performance but the significant impact of event type on financial outcome was not observed.

KEYWORDS: *Sport Sponsorship, Sports Marketing, Event Study, Brand Equity, Sponsorship Fit.*

INTRODUCTION:

Many Companies make investment to sponsor the big sports events such as Olympic, World cup and popular sports games. Although being official sponsor requires a huge amount of financial resource, it is expected to create more favorable outcomes including profit increase, improved stock returns, and positive advertising effect. While sports sponsorship was 7.8% of the size of advertising expense in 1985, they were 13.9% of the size in 2006 (BMI sport info.) Coca-Cola spent \$40 million to become an official sponsor of 1996 Olympic Games and an estimated \$5000 million to maintain this sponsor status (Shani andsandler 1996, opportunities are increasing for companies to connect their brands with the world's most recognized sporting event (Syracuse, 2004). For example Bridgestone responded quickly when electronics form NEC announced to drop sponsorship of the PAG tournament, Bridgestone was eager to raise awareness for Bridgestone was eager to raise awareness for Bridgestone Golf on the consumer level, and to develop a unique story against its competitors on trade level (Meyer, 2006) Given this marketers have paid attention to the effectiveness of sports-related event sponsorship. The effect of sports sponsorship has been examined either in terms of consumer psychology or financial perspectives. However, Comprehensive explanation on effect of sponsorship of financial performance and consumer behavior mechanism have different point of view. The objective of this study is to investigate association between sports sponsorship and financial performance and to identify sponsorship characteristic that can enhance financially performance, in particular relationship between sports sponsorship with financial performance is examined terms of sponsorship fit, event characteristics, and brand equity. Based on literature review, a conceptual framework is developed and empirical testing is conducted using World Cup held in 1998, 2002 and 2006 and PGA golf tour in 2006 season case. Then, discussion about research findings and implication are followed empirical study.

Literature Review on Sponsorship:

"Sponsorship refers to provision of assistance either financial or in kind as activity to a commercial organization for the purpose of achieving commercial objective" (Meenaghan, 1983): Sports Sponsorship make it possible to link the aspiration and passion of a target audience to specific sports (Arun,2004) in general, sponsorship holds a unique position in the marketing mix because is effective in building brand awareness, providing differentiated marketing platforms, facilitating direct business benefit and providing valuable, networking and hospitality opportunities (ADREVIWE). The number of companies sponsoring events has increased over the past decade. However, it is somewhat unclear how the effectiveness of event marketing activities can be measured. As mentioned earlier, approach to sports sponsorship can be divided into two research stream (See Table 1) One is the consumer psychology approach which incorporates effect of sports sponsorship in terms of consumers awareness, recognition and behavioral intentions.

Consumer Psychological Approach:

Consumer psychological approach to sports sponsorship has focused on consumer's cognitive and affective response. For example, awareness of sports sponsorship and brand name, recognition of sports event after termination and image fit between and sponsor are good example of research steam in perspective of consumer psychology and behavior (Bennett, Henson and Zhang, 2002, Koo, Morris and Flynn, 2006'Miloch and lambert, 2006; Mason and Cochetel, 2006;Harvey, Gray and Despain, 2006)

Financial Evaluation Approach:

With the increased use of event study on sports-related sponsorship, marketers are able to assess the economic value of sponsorship. Much effort has been made to investigate stock influence of sports sponsorship on response in stock market using event study. Abnormal stock return has been a good indicator to identify stock price changes in stock market because of sports sponsorship (Miyazaki and Morgan, 2001; Kim and Morris, 2003; prutt, Cornwell and clark, 2004, Sneath, Finney and Close, (2005).

The Financial Impact of Sponsorship:

As noticed earlier, many scholars proved that sponsorship may lead to increased financial performance using event study method. In these studies, sponsor's effort to contribute make sport event study successful would be converted to investor's positive evaluation of that sponsor company in two ways. On one hand being an official sponsor can be accepted in terms of advertisings as reliable appeal to consumers, investor and shareholders as well. Because we are living in the society flooded with mass advertising suing mass media, undifferentiated advertising has little effect on consumer purchase and stock Market value. In this sense, sports sponsorship, as unique advertising, is expected to persuade the existing investor and shareholder to invest additionally or to attract new investors to buy the stacks of the sponsoring company. The relationship between sports sponsorship and firm value has been identified using date on Olympic and NASCR sponsor (Miyazaki and Maorgan, 2001; prutt, Corwell and Clark, 2004) On the other hand, sponsorship company may enjoy the positive and socially responsible image from sports sponsorship. Investors might have favorable impression to sponsoring company because they believe sponsors make much effort to facilitate sports all over the world and provide scholarship for sports Player. Similarly by sponsoring sports event, Company may offer job opportunity to many sports Player to continue to continue to play on the ground or court under the stable financial environment. Given this, Sponsoring Company can be accepted as good fellows that fully understand social responsibility, resulting in increased investment from investors. Therefore,

Research Setting

METHODOLOGY:

The event study methodology is used to assess the impact of event's unexpected

Information on the firm's stock process. The efficient market hypothesis asserts that a stock reflects all public Information about the firm, this only unexpected information can change the price of a stock (Fama,Fisher,Jensen and Roll,1969). In marketing area, event study approach has been used to examine the financial consequences of the relationship structure (Houston and Johnson, 2000) to assess the impact of celebrity endorsement contracts on the unexpected profitability of a firm (Agrawal and Kamakura, 1995) and to evaluate how the stock market return associated with a brand extension announcement depends on brand equity components (Lane and Jacobson 1995), Commonly event study follows four basic steps.

Identifying an event to be studied modeling the expected shareholder returns, estimating the unexpected shareholder returns and analyzing the unexpected returns (Kim and Morris, 2003) Based on the process of event study. This study attempts to investigate the abnormal stock return following sports event and uses the CRSP Value Equally Weighted Return as the return on market index. After cumulative abnormal stock return is computed, regression modeling was

conducted to estimate CAR during sport event based on the independent variables identified earlier.

RESULT AND DISCUSSION:

This event study is applied to world cup and PGA. The expected shareholder returns are predicted using the past returns during the estimation period a control period of time before date of events. Thus the estimation period reflects a period not influenced by the events. This study set the estimation period as 225 days for world sup and PGA for 60 days before events.

Summary:

The concept of sports sponsorship still holds good in establishing effective and efficient advertising strategy in today's market place. In other words, sports sponsorship in one of the best ways to build a communication path toward consumers (Buchan 2006), the present study attempts to investigate the potential effect of sports sponsorship on changes in value in terms of stock price by adding sponsor's brand equity, sponsorship fit and event characteristics. Unfortunately, not every company sponsoring World Cup and PAG enjoys significantly positive cumulative abnormal returns but the short-term financial Performance can be enhanced by brand value. Product fit was identified as a potential driver that enhances Short-term financial performance. Brand equity and image fit between event and sponsoring company play key role in explaining the association between sponsorship and financial performance.

REFERENCES:

1. Agrawal, Jagdish and Wagner A Kamakura (1995), The Economic Worth of celebrity Endorsers: An Event study Analysis, Journal of Marketing. 59 (3), 56-62
2. Arun, Sudhaman (2004) Game,set and client Match, Media Asia, 9,28-29.Bennett, Gregg, Robin Henson and james Zhang (2002) Action Sports sponsorship Recognition, Sports Marketing Quarerly, 11 (3) 174-185. Buchan, Nick (2006), Sports Sponsorship-still Giving Enough bang for the Buck? Bet Weekly. 56 (2567).5
3. Crimmins, J and Hom M. (1996) Sponsorship from management Ego to Marketing success, J ournal of Advertising Research, 36 (4) 11-12.
4. Fama, Eugene F. Lawrence Fisher, Michael C.Jensen, and Richard Roll (19969) The Adjustment of stock prices to New Program Context Information, (Intemation Economic Review, 10 (1) 1-21.
5. Farrellyfrancis J. and Stepkhen A Greyser (2007), Sports Sponsorship to Rally the Home Team, Harvard Business Review, 85 (9),22-24
6. Fineweek (2007), Big Bucks still back sponsorship ADRVIEW, 72-73. Griffin, Cara (2005), The Main Event. SGB 38 (9) 22-26
7. Harvey Bill stu Gray and Gerald Despain (2006), Measuring the effectiveness of True Sponsorship. Journal of advertising Research, 45(4) 398-409.



COMBINED EFFECT OF AEROBIC DANCE AND YOGIC PRACTICE ON SELECTED COORDINATIVE ABILITIES OF SCHOOL BOYS

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ABSTRACT

The purpose of this study was to find out the combined effect of aerobic dance and yogic practice on selected coordinative abilities of school boys. The investigator selected 60 school boys from Ramakrishna Mission Vidyalaya high school and swami shivananda higher secondary school Coimbatore, their ages ranging from 13 to 15 years. The subjects were divided into two equal groups. Group 1 consist 30 subjects called as the experimental group and group 2 consist of 30 students called as the control group .The group I was assigned aerobic dance and yogic practice a period of 12 weeks training programme. The control group was not allowed to participate in any kind of treatment. The dependent variables namely, differentiation ability and space orientation ability was selected and measured by backward ball through test and numbered medicine ball run test for this study. The data was analysed by the use of paired 't' test. The obtained 't' ratio was tested for significance at 0.05 level of confidence. The analysis of the data revealed that there was a significant improvement on the selected variables namely differentiation ability and space orientation ability by the application of aerobic dance and yogic practice training programme.

KEYWORDS: Differentiation Ability, Space Orientation Ability.

INTRODUCTION

AEROBIC

In this competitive world, many people find it hard to dedicate time for physical activities like exercises, although one of their first priorities is to stay in perfect shape. Here comes the easy method of maintaining a perfect figure-dance aerobics. As the name suggests, dance aerobics is an exercise that combines the rhythmic steps of aerobics with graceful dance movements. High impact exercises involve intense jumping actions that are synchronized with the rhythmic beats of the music being played. Low impact exercise, the second type of dance aerobics, involves less jumping action, but more of footwork, which are co-ordinate with the rhythm of the music being played. Step aerobics is performed in a raised platform, while water aerobics is done in waist-deep water. Typically, a dance aerobic exercise is performed for about 20-30 minutes. The steps are performed in a rhythmic way, with 4 or 8 counts.

Generally every one's life is littered with music and dance either professionally or recreation or relaxation purpose. Dance and music is a basic human activity that can be ever changing because it is close to the pulse of life. Nowadays so many health centres, schools and colleges provide fitness program based on "aerobic dance"

YOGA

"Yoga is the art work of awareness on the canvas of body, mind, and soul." Yoga plays a vital role in every walk of life, now a day's everyone is searching of health, that is within them without knowing the concept they are searching here and there, Once they started learning yoga they will not come out from the healthy secret, It gives all round development to human both internal and external, One who know about and learn yoga they will practice regularly and try to teach everyone to learn yoga and preach about the innate wonders within them. If they are good enough to listen to their inner body's feelings and ideas yoga may add healthy life with good mental health, better attention, self-esteem and self-regulation with empowerment. Everybody now starts learning yoga and consuming the benefits, especially youth who are learning yoga in schools, colleges and universities to improve flexibility, sound mind, and to overcome the emotion and stress.

METHODOLOGY

For this study 60 school boys selected from Ramakrishna Mission Vidyalaya high school and swami shivananda higher secondary school Coimbatore and their ages ranging from 13 to 15 years. The subjects were divided into two equal groups. Group 1 consist 30 subjects called as the experimental group and group 2 consist of 30 students called as the control group .The group I was assigned aerobic dance and yogic training programme for a period of 12 weeks. The control group was not allowed to participate in any kind of treatment. The subjects were tested in the selected variables namely differentiation ability tested with backward ball throw test and space orientation ability tested with numbered medicine run test, before and after the training period. The collected data was treated by using paired t-test. The level of confidence was fixed at 0.05 level.

TABLE-I
COMPUTATION OF 'T'-RATIO BETWEEN THE PRE AND POST TESTS ON
DIFFERENTIATION ABILITY OF EXPERIMENTAL AND CONTROL GROUPS

Group	Test	M	SD	σ DM	DM	t-ratio	'p' value
Experimental	Pre Test	8.97	1.83	0.18	2.43	13.24*	0.01
	Post Test	11.40	1.38				
Control	Pre Test	9.00	2.56	0.06	0.10	1.79	0.08
	Post Test	9.10	2.52				

* significance at 0.05 level.

The table I indicates that there was a significant improvement on the differentiation ability through the combined training of aerobic dance and yoga practices. It reveals that the obtained t-ratio 13.24 is significant because the 'p' value is lesser than the 0.05, there was significant improvement between pre and post tests on the selected coordinative abilities. So there was a significant improvement on the differentiation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the differentiation ability was due to the combined training alone.

FIGURE – I
THE FIGURE SHOWING THE MEAN DIFFERENCE OF PRE AND POST-TESTS
SCORES ON DIFFERENTIATION ABILITY OF EXPERIMENTAL AND CONTROL
GROUPS

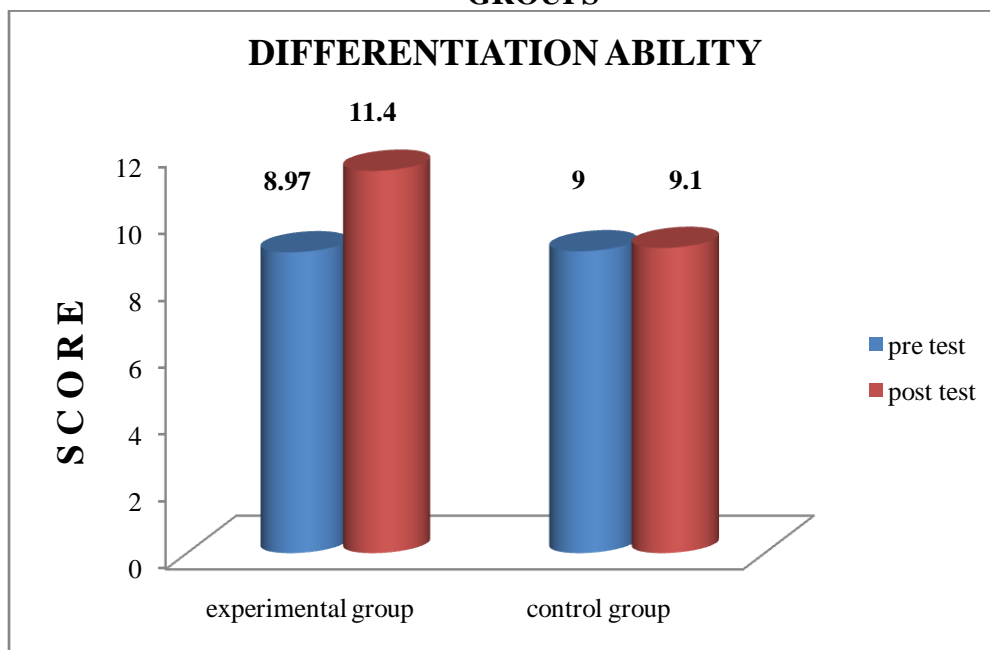


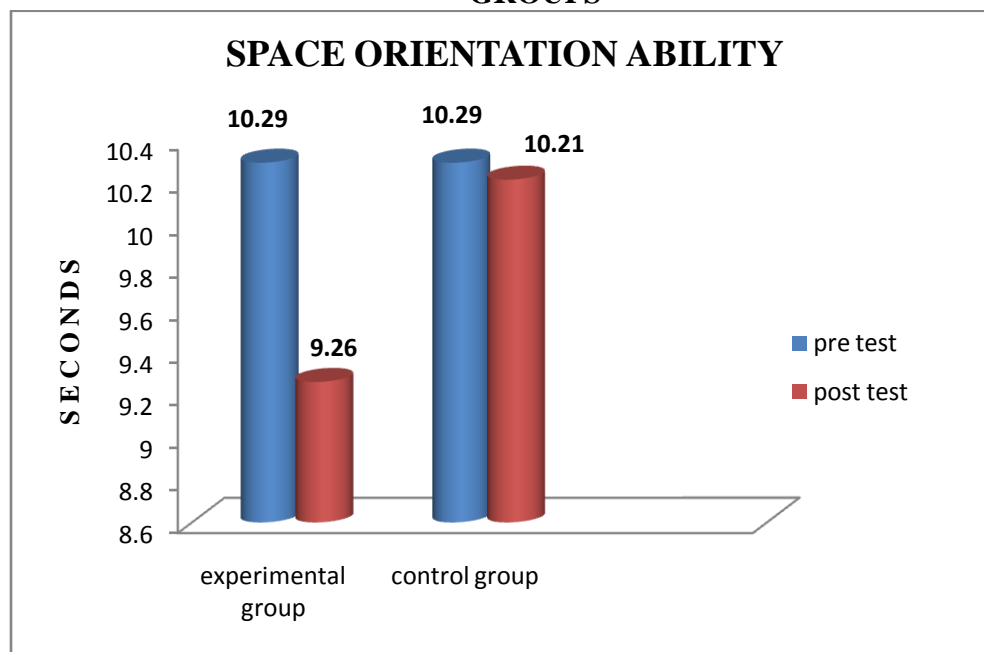
TABLE-II
COMPUTATION OF 'T'-RATIO BETWEEN THE PRE AND POST TESTS ON SPACE ORIENTATION ABILITY OF EXPERIMENTAL AND CONTROL GROUPS

Group	Test	M	SD	σ DM	DM	t-ratio	P
Experimental	Pre Test	10.29	0.79	0.07	1.02	14.69*	0.01
	Post Test	9.26	0.62				
Control	Pre Test	10.29	0.76	0.04	0.09	2.03	0.062
	Post Test	10.21	0.87				

* significance at 0.05 level.

The table II indicates that there was a significant improvement on the space orientation ability through the combined training of aerobic dance and yogic practice. It reveals that the obtained t-ratio 14.69 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and post tests on the space orientation ability selected coordinative ability. So there was a significant improvement on the space orientation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the space orientation ability was due to the combined training alone.

FIGURE – II
THE FIGURE SHOWING THE MEAN DIFFERENCE OF PRE AND POST-TESTS SCORES OF SPACE ORIENTATION ABILITY OF EXPERIMENTAL AND CONTROL GROUPS



DISCUSSION OF FINDINGS

The result of the study reveals that the twelve weeks of combined training programme of aerobic dance and yogic practice on the selected dependent variables there was a significant improvement on the differentiation ability through the combined training. It reveals that the

obtained t-ratio 13.24 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and post tests on differentiation ability. So there was a significant improvement on the differentiation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the differentiation ability was due to the combined training alone. The results of the study is in consonance with the research done by Koushik Bhowmik (2016).

The result of the study reveals that the twelve weeks of combined training programme of aerobic dance and yogic practice on the selected dependent variables there was a significant improvement on the space orientation ability through the combined training. It reveals that the obtained t-ratio 14.69 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and post tests on space orientation ability. So there was a significant improvement on the space orientation ability between pre and post tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the space orientation ability was due to the combined training alone. The results of the study is in consonance with the research done by Rajib Ghosh and Sebastian (2016).

CONCLUSIONS

It was concluded that there was a significant improvement on the selected variables namely differentiation ability and space orientation ability by the application of combined training programme of aerobic dance and yogic practices.

REFERENCE:

Koushik Bhowmik(2016)" effect of strength training on selected coordinative abilities"
International Journal of Adapted Physical Education & Yoga:1(1).

RajibGhosh, Dr. P.J. Sebastian(2016) "effect of kalaripayattu exercises on selected motor components and coordinative abilities of national level football players "*International Journal of Adapted Physical Education & Yoga*, 1,(2).



STAYING HYDRATED - A PHYSIOLOGICAL APPROACH

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ABSTRACT

The human body hasn't identified a true mechanism to store water yet and is utmost critical to gain fresh supplies every day to perform each metabolic process effectively. Any activity related to displaying performance or workout would demand for a balance in fluid intake which otherwise would result in excessive sweat owing to dehydration that increases the body temperature further. However, during initial days of hot-weather training or when meals are not calorically adequate, supplemental salt intake may be indicated to sustain sodium balance. Put back what you lose and you'll stay on top. But it's been shown that many people doing sports are dehydrated and drink at a rate that barely replaces 2/3rds of their fluid losses. Performance during exercise can be compromised by body water deficit, particularly when exercise is performed in hot climates. It is recommended that individuals begin exercise when adequately hydrated. This can be facilitated by drinking sufficient fluid during exercise to prevent dehydration.

KEYWORDS: *Facilitated, Sufficient, Dehydration, Recommended*

INTRODUCTION

Hydration is essential for the human body to function. The human body hasn't identified a true mechanism to store water yet and is utmost critical to gain fresh supplies every day to perform each metabolic process effectively. Babies and elders are susceptible to lack of water or dehydration often. Elders lose about 2.5L – 3L of water per day; not drinking sufficient water would likely increase the risk of kidney stones and in women, induces urinary tract infections.

Elderly Adults are about 60% water and every cell in our body depends on maintenance of water balance to work properly (Armstrong LE, et al, 2005). Water is essential for maintenance of good health, to channel nutrients and oxygen into cells, empower chemical reactions and transport waste out of our cells.

Fluid deficits of more than 1% body weight lead to reductions in exercise performance (Murray B, 2007). For example, study from a daily routine of dehydrated adults performing aerobics and endurance functions resulted in a steady decline in performance.

For every 1% of body weight we lose due to dehydration, our heart rate increases by 5 beats per minute (Coyle EF, 2004). This is because dehydration enforces additional strain on the heart's job of circulating blood.

Experts advise matching fluid intake to amount lost through sweating (Coyle EF, 2004).

Performing vigorous exercises would also require us to equate or balance the fluid intake by consuming about 100ml of water for every 15 minutes of workout. Studies also reveal that insufficient fluid intake is a major cause for headache and migraine.

It's a fact, most sportsmen and women don't drink enough to meet their needs (*Armstrong LE, et al, 2005*). Any activity related to displaying performance or workout would demand for a balance in fluid intake which otherwise would result in excessive sweat owing to dehydration that increases the body temperature further.

ADEQUACY OF HYDRATION

A normal human, while not exercising would require 2 litres of water to stay hydrated, that's about eight glasses of water over the course of the day to maintain optimal metabolism, regulate body temperature and numerous other physiological processes.

Approximate adequate daily intakes of fluids (including plain water, milk and other drinks) in litres per day such as for infants 0–6 months – 0.7 (from breast milk or formula), infants 7–12 months – 0.9 (from breast milk, formula and other foods and drinks), children 1–3 years – 1.0 (about 4 cups), children 4–8 years – 1.2 (about 5 cups), girls 9–13 years – 1.4 (about 5-6 cups), boys 9–13 years – 1.6 (about 6 cups), girls 14–18 years – 1.6 (about 6 cups), boys 14–18 years – 1.9 (about 7-8 cups), women – 2.1 (about 8 cups) and men – 2.6 (about 10 cups).

These adequate intakes include all fluids, but it is preferable that the majority of intake is from plain water (except for infants where fluid intake is met by breast milk or infant formula). Sedentary people, people in cold environments, or people who eat a lot of high-water content foods (such as fruits and vegetables) may need less water.

People need to increase their fluid intake when they are: on a high-protein diet or a high-fibre diet, as fluids help prevent constipation. For pregnant or breastfeeding women, the fluid need is 750 - 1000 ml a day above basic needs.

A practical recommendation is to drink small amounts of fluid (150-300 ml) every 15 to 20 minutes of exercise, varying the volume depending on sweating rate. Core temperature, heart rate, and perceived efforts remain lowest when fluid replacement comes closest to matching the rate of sweat loss.

Performance during exercise can be compromised by body water deficit, particularly when exercise is performed in hot climates. It is recommended that individuals begin exercise when adequately hydrated. This can be facilitated by drinking sufficient fluid during exercise to prevent dehydration.

For exercises lasting less than 90 minutes, water alone is sufficient for fluid replacement. For prolonged exercise lasting longer than 90 minutes, commercially available carbohydrate electrolyte beverages should be considered to provide an exogenous carbohydrate source to sustain carbohydrate oxidation and endurance performance. Electrolyte supplementation is generally not necessary because dietary intake is adequate to offset electrolytes lost in sweat and urine; however, during initial days of hot-weather training or when meals are not calorically adequate, supplemental salt intake may be indicated to sustain sodium balance.

HYDRATION ENHANCES PERFORMANCE

Research shows that replacing water during exercise actually enhances physical performance. In one study, amateur cyclists were found to ride 6.5% faster if they drank fluids during exercise. Trained runners racing at 1500m, 5km and 10km were seen to slow down by 3.1%, 6.7% and 6.3%, respectively, if they were dehydrated (**Sawka MN, 2007**).

HYDRATION ENHANCES ENDURANCE

Sports scientists have shown that people who are properly hydrated are more resistant and take longer to reach fatigue levels. In a study, time to exhaustion when cycling at high intensity was significantly increased when adequate hydration was achieved (**Walsh RM, et al, 1994**).

HYDRATION ENHANCES CARDIAC FUNCTION

Maintaining normal hydration during exercise maintains cardiovascular and thermoregulatory responses and improves exercise performance. Consequently, it is in the athlete's best interest to adopt fluid-replacement practices that promote fluid intake in proportion to sweat loss (**Robert Murray, 1995**).

Water loss during exercise leads to a decrease in plasma volume and blood flow. Your heart's capacity to work is then affected and your physical performance decreases along with a deterioration in aerobic capacity (**Sanchez-Gonzalez JM, et al, 2005**).

Put back what you lose and you'll stay on top. But it's been shown that many people doing sports are dehydrated and drink at a rate that barely replaces 2/3rds of their fluid losses (**Coyle EF, 2005**).

The mild dehydration levels can adversely affect mind. Not surprising given that the brains are about 75% water. Short periods of fluid restriction, the kind that cause a loss of body mass of 1-2% are shown to lead people to express feelings of tiredness, inability to concentrate and loss of alertness. Short-term memory loss and attention difficulties are seen at 2% (**Lieberman HR, 2006**).

CONCLUSION

The study discussed various facts and recommends the following tips to improve hydration of athletes to enhance performance.

- Keep a bottle of water handy.
- Take regular sips of water during exercise even when not thirsty.
- Drink extra water during hot climates or during excess sweating.
- For team sports or outdoor exercise, take a bottle of water and make time for regular hydration breaks.
- Drink half a litre of water two hours before any exercise.
- Drink a couple of glasses after exercising to match your water loss and maintain body's fluid balance.
- Include fibrous foods, water based and citrus fruits regularly in diet.
- Check with healthcare team for specific advice about your hydration needs.

REFERENCES

- Armstrong LE, et al. Hydration assessment techniques. *Nutr Rev* 2005;63(6 Pt 2):S40-54.
- Below PT, et al. Fluid and carbohydrate ingestion independently improve performance during 1 h of intense exercise. *Med Sci Sports Exerc* 1995;27(2):200-10.
- Blau JN. Water deprivation: a new migraine precipitant. *Headache* 2005;45:757-9.
- Convertino VA, et al. American College of Sports Medicine position stand. Exercise and fluid replacement. *Med Sci Sports Exerc* 1996;28(1):i-vii.
- Coyle EF. Fluid and fuel intake during exercise. *J Sports Sci* 2004;22:39-55.
- Howard G, Bartram J. Domestic water quantity, service level and health. WHO 2003.
- Lieberman HR. Hydration and cognition: a critical review and recommendations for future research. *J Am Coll Nutr* 2007;26(Suppl 5):S555-61.
- Maughan RJ. Impact of mild dehydration on wellness and on exercise performance. *Eur J Clin Nutr* 2003;57(Suppl 2):S19-23.
- Murray B. Hydration and physical performance. *J Am Coll Nutr* 2007;26(Suppl 5):S542-48.
- Pivarnik JM. Water and electrolytes during exercise 1994. In *Nutrition in Exercise and Sport*, ed. Hickson JF, and Wolinsky I. Boca Raton, FL: CRC Press, 245-62.
- Sanchez-Gonzalez JM, et al. Hydration status and aerobic capacity: effects on plasmatic volume during strenuous physical exercise. *Cir Cir* 2005;73(4):287-95.
- Sawka MN, et al. Exercise and fluid replacement. *Med Sci Sports Exerc* 2007;39(2):377-90.
- Shirreffs SM. Markers of hydration status. *J Sports Med Phys Fitness* 2000;40:80-4.
- Walsh RM, et al. Impaired high-intensity cycling performance time at low levels of dehydration. *Int J Sports Med* 1994;15(7):392-8.



EFFICACY OF REHABILITATION PROGRAMME AMONG PEP PLANUS ATHLETES ON PHYSICAL FITNESS VARIABLES

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ABSTRACT

Physical fitness is a general state of health and well-being and, more specifically, the ability to perform aspects of sports, occupations and daily activities. Physical fitness is generally achieved through proper nutrition, moderate-vigorous physical exercise, and sufficient rest. However, with automation and changes in lifestyles physical fitness is now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo kinetic diseases, and to meet emergency situations. The study was therefore to develop and evaluate a simple visual tool for foot posture assessment based on the Arch Index (AI) that could be used in clinical and research settings. The main objective of this study is to determine the effectiveness of rehabilitation programme influence to change the physical fitness variables after 12 weeks of training. To achieve this purpose 550 athletes tested by physical fitness such as speed, agility, coordination, reaction time, explosive power, and balance. The samples were selected from the regional athletes of Pondicherry, India. 78 athletes had flat feet from the total population, out of which forty voluntary participations were selected for this study. The selected subjects agreed and used one groups, such as experimental group (n=20). Experimental group was undergone training of rehabilitation programme for five days in a week for total twelve weeks. The Experimental groups tested prior (pretest) to training and after the rehabilitation period (posttest) on physical fitness variables. Based on the analysis of statistical results, it was concluded that, 12 weeks of rehabilitation programme significantly changed the physical fitness such as agility, coordination, reaction time, explosive power and balance for athletes.

KEYWORDS: *Rehabilitation Programme, Pes Planus, Athletes, Physical Fitness, Speed, Agility, Coordination, Reaction Time, Explosive Power, Balance.*

INTRODUCTION

Fitness is a condition in which an individual has sufficient energy to avoid fatigue and enjoy life. Physical fitness is divided into four health and six physical fitness components. Skill- or performance-related physical fitness involves skills that will enhance one's performance in athletic or sports events. Health-related fitness involves skills that enable one to become and stay physically healthy. There are six physical fitness components: agility, balance, coordination, speed, explosive power, and reaction time. Skilled athletes typically excel in all six areas. Agility is the ability to change and control the direction and position of the body while maintaining a constant, rapid motion. For example, changing directions to hit a tennis ball. Balance is the ability to control or stabilize the body when a person is standing still or moving. For example, in-line skating. Coordination is the ability to use the senses together with body parts during movement. For example dribbling in basketball. Using hands and eyes together is called hand-eye coordination. Speed is the ability to move your body or parts of your body swiftly. Many sports rely on speed to gain advantage over your opponents. For example, a basketball player makes a fast break to perform a layup, a tennis player moving forward to get to a dropshot, a football player out running the defense to receive a pass. Power is the ability to move the body parts swiftly while applying the maximum force of the muscles. Power is a combination of both speed and muscular strength. For example, fullbacks in football muscling their way through other players and speeding to advance the ball and volleyball players getting up to the net and lifting their bodies high into the air. Reaction Time is the ability to reach or respond quickly to what you hear, see, or feel. For example, an athlete quickly coming off the blocks early in a swimming or track relay, or stealing a base in baseball. The purpose of this activity is to help you gain an understanding of what happens to your heart rate when you perform activities to develop the six components of physical fitness. Perform each activity as fast and as many times as you can for 30 seconds. Use your heart rate monitor, and record your heart rate before and immediately after the activity. Also, make a note if you were winded at the end of an activity. Between each exercise, walk slowly and allow your heart rate to go below 125 if possible. If your heart rate is over 125 at the end of an exercise, record how long it takes to get below 125. The use of arch index to characterize arch height: a digital image processing approach. In order to avoid these problems, digital image processing methods were used to acquire and to calculate the Arch Index (AI), a parameter which is robust in its definition. A simplified version of the AI not requiring computerized measurement or clinical expertise would be of practical value for clinicians and researchers seeking a reliable and valid measure of foot posture. Therefore, the aim of this study was to develop a simple visual categorization tool based on the AI which allows foot posture to be documented into three categories (high, normal and low), and to evaluate the tool's inter- and intra-tester reliability and validity in a sample of school players.

Statement of the Problem

The present study is designed to examine effect of rehabilitation programme among athletes with pes planus on physical fitness factors. There is no sufficient remedies and solution for to correct the flat foot for athletes, this study was a good attempt to get the solution for this problem.

METHODOLOGY

Selection of the Subjects

To achieve these purpose 550 athletes were tested by physical fitness such as speed, agility, coordination, reaction time, explosive power and balance. The sample was selected from the regional athletes of Puducherry, India. From the total population 78 athletes were having flat foot arch (flat feet), out of which forty voluntary participations were agreed and selected for this second part of the research. The selected subjects were one group experimental group (n=20). Experimental group was undergone training of rehabilitation for five days in a week for total twelve weeks.

Selection of Variables

The independent variable as rehabilitation exercises programme and dependent variables are physical fitness variables.

Physical fitness variables

Speed, Agility, Coordination, Reaction time, Explosive power, Balance.

12 WEEKS REHABILITATION TRAINING PROGRAMME

Week	Days	Exercise	Volume	Duration
Week 1	Monday to Friday	Calf rises, Step stretch, Towel curls, Doming, Toe spread & squeeze	10 sets of 10 reps 30 seconds rest interval between exercise	Total 1 hour in a session of a day including 10 minutes warming up 40 minutes exercise and 10 minutes are stretching exercise.
Week 2	Monday to Friday	Tennis ball exercise, tippy toe walk, side walk, walk in sand, towel stretch	2 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes are stretching exercise.
Week 3	Monday to Friday	Tip-toe coin push	10 sets of 10 reps	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching
		Roll of the feet with golf ball	2 minutes in 3 sets	
		Downward facing leg	2 minutes in 3 sets	
		Frozen can roll	10 sets of 10 reps	

		Theraband pull-single leg	10 sets of 10 reps	exercise.
Week 4	Monday to Friday	Toe walk, toe jagging, step walk, single leg hops, double leg hops	2 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.
Week 5	Monday to Friday	Foam roller	10 sets of 10 reps rest interval between exercises	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.
		Single leg directional hops		
		Three points lunges		
		Squad jacks		
		Single leg mountain climbers		
Week 6	Monday to Friday	Single leg balance – squat, standing jump, lateral jump, single leg balance on forefoot, eccentric heel drop	2 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.
Week 7	Monday to Friday	Board , band, balance training, on the spot jump, duck walk	2 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.

Week 8	Monday to Friday	Calf rises, Doming, Step stretch,	10 sets of 20 reps 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.
Week 9	Monday to Friday	Tennis ball exercise, tippy toe walk, side walk, calf rises	5 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.
Week 10	Monday to Friday	Toe walk, toe jagging, step walk, single leg hops, double leg hops	5 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.
Week 11	Monday to Friday	Board , band, balance training, on the spot jump, duck walk	5 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.

Week 12	Monday to Friday	Single leg balance – squat, standing jump, lateral jump, single leg balance on forefoot, eccentric heel drop	5 minutes for 3 sets 30 seconds rest interval between exercise	Total 1 hour in a session of the day including 10 minutes warming up 40 minutes exercise and 10 minutes stretching exercise.
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Test Administration

Sl.No.	Variables	Test	Unit
1	Speed	50mts Dash	Seconds
2	Agility	Semo Agility Test	Seconds
3	Coordination	Hexaganol Obstacle Test	Seconds
4	Explosive Power	Sergent Vertical Jump	Centimeters
5	Reaction Time	Nelson Choice Response Movement Test	Seconds
6	Balance	Stork Balance Test	Seconds

RESULTS AND DISCUSSIONS

To find out the pre and posttest intervention difference in experimental group due to application of rehabilitation exercise programme for 12 weeks, paired sample t-test was applied.

The Summary of Pretest, Posttest Means and Dependent 'T' Test on Physical Fitness Variables of Experimental Group

Group	Physical Fitness variables	Pre-test (mean \pm SD)	Post-test (mean \pm SD)	MD	Df	T- ratio
Experimental Group (EG)	Speed (seconds)	6.111 \pm 0.555	6.116 \pm 0.546	0.005	19	0.334
	Agility (seconds)	11.660 \pm 0.807	11.393 \pm 0.826	0.266	19	4.245*
	Coordination (seconds)	5.023 \pm 0.868	4.340 \pm 0.348	0.683	19	3.767*
	Reaction Time (seconds)	2.261 \pm 0.282	1.950 \pm 0.153	0.310	19	5.651*
	Explosive Power (centimeters)	33.150 \pm 6.690	37.600 \pm 5.807	4.450	19	6.213*
	Balance (seconds)	35.280 \pm 18.821	49.418 \pm 16.774	1.413	19	7.156*

*significance at 0.05 level of confident with df19 of for f table value is 2.086.

The above table shows the results of the speed for experimental group, the attained t-ratio value was 0.334, found to be significant at the table value 2.086, it was understood that experimental group had no significant improvement on speed to the rehabilitation exercise programme for 12 weeks.

The results of the agility for experimental group, the attained t-ratio value was 4.245, found to be significant at the table value 2.086, it was understood that experimental group had significantly improved agility due to the rehabilitation exercise programme for 12 weeks.

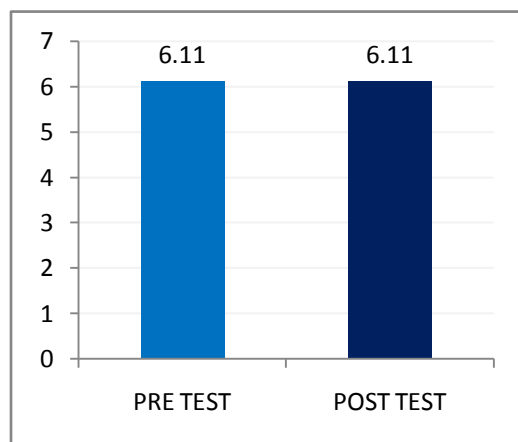
The results of the coordination for experimental group, the attained t-ratio value was 3.767, found to be significant at the table value 2.086, it was understood that experimental group had significantly improved coordination due to the rehabilitation exercise programme for 12 weeks.

The results of the reaction time for experimental group, the attained t-ratio value was 5.651, found to be significant at the table value 2.086, it was understood that experimental group had significantly improved reaction time due to the rehabilitation exercise programme for 12 weeks.

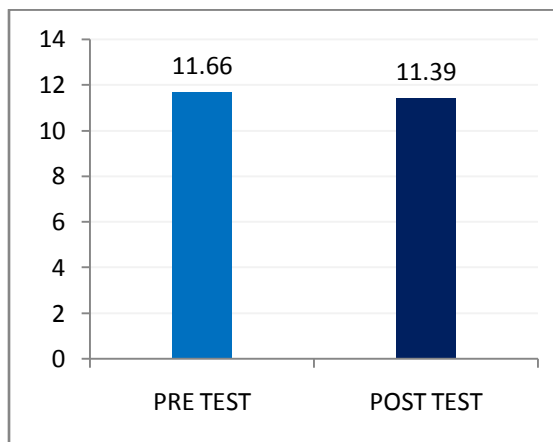
The results of the explosive power for experimental group, the attained t-ratio value was 6.213, found to be significant at the table value 2.086, it was understood that experimental group had significantly improved explosive power due to the rehabilitation exercise programme for 12 weeks.

The results of the balance for experimental group, the attained t-ratio value was 7.156, found to be significant at the table value 2.086, it was understood that experimental group had significantly improved balance due to the rehabilitation exercise programme for 12 weeks.

Speed(Seconds)

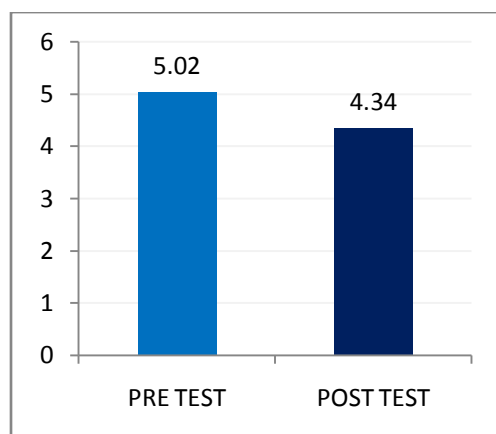
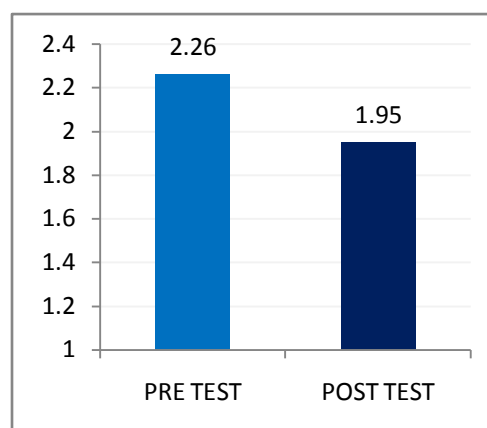
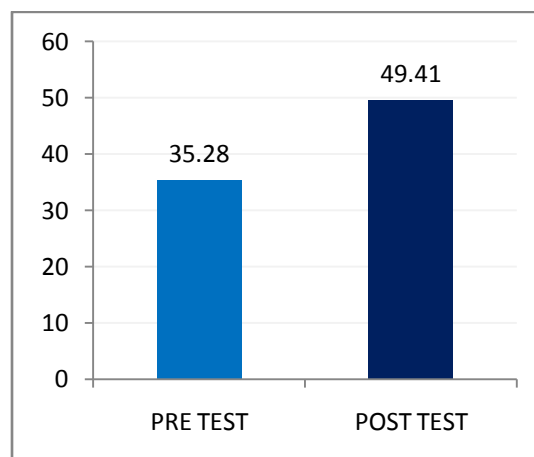
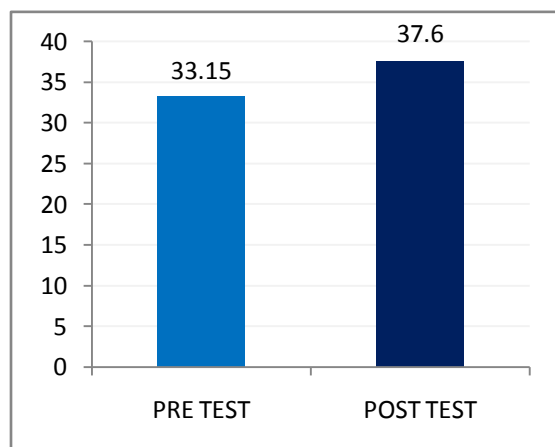


Agility (Seconds)



Coordination (Seconds)

Reaction Time (Seconds)

**Explosive Power (Centimeters)****Balance (Seconds)**

CONCLUSIONS

From the interpretation of the data the following conclusions were drawn

1. The 12 weeks of rehabilitation exercises programme intervention improves the agility, coordination, reaction time, explosive power and balance of the flat feet players.
2. The 12 weeks of rehabilitation exercises programme no significant improvement on speed for the flat feet players.
3. Over all, it was concluded that the rehabilitation exercises programme would help the flat feet players and recovered from the flat feet in to improved arches of foot and also physical fitness.

REFERENCES

1. Menz, H. B., Fotoohabadi, M. R., Wee, E., & Spink, M. J. (2012). Visual categorisation of the arch index: a simplified measure of foot posture in older people. *Journal of foot and ankle research*, 5(1), 1.
2. Wong, Christopher Kevin, Rich Weil, and Emily de Boer. "Standardizing foot-type classification using arch index values." *Physiotherapy Canada* 64.3 (2012): 280-283.
3. Lee, H. J., Lim, K. B., Yoo, J., Yoon, S. W., Yun, H. J., & Jeong, T. H. (2015). Effect of Custom-Molded Foot Orthoses on Foot Pain and Balance in Children with Symptomatic Flexible Flat Feet. *Annals of Rehabilitation Medicine*, 39(6), 905-913.

4. Al Abdulwahab, S. S., & Kachanathu, S. J. (2015). The effect of various degrees of foot posture on standing balance in a healthy adult population. *Somatosensory & Motor Research*, 32(3), 172-176.
5. Chang, C. H., Chen, Y. C., Yang, W. T., Ho, P. C., Hwang, A. W., Chen, C. H. & Chang, L. W. (2014). Flatfoot diagnosis by a unique bimodal distribution of footprint index in children. *PloS one*, 9(12), e115808.
6. Takata, Y., Matsuoka, S., Okumura, N., Iwamoto, K., Takahashi, M., & Uchiyama, E. (2013). Standing balance on the ground—the influence of flatfeet and insoles. *Journal of physical therapy science*, 25(12), 1519-1521.
7. Lizis, P., Posadzki, P., & Smith, T. (2010). Relationship between explosive muscle strength and medial longitudinal arch of the foot. *Foot & ankle international*, 31(9), 815-822.
8. Cavanagh, P. R., & Rodgers, M. M. (1987). The arch index: a useful measure from footprints. *Journal of biomechanics*, 20(5), 547-551.
9. Hawes, M. R., Nachbauer, W., Sovak, D., & Nigg, B. M. (1992). Footprint parameters as a measure of arch height. *Foot & Ankle International*, 13(1), 22-26.
10. Qureshi Haroon Rasheed, Sachin. B. Pagare. Effect of Flat Foot Deformity on Selected Physical Fitness Components in school going children. *International Journal of Scientific and Research Publications*, Volume 5, Issue 6, June 2015 1 ISSN 2250-3153.
11. Babak Nakhoshtin-Roohi, Soheila Hedayati & Azar Aghayari. The effect of flexible flat-footedness on selected physical fitness factors in female students aged 14 to 17 years. *J. Hum. Sport Exerc.*, 8(3), pp.788-796.
12. Cavanagh, Peter R., and Mary M. Rodgers. "The arch index: a useful measure from footprints." *Journal of biomechanics* 20.5 (1987): 547-551.
13. Tashiro, Y., Fukumoto, T., Uritani, D., Matsumoto, D., Nishiguchi, S., Fukutani, N. & Nozaki, Y. (2015). Children with flat feet have weaker toe grip strength than those having a normal arch. *Journal of physical therapy science*, 27(11), 3533.



COMBINED EFFECT OF PLYOMETRIC OWN BODY RESISTANCE AND SWISS BALL TRAINING ON SELECTED MOTOR FITNESS COMPONENTS OF SCHOOL LEVEL VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of this study was to find out the combined effect of plyometric, own body resistance and Swiss ball training on the selected motor fitness components of school level volleyball players. The investigator selected forty eight (N=48) male volleyball players who represented for their schools from Sri Ramakrishna Mission Vidhyalaya High School and Ranga Swami Naidu Higher Secondary Schools of Coimbatore, Tamilnadu, were selected as subjects at random and their ages ranged from 13 to 15 years. The subjects were divided into two equal groups of twentyfour each. Group –I acted as Experimental Group (Plyometric Own body Resistance and Swiss ball Trainings (POBRSTG). Group –II acted as Control Group (CG). The dependent variables namely leg explosive power and agility were selected and measured by Sargent vertical jump and 4x10yard shuttle run test for this study. The data was analysed by the use of paired 't' test. The obtained 't' ratio was tested for significance at 0.05 level of confidence. The analysis of the data revealed that there was a significant improvement on the selected variables namely leg explosive power and agility by the application of plyometric, own body resistance and Swiss ball training.

Key words: Leg Explosive Power And Agility Sargent Vertical Jump Test And 4x10yardsshuttle Run.

INTRODUCTION

Volleyball is an enjoyable activity for the beach or the park. The game is played by two team of six players, with up to six substitutes allowed in a squad. A net is fixed across the middle of a court eighteen meters long and nine meters wide. Two flexible antennae mark the extremes between which the ball must pass over the net. Play starts by one player serving the ball over the net from behind the base line. When the ball has passed over the net, the receiving team may play the ball three times before they must pass it back over the net. Each player is only allowed to touch the ball once. The object of the game is to force the ball down onto to the floor of the opponent's court, or to put them under so much pressure that they are unable to return the ball. In volleyball, if the ball does not go back over the net, the opposition wins a point. After each time a team wins the ball back from the opposition each player rotates one position clockwise. This rotation is a special feature of the game and it means that all players must play both in the front line and the back line. A team wins a set by scoring 25 points with a two point lead and wins the match by winning three sets. (Ranganathan 2013).

MOTOR FITNESS

Motor fitness can be achieved through physical exercise motor fitness is a general state of health and well-being or specifically the ability to perform aspects of sports or occupations Motor fitness is generally achieved through correct nutrition, exercise, hygiene and rest. It is a set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity. Before the industrial revolution, fitness was the capacity to carry out the day's activities without undue fatigue. However with automation and changes in lifestyles physical fitness is now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo kinetic diseases, and to meet emergency situations. (Aneja 2012).

METHODOLOGY

For this study, forty eight (N=48) male volleyball players who represented for their schools from Sri Ramakrishna Mission Vidhyalaya High School and Ranga Swami Naidu Higher Secondary Schools of Coimbatore, Tamilnadu, were selected as subjects at random and their ages ranged from 13 to 15 years. The subjects were divided into two equal groups of twenty four each. Experimental Group was given 12 weeks (Duration - 12 weeks, Session - 3 days / week, Duration of one session - One hour) of plyometric own body resistance and Swiss ball training and the control group was not given any specific training. Experimental Group -I (Plyometric Own body Resistance and Swiss ball Trainings (POBRSTG) were given to experimental group. The subjects were tested in the selected variables namely leg explosive power and agility by Sargent vertical jump test and 4x10yard shuttle run test for this study. Before and after the training period the data were collected. The collected data was treated by using paired t-test. The level of confidence was fixed at 0.05 Level.

SELECTION OF VARIABLES

The research scholar reviewed the available scientific literature pertaining to the problem from books, journals, magazines, websites, and research papers which revealed the importance of Plyometric Training, Own body Resistance Training and Swiss ball Training. Taking into consideration of feasibility criteria and availability of the instruments the following variables were selected for this study.

DEPENDENT VARIABLES**Motor Fitness Components**

1. Leg explosive power.
2. Agility.

INDEPENDENT VARIABLES

Plyometric Training, Own body Resistance Training and Swiss ball Training (OPBRSTG).

TABLE-I
COMPUTATION OF 'T'-RATIO BETWEEN THE PRE AND POST TESTS ON LEG
EXPLOSIVE POWER OF EXPERIMENTAL AND CONTROL GROUPS

Group	Test	M	SD	σ DM	DM	t-ratio	'P'
Experimental	Pre Test	25.70	2.23	0.45	2.79	6.19*	0.01
	Post Test	28.50	2.79				
Control	Pre Test	25.71	4.50	0.37	0.08	0.22	0.82
	Post Test	25.62	4.42				

* significance at 0.05 level.

The table I indicates that there was a significant improvement on the leg explosive power through the of plyometric own body resistance and Swiss ball training. It reveals that the obtained t-ratio 6.19 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and posttests on the selected motor fitness components namely leg explosive power. So there was a significant improvement on the leg explosive power between the pre and post tests of the experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the leg explosive power was due to the plyometric own body resistance and Swiss ball(POBRSTG)training alone.

FIGURE-I

Figure Showing the Mean Difference of Pre and Post Tests on Leg Explosive Power of Experimental and Control Groups

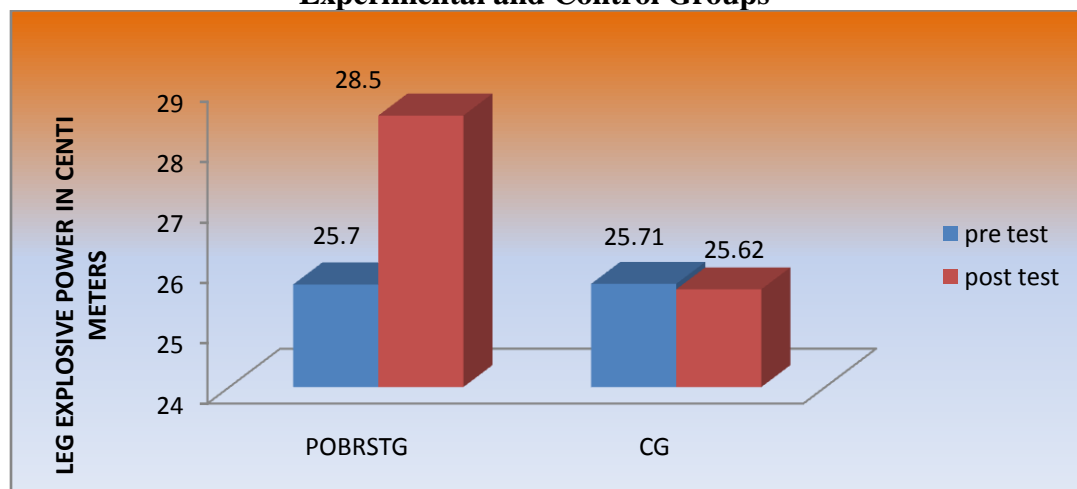


TABLE-II
COMPUTATION OF 'T'-RATIO BETWEEN THE PRE AND POST TESTS ON
AGILITY OF EXPERIMENTAL AND CONTROL GROUPS

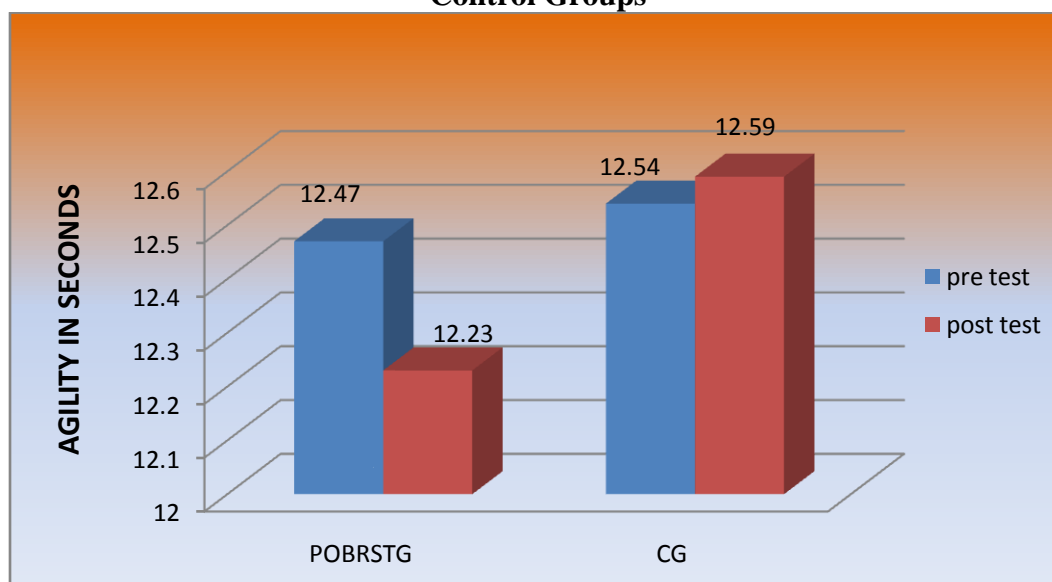
Group	Test	M	SD	σ DM	DM	t-ratio	'P'
Experimental	Pre Test	12.47	0.72	0.07	0.23	3.16*	0.04
	Post Test	12.23	0.70				
Control	Pre Test	12.54	0.69	0.11	0.50	0.45	0.66
	Post Test	12.59	0.76				

* significance at 0.05 level.

The table II indicates that there was a significant improvement on the agility through the plyometric own body resistance and Swiss ball training. It reveals that the obtained t-ratio 3.16 is significant because the 'p' value is lesser than the 0.05, there was a significant improvement between pre and post tests on agility. So there was a significant improvement on the agility between the pre and post tests of the experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the agility was due to the plyometric own body resistance and Swiss ball (POBRSTG) training alone.

FIGURE-II

Figure Showing the Mean Difference of Pre and Post Tests on Agility of Experimental and Control Groups



DISCUSSION OF FINDINGS

The result of the study reveals that the twelve weeks of combined effect of plyometric, own body resistance and Swiss ball training on the selected dependent variables. There was a significant improvement on leg explosive power through the plyometric, own body resistance and Swiss ball training (POBRSTG). It reveals that the obtained t-ratio 6.19 is significant because the 'p' value is lesser than the 0.05 there was a significant improvement between pre and post tests on leg explosive power. So there was a significant improvement on the leg explosive power between

pre and post-tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on the leg explosive power was due to the plyometric, own body resistance and Swiss ball (POBRSTG) training alone. The results of the study were in consonance with the research done by Nanda Kumar and Gomathi (2016) and Natarajan et al. (2015).

The result of the study reveals that the twelve weeks of combined effect of plyometric, own body resistance and Swiss ball training on the selected dependent variables. There was a significant improvement on agility through the plyometric, own body resistance and Swiss ball training (POBRSTG). It reveals that the obtained t-ratio 3.16 is significant because the 'p' value is lesser than the 0.05 there was a significant improvement between pre and post tests on agility. So there was a significant improvement on the agility between pre and post-tests of experimental group, whereas control group showed no significant improvement. Hence the results indicate that the significant improvement on agility was due to the plyometric, own body resistance and Swiss ball (POBRSTG) training alone. The results of the study were in consonance with the research done by Eskander et al. (2014) and Faigenum et al. (2011).

CONCLUSIONS

It was concluded that there was a significant improvement on the selected dependent variables namely leg Explosive power and agility by the application of plyometric training, own body resistance training and Swiss ball training (POBRSTG).

REFERENCES

- Ajmir Singh et al. (2008). Essential of physical education. Ludhiana: Kalyani publishers.
- Aneja O.P (2012). Fitness, Performance and Health. Sports Publication (India) New Delhi – 110002, ISBN: 978-81-7879-707-6.
- Ranganathan (2013). Volleyball – A guide to Playing and Coaching. Friends Publication (India) New Delhi – 110009, ISBN: 81-7216-042-9.
- Deepak Jain (2011). Physical Education Hand book. Khelsahitya Kendra Publication (India) New Delhi – 110002, ISBN: 81-7524-056-3. www.Kelsahitya.com
- Natarajan, and Sai Kumar (2015). Effect of isolated and combined Swiss ball and mobility training on selected physical fitness and skill performance variables among school volleyball players. *Journal of Physical Education and Sports Sciences*. Vol.5-1, ISSN: 0976-6618.
- Nandakumar, D., & Gomathi, N. (2016) effect of plyometric training and complex training on selected physical fitness variables of college men handball players. *International Research Journal of Multidisciplinary Science And Technology*, Vol.1 (3) pp.43-46.
- Eskandar Taheri., Asghar Nikseresht., & Ebrahim Khoshnam. (2014). The effect of eight weeks of plyometric and resistance training on agility, speed and explosive power in soccer players. *European Journal of Experimental Biology*, vol 4(1), PP. 383-386.
- Faigenbaum, A.D., McFarland, J.E., Keiper, F.B. & Tevlin, W. (2011). Effects of a short-term plyometric and resistance training program on fitness performance in boys age 12 to 15 years.



NUTRITIONAL INTERVENTION FOR PERSONS WITH AUTISM

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ABSTRACT:

Autism is a neurological condition which affects the social interaction and eating patterns. Persons with ASD have difficulty in accepting or trying a new food. He is a picky eater who likes to eat only food with specific color, texture, smell and taste. As he follows a rigid routine he cannot accept slight changes or modification in his diet. The author has discussed on the problems faced by the parents in choosing, introducing the food for their wards and the various nutritional intervention available to choose from. The author has also given recommendation for making a well-adjusted meal and the role played by dietician in choosing a well-balanced and a healthy diet to foster growth and development and to make meal time a lesser ordeal for parents and care givers. Foods frequently liked include cereal (eaten without milk as finger food), chips, pizza, bread and pasta. Some children have constricted food choices. They may like only 10-15 items, only certain brands or methods of preparing food despite being given a wide variety of foods.

KEYWORDS: Recommendation, Nutritional, Modification

INTRODUCTION:

Autism Spectrum Disorder (ASD), is a multifaceted neurological condition that classically appears at first three years of birth. It majorly concerns with neurological function, primarily in social interaction and verbal and non-verbal communication. Characteristics include **poor or absent verbal and non-verbal communication, difficulty in mingling with peers (no pretend play), and poor or no eye contact troubled transitions leading to overstimulation or delugement, poor attention span, lack of interests in activities, and follow rigid routine.** Both genetic and environmental factors interact in a complex way and create this disorder.

Various categories of Autism Spectrum Disorder are

- Classic autism
- Asperger's Syndrome
- Pervasive Developmental Disorder(PDD)
- Rett's Disorder(found only in Girls)
- Childhood Disintegrative Disorder(CDD)

As there are no biomarkers for autism, diagnosis is done via behavioral assessment. If screening results are giving positive indication, a detailed examination is conducted. Medical, cognitive, verbal and non-verbal communication areas are assessed. Persons with ASD have repetitive behaviors, constricted and compulsive obsessive behavior that affects food choices, eating patterns leading to various health concerns. The problems usually observed are

Limited food selection and food dislikes:

The unique aspect is their selective food choices where they have strong dislikes and likes in smell, appearance and texture of foods often resulting in a "picky" eating. They may have boundaries or completely avoid some food or even the whole groups. Fruits, soft foods vegetables are generally not liked while dry, crispy or crunchy foods are liked. Finger foods are usually preferred. Foods frequently liked include cereal (eaten without milk as finger food), chips, pizza, bread and pasta. Some children have constricted food choices. They may like only 10-15 items, only certain brands or methods of preparing food despite being given a wide variety of foods.

Not eating sufficient food:

Persons with autism have problems concentrating on a task for longer duration making it difficult to eat a meal. Parents usually give the food the person will eat which leads to separate meals or meal time. Decreased acceptance of "new" foods is also observed by many parents. Rejection of vitamin and mineral supplements leads to obesity or malnourishment. Energy needs of the person are met. Due to their choosy eating micronutrient may be marginal or inadequate. Nutritional inadequacy is observed in calcium, vitamin A& E, fiber and protein.

Constipation:

This problem is result of limited food preferences and choices which can only be remedied by high-fiber diet, sufficient fluid intake and systematic physical activity.

Problems with Medication:

The stimulant medications reduce appetite thereby reducing the quantity of intake which reduces development and growth, affects absorption of vitamins and minerals. Healthy eating has no

exception. A nutritious, comprehensive balanced diet will improve the ability to learn, manage emotions and process information and inputs.

Nutritional intervention

Many diet-based interventions are available to treat ASD. Extensive marketing, endorsements, and claims have prompted parents to embrace dietary modifications and supplementation regimens for their children with ASD. **The most common nutrition interventions available for the persons with ASD are**

- Gluten-free/casein-free diet
- Specific carbohydrate diet (SCD)
- Yeast-free diet
- Vitamin supplement
- Specific nutrients – B6, magnesium
- Fatty acid supplements
- Probiotics
- Enzymes
- Dimethylglycine (DMG)

Gluten-free/casein-free (GFCF) diet:

The most popular treatment is Gluten-free/casein-free (GFCF) diet. The “leaky gut syndrome” was developed by scientists in Europe. The theory assumes children with ASD will not be able to digest casein and gluten in dairy and wheat foods, which leaves broken down polypeptides in “leaky” intestines, which enter the circulatory system, through blood-brain barrier. There form endorphin receptors in the central nervous system, causing the characteristics and activities seen in ASD. Elimination of casein and gluten in their diet is found effective. Gastrointestinal symptoms, such as constipation and diarrhea, inflammation and other anomalies, have been noted for both on a GFCF diet or not. Behavioral changes post the GFCF diet could be the dietary modifications rather than the elimination of casein or gluten from their food the improvement might be due to replacement of processed foods with healthier foods like whole grains, fruits, and vegetables. The key role of the Dietician is to help them with GFCF diet which contains adequate nutrients to foster growth and development.

Specific Carbohydrate Diet (SCD)

A more limiting than GFCF diet it excludes grains, dairy, complex carbohydrates restricts many vegetables and fruits. Initially proposed for irritable bowel syndrome, it fights with bacterial and yeast overgrowth. However this diet is not adequate.

Feeding Behaviors

The persistent picky eating limits food intake of ASD. It is very great challenge for those with the child. Picky eating and phobia for trying anything new is not easy task to deal with. Working with feeding therapists and behavior specialists has been found to be effective.

Interventions can be integrated into a child’s educational goals like Individualized Family Service Plan (IFSP), Individual Education Program (IEP). This requires harmonization between the school, family, and the dietician. Applied behavior analysis (ABA) approach is operative for children, and may be incorporated for feeding. This can be done by framing small goals, steps to

facilitate incorporation of new foods in their diet. Introduction of food should be done slowly and should be done till they are well incorporated in his diet.

Recommendation to parents

Be Equipped for Pickiness:

Parents find child's sensitivity to food as the stumbling block to a sensible diet. Getting them to try new food could be a humungous task. Many with ASD avoid certain or entire food groups. The best way is to tackle it outside the kitchen. Take them shopping with you for selecting a new food. Research it together on the Internet and decide how to prepare it. When done, don't worry if he didn't eat. Familiarizing with new foods in a happy, positive way can make him flexible.

Make Mealtimes Routine

It is difficult for a person with Autism to cope up due to factors like busy kitchen, bright lights, the furniture arrangement. Making meals as expected and sticking to routine helps. Serving meals at the same time every day will decrease stress. If the person is sensitive to lights, try candlelight. Let them choose the menu. Always see to that the person's favorite food is there in the menu. Or, let him choose a favorite seat at the table.

Seek Guidance for Special Diets

Gluten-free/casein-free (GFCF) diet has been found effective. Gluten is protein found in wheat, rye and barley. Casein is found in milk. Advocates of the diet reflect that people with ASD have a "leaky gut," or intestine, making gluten and casein seep into the circulatory system thus affecting the brain and central nervous system. Restrictive diets necessitate meticulous planning to ensure nutritional needs are met. Consult with a dietitian when creating any drastic changes to diet as there can be some nutritional lacunae. The effects of the diet can also be well understood so as to make necessary modification as when needed.

A dietitian would identify nutritional risks, diet therapies and supplements found beneficial for autism and help guide eating balanced nutritious and tasty foods. The role of dietitian has not been well understood. They can make the management of autism better.

CONCLUSION:

Through proper planning Autism can be managed better. The leaky gut and picky food makes it difficult to choose the right food. However slow, but constant progress with food acceptance and improvement in feeding behaviors will happen. Periodic re-assessment of family's concerns and goals will benefit the person with ASD.



ANALYSIS OF COMMON SPORTS INJURIES AND RISK FACTORS: A METHODOLOGICAL APPROACH AMONG STATE LEVEL FOOTBALL PLAYERS

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ABSTRACT

The purpose of the study was to discuss the common sports injuries and how much players are aware about injuries, reasons for injuries and injury rehabilitation programs among male football players in Kerala. For this study investigator selected 250 state level football players from different district of Kerala. The selected subject's age groups were 18-30. Primary data collected through questionnaires distributed among various respondents. The statistical tool used for this study is percentage analysis. The study reveals that most of the respondents are aware about the injuries and its rehabilitation programmes even though they gets frequently injured because of not getting enough rest, doing practice without warming up, over strain etc.

KEYWORDS: Injury, Recovery, Football Players

INTRODUCTION

Football is one of the best game in the world, as well as it is dangerous too. As it makes a great career to the players, it too can take their career, even their life. Comparing with other outdoor games, in football chances of accidents and injuries are very high, because modern football involves full of body contact. To attain victory, the players deliberately makes accidents and injuries to the opponents. It has become a rough and tough game now-a -days. In order to solve this issue, football board has changed many rules, then too, the number of accidents that happens in the ground isn't decreasing.

Sports injuries and common sports injuries

Sports injuries are injuries that occur in athletic activities or exercising. They can result from accidents, poor training technique in practice, inadequate equipment, and overuse of a particular body part. Prevention helps reduce potential sport injuries. It is important to establish participation in warm-ups, stretching, and exercises that focus on main muscle groups commonly used in the sport of interest.

Strains and Sprains.

A sprain occurs when a ligament tears or overstretches. These can range from minor to complete tears where the ligament is severed. A sprain is most common in wrists, ankles, or knees. A strain is also known as a pulled muscle, and occurs when the fibers within a muscle or tendon stretch too far or tear. Strains can also be minor to severe.

Knee Injuries.

Severe knee injuries can involve damage or bruising to cartilage or ligaments. The four major ligaments in the knee that are commonly injured are the posterior cruciate ligament (PCL), the medial collateral ligament (MCL), anterior cruciate ligament (ACL), and the lateral collateral.

Dislocations.

These occur when force pushes the bones in a joint out of alignment. Contact sports such as football or an activity such as excessive stretching or falling can cause dislocations. The dislocated bone may be able to be put back in place, but the connective tissue surrounding the joint may have severe damage. The most common joints that are dislocated are the fingers and hand, with the shoulder being close behind, elbows and knees.

STATEMENT OF THE PROBLEM

The present study was designed to analyse the common sports injuries and risk factors among state level football players.

SIGNIFICANCE OF THE STUDY

- 1.The result of the study will highlight the importance of the awareness of sports injuries among the football players in Kerala.
2. Ultimate goal of research in physical education is to help the coaches and physical educators to prevent the injuries and increase the awareness of sports injuries and its rehabilitation programmes among the players thereby improve their performance.

DELIMITATIONS

- ❖ The study was delimited to 250 male football players
- ❖ The subject's age ranged between 18 to 30 years.
- ❖ The subjects selected from various state level clubs and departmental players from Kerala.

LIMITATIONS

- ❖ The height and weight of the subjects are not considered.
- ❖ Subjects body type and the socio-economic status of football players are not taken into consideration for this study.
- ❖ Heredity and environmental factors which may influence the result of the study may not be controlled or assessed.
- ❖ The data was collected through questionnaire where the human judgement and personal bias may occur.

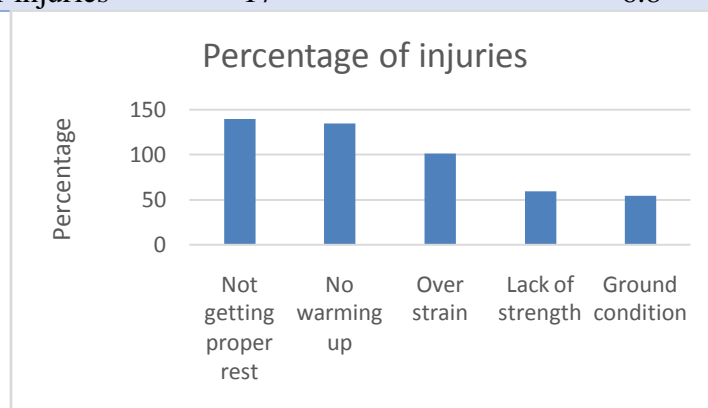
METHODOLOGY

For the present study 250 male football players was selected from various clubs and departments in Kerala. The age of the subjects ranged from 18 to 30 years. The data was collected through questionnaires distributed among various respondents based on their past one-year experience. Collected data was analyzed by using appropriate statistical technique namely Percentages analysis.

ANALYSIS OF DATA

Common sports injuries happen among football players

Types of Injuries	Number of injured players	Percentage
Knee Ligament injury	92	36.8
Ankle Injury	76	30.4
Muscle injury	47	18.8
Shine bone injury	26	10.4
Other injuries	17	6.8

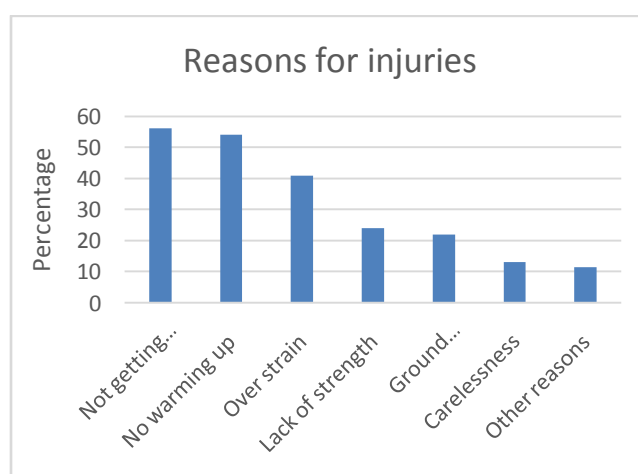


From the above table indicates that, 36.8% of the players are suffered from knee ligament injury among the total players. 30.4% are having ankle injury. The percentage of the players who are

having muscle injury is 18.8%. 10.4% is having Shine bone injury and 6.8% is suffering from other injuries.

Reasons for getting injury among football players

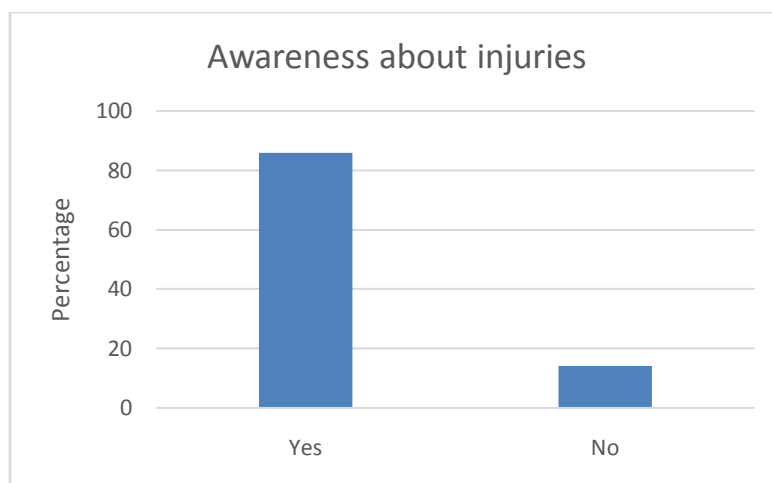
Reasons for injuries	Number of players	Percentage
Not getting proper rest	140	56
No warming up	135	54
Over strain	102	40.8
Lack of strength	60	24
Ground condition	55	22
Carelessness	33	13.2
Other reasons	29	11.6



The above table indicates the various reasons for getting injuries to the players. Among the respondents 56% of the players got injured because of not getting proper rest. 54% become injured without having no warming up and 40.8% are injured due to over strain. Lack of strength is the reason for injury of 24% players. While ground condition is considered as the reason for getting injury for 22% players. 13.2% is having injury because of Carelessness and 11.6% is having other reasons for getting injuries.

Awareness about sports injuries

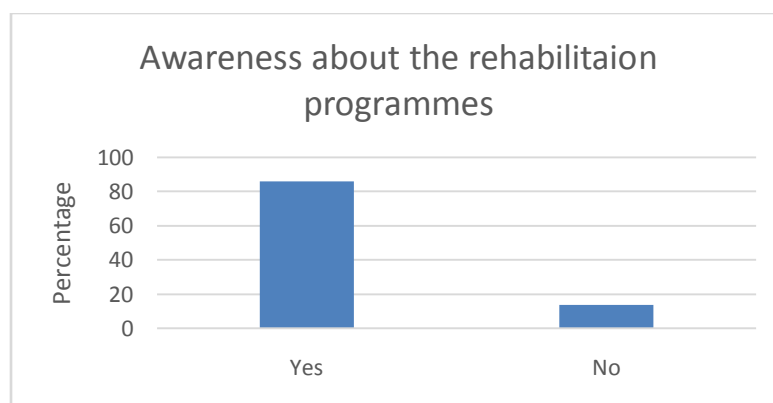
Awareness about injuries	Number of players	Percentage
Yes	215	86
No	35	14



The above table shows that 86% of the players are aware about their injuries and rest of the 14% players are not aware about the injuries they are having.

Awareness about rehabilitation programmes

Awareness about rehabilitation programmes	Number of players	Percentage
Yes	185	74
No	65	26



The above table describes that 74% of the players are aware about the rehabilitation programmes and 26% are not aware about the rehabilitation programmes.

DISCUSSION ON FINDINGS

1. Based on the result many of the players in Kerala are aware about injuries, reasons for injuries and its rehabilitation programs.
2. Most of the players is having injuries
3. Comparing with other injuries, players who suffering from knee ligament injuries is high.
4. Nearly all the players are aware about the reason behind their injury.

5. Most of the players are knowing the various rehabilitation programme for their injuries.

REFERENCE

1. Amako M, Oda T, Masuoka K, et al. (2003) Effect of static stretching on prevention of injuries for military recruits. *Military Medicine* 168(6): 442–446.
2. Andrish JT, Bergfeld MD and Walheim J (1974) A prospective study on the management of shin splints. *The Journal of Bone and Joint Surgery* 56(8): 1697–1700.
3. Arnason A, Andersen TE, Holme I, et al. (2008) Prevention of hamstring strains in elite soccer: an intervention study. *Scandinavian Journal of Medicine and Science in Sports* 18: 40–48.
4. Arnason A, Engebretsen L and Bahr R (2005) No effect of a video-based awareness program on the rate of soccer injuries. *The American Journal of Sports Medicine* 33(1): 77–84.
5. Bahr R, Lian O and Bahr IA (1997) A twofold reduction in the incidence of acute ankle sprains in volleyball after the introduction of an injury prevention program: a prospective cohort study. *Scandinavian Journal of Medicine and Science in Sports* 7: 172–177.
6. Bartholomew L, Parcel G, Kok G, et al. (2006) *Planning Health Promotion Programs: An Intervention Mapping Approach*. San Francisco, CA: Jossey Bass. Bauer R and Steiner M (2009) Injuries in the European Union: statistics summary 2005–2007. Available at: http://ec.europa.eu/health/healthy_environments/docs/2009-idb-report_screen.pdf (accessed 13 April 2015).
7. Bixler BBA and Jones RLD (1992) High-school football injuries: effects of a post-halftime warm-up and stretching routine. *The Family Practice Research Journal* 12(2): 131–139.



EFFECT OF COMBINATION OF ISOTONIC AND ISOMETRIC TRAINING WITH ASANAS PRACTICES ON SELECTED BIO MOTOR VARIABLES OF ADOLESCENT BOYS

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ABSTRACT

The purpose of the study was to examine the effect of combination of isotonic and isometric training with asanas practices on selected bio motor variables of adolescent boys. To achieve the purpose of the present study, thirty school boys from Zillaparishad high school Jajapur, Mahaboob Nagar district, Telangana state were selected as subjects at random and their age ranged from 12 to 14 years. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent Isotonic and Isometric Exercises combined with Asanas Practices and Group 'B' underwent no training. The experimental group had undergone training for six weeks on alternate days. The variables namely speed and flexibility the data were subjected to "t" test and analysis of covariance technique. It was found that the Isotonic and Isometric Exercises combined with Asanas Practices group showed significant improvement on speed and flexibility among school boys. It was also found that the experimental group had shown significant improvement on speed and flexibility than the control group.

KEY WORDS: Isotonic, Isometric Asanas, Bio motor variables School Boys.

INTRODUCTION

Exercise when a contracting muscle shortens against a constant load, as when lifting a weight. Isotonic exercise is one method of muscular exercise. In contrast, isometric exercise is when muscular contractions occur without movement of the involved parts of the body. Isotonic comes from the Greek "iso-", equal + "tonos", tone = maintaining equal (muscle) tone. The muscle maintains equal tone while shortening in isotonic exercise. Isotonic exercise, also known as dynamic constant external resistance, or DCER for short, encompasses exercises where muscle tendons pull against bone to cause joint movement. Any moving exercise, from weight training to rowing or running, falls into this category. In fitness, isotonic exercise most commonly refers to exercises that isolate a particular muscle or muscle group to increase strength or improve performance. Because most human activity and athletic performance involve movement, isotonic exercise is foundational to most training protocols.

An isometric exercise is a form of exercise involving the static contraction of a muscle without any visible movement in the angle of the joint. The term "isometric" combines the Greek words "Isos" (equal) and "metria" (measuring), meaning that in these exercises the length of the muscle and the angle of the joint do not change, though contraction strength may be varied. This is in contrast to isotonic contractions in which the contraction strength does not change, though the muscle length and joint angle do. Isometric exercises are thousands of years old, with examples listed from the static holds in certain branches of yoga or oriental martial arts. Isometric exercises were first brought to the modern public's attention in the early days of physical culture, the precursor to body building many of the great bodybuilders of the day incorporated isometric exercises into their training regimens.

Asana is derived from the verb root "as" which means "to sit", "to remain", etc., According to Patanjali, Asana is defined as, "sithram sukham asanam" meaning, that position which is comfortable and steady. Therefore asana means, a state of being in which one can remain physically and mentally steady, calm, quite and comfortable. Yogasanas are not to design muscles, but rather to bring the whole body to the peak of physical perfection and top efficiency by a series of carefully designed position. All the asanas, which have an effect on the diaphragm, help to massage the heart and at the same time it also massages the abdominal organs.

MATERIALS AND METHODS

The purpose of the study was to examine the effect of combination of isotonic and isometric training with asanas practices on selected bio motor variables of adolescent boys.. To achieve the purpose of the present study, thirty school boys from Zillaparishad high school Jajapur, Mahaboobnagar district, Telangana state were selected as subjects at random and their age ranged from 12 to 14 years.

The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent Isotonic and Isometric Exercises combined with Asanas Practices and Group 'B' underwent no training. The experimental group had undergone training for six weeks on alternate days. The variables namely speed and flexibility the data were subjected to "t" test and analysis of covariance technique.

TABLE – I TRAINING PROGRAMME

S.No	Exercises	Repetition	Sets	Recovery
1	Bhujangasana	8	3	2-3 Mins
2	Padaastha asana			
3	Dhanura asana			
4	Navaasana			
5	Hala asana			
6	Ardha Chakra asana			

RESULTS AND DISCUSSIONS

The results were presented in the following tables .

TABLE - II**DESCRIPTIVE ANALYSIS 't' RATIO OF SELECTED BIO MOTOR VARIABLES OF ISOTONIC AND ISOMETRIC TRAINING WITH ASANAS PRACTICES GROUP**

Sl.No	Variables	Pre Test Mean	SD (±)	Post Test Mean	SD (±)	Adjusted Mean	't' Ratio
1	Speed	8.58	0.52	8.00	0.60	8.12	3.57*
2	Flexibility	23.07	2.46	25.47	1.13	25.45868	3.38*

The above table-II documents the pre & post tests means, standard deviations and adjusted mean values of isotonic and isometric training with asanas practices group on selected variables. The obtained 't' ratios were 2.34 and 3.38 for Speed and Flexibility respectively. The obtained 't' ratios on the selected variables were found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant.

TABLE - III**DESCRIPTIVE ANALYSIS OF 't' RATIO SELECTED BIO MOTOR VARIABLES OF CONTROL GROUP**

Sl.No	Variables	Pre Test Mean	SD (±)	Post Test Mean	SD (±)	Adjusted Mean	't' Ratio
1	Speed	8.57	0.51	8.58	0.52	8.02	0.07
2	Flexibility	23.00	2.39	23.20	2.68	23.20	0.29

The above table-III documents the pre & post tests means, standard deviations and adjusted mean values of control group on selected variables. The obtained 't' ratios were 0.07 and 0.29 for Speed and Flexibility respectively. The obtained 't' ratios on the selected variables were found to be lesser than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be insignificant.

TABLE - IV
COMPUTATION OF ANALYSIS OF COVARIANCE OF BOTH THE GROUPS ON
SELECTED BIO MOTOR VARIABLES AMONG SCHOOL BOYS

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Square	F
1	Speed	BG	2.45	1	2.45	6.19*
		WG	10.66	27	0.39	
2	Flexibility	BG	37.98	1	37.98	9.44*
		WG	108.66	27	4.02	

* Significant at 0.05 level

*F 0.05 (1,27) =4.21

In table-IV the results of analysis of covariance on speed and flexibility were 6.19 and 9.44 was greater than the required value 4.21 at 0.05 level of confidence. Since the observed 'F' value was greater than the table 'F' value on all selected variables, there exists significant difference among the groups.

DISCUSSIONS AND CONCLUSIONS

In case of bio motor variables i.e. speed and flexibility the results between pre and post (6 weeks) test has been found significantly higher in experimental group in comparison to control group. The findings of the present study have strongly indicates that combination of isotonic and isometric training with asanas practices of six weeks have significant effect on selected bio motor variables i.e. speed and flexibility of school boys. Hence the hypothesis earlier set that combination training programme would have been significant effect on selected bio motor variables in light of the same the hypothesis was accepted.

From the analysis of data, the following conclusions were drawn.

1. It was found that the combination of isotonic and isometric training with asanas practices group showed significant improvement on speed and flexibility among school boys.
2. It was also found that the experimental group shown significant improvement on speed and flexibility than the control group.

REFERENCES

1. Alan Pearson (2001). Speed, Agility and Quickness. London: A & C Black.
2. Barrow, H.M., Mc. Gee. M. and Kathleen A. Tritschler (1989). *Practical measurements in Physical* Philadelphia: lea Fibiger.
3. Baumgartner A. T. and Andrew, J. (1987). *Measurement for Evaluation in Physical Education and Exercise Science*. IOWA: W.M.C Brown Publishers.
4. Jovanovic, M., Sporis, G., Omrcen, D. & Fiorentini, F. (2011). Effects of speed, agility, quickness training method on power performance in elite football players. *Journal of Strength Conditioning Research* .25(5):1285-92.
5. Lee, E. B., Vance, A. F. & Juan, C. S. (2000). Training for Speed, Agility and Quickness. USA.

6. Moreno, E. (1995). Developing Quickness, part II. Strength and Conditioning. 17(1):38–39.
7. Polman, R., Bloomfield, J. & Edwards, A. (2009). Effects of SAQ training and small-sided games on neuromuscular functioning in untrained subjects. *International Journal of Sports Physical Performance*. pp-494-505



EFFECT OF SURYANAMASKAR PRACTICE ON SPEED AND EXPLOSIVE POWER AMONG SCHOOL HANDBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of suryanamaskar practice on speed and explosive power among school handball players. Twenty subjects were selected from St. Britto hr sec school, Madurai during the academic year 2016–2017 for this study. The subject's age ranged from 14 to 17 years. The selected subjects were divided into two groups with ten subjects in each group selected randomly, suryanamaskar practice group and control group. The training periods of experimental groups were six weeks, five days per week with duration of 45 minutes. Control group did not undergo any training programme other than their routine work. The data were collected on speed and explosive power for all the two groups before the experimental period (pre-test), after six weeks of training (post-test) respectively. In order to test the effect of training, the collected data from the two groups before, during and after experimentation on speed and explosive power were statistically analyzed by using T-ratio.

KEYWORDS: suryanamaskar, experimentation,

INTRODUCTION

Yoga

Yoga focuses on harmony between mind and body. To achieve this, yoga uses movements, breath, posture, relaxation and mediation in order to establish a healthy, lively and balanced approach to life. Yoga plays an important role in games and sports also. Yoga improves near about all physical fitness and wellness components required by sportsmen. Regular yoga exercises along with other fitness exercises are helpful in developing certain aspects of fitness like flexibility, strength, endurance, balance rhythm, meditation and relaxation. Doing yoga regularly along with other fitness methods is very helpful in developing certain aspects of fitness that can improve performance in competitive sports. (sportsyogafitness.com)

Suryanamaskar

There are ten different steps / postures for performing that make a Suryanamaskar. Before doing a Suryanamaskar we should chant all the thirteen chants in the given order starting from “Om Mitraaya namahaa: Every step in Suryanamaskar is a different yoga position. During every step we have to do the ‘purak’ and rechak breathing steps alternately.

Health Benefits of Suryanamaskar Poses

In addition to the general health benefits associated with performing Suryanamaskar, each of the yoga poses in the series provides specific health benefits as mentioned below.

1. Pose 1 (and 12): Promotes balance, (stimulates energizes) the respiratory system, and provides to back neck and shoulder, muscles.
2. Pose 2 (and 11): Promotes balance, promotes digestion, exercises arms and shoulder muscles, tones the spine, and promotes flexibility in back and hips.
3. Pose 3 (and 10): Regularizes and controls blood circulation, tones abdominal tracts, stretches back and leg muscles, stimulates spinal nerves, and stimulates lymphatic system.
4. Pose 4 (and 9): Exercises spine, insides strengthening strengthens hand and wrist muscles.
5. Pose 5 (and 8): Stimulates blood circulation, strengthens the heart, wrist and arm muscles, and relieves neck and shoulder tension.
6. Pose 6: Strengthens leg and arm muscles, increases flexibility (of) neck and shoulders, makes arms, shoulder, neck and back muscles, exercises back muscles, and releases tension in neck and shoulder.
7. Pose 7: Stimulates circulation to abdominal organs, tones digestive tract, stretches upper and lower body, promotes flexibility in the back, stimulates nerves in spine.
8. Poses from 8 to 12 are essentially repetitions of poses one to five the health benefits of each are similar to their corresponding poses.

Selection of Subjects

The purpose of this study was to find out the effect of suryanamaskar practice on speed and explosive power of school handball players. For this twenty school handball players were selected at random as subjects from St.Britto higher secondaryschool, Madurai, Tamilnadu, India.Their age was between 14-17 years.

Experimental Design

The study was formulated as pre and post test random group design, in which twenty players were divided into two groups. The suryanamaskar practice group (n=10) and control group (n=10) did not undergo any specific training.

Selection of Variables

The selected speed and explosive power variables.

Selection of Tests

The selected criterion variables were concerned the speed was measured by 50 yards run (in seconds) and explosive power was measured by Standing broad jump (in meters).

Collection of the Data

Suryanamaskar practice was given as per the training schedule of five days per week for six weeks. The pre and post test data on the selected criterion variables were collected by administering the test as per the standardized procedures at prior and after six weeks of the training programme.

Experimental Design and Procedures

The study involved a single dimensional design with two groups assigned with different trainings. To facilitate the study, twenty school handball players from St. Britto higher secondary school, Madurai, Tamilnadu, India were selected as subjects at random and their age was between 14 to 17 years. They were divided into two groups namely Suryanamaskar Practice group and Control group who did not involve in any special training. The pre-test was taken from the subjects at prior to the administration of the different trainings. The subjects were involved with their respective training programme for five days per week for a period of six weeks under the personal supervision of the research scholar. At the end of six weeks, the post test was taken on selected criterion variables.

RESULTS

Test of Significance

This is the crucial portion of the discussion in arriving at the conclusion by examining the hypothesis. The procedure of testing the hypothesis is in accordance with the result obtained in relation to the level of confidence, which was fixed at 0.05 levels, which was considered necessary for this study. These tests are usually called the tests of significance. Since we test whether the difference between the pre-test and post test scores of the samples are significant or not.

Level of Significance

To test the significance of 't' values as level of significance 0.05 level was chosen for the required table value for the degrees of freedom. The data collected prior to and after the training period on speed and explosive power for the suryanamaskar practice group has been analyzed.

ANALYSIS OF 'T'-RATIO THE PRE AND POST-TEST FOR CONTROL GROUP AND SURYANAMASKAR PRACTICE GROUP ON SPEED

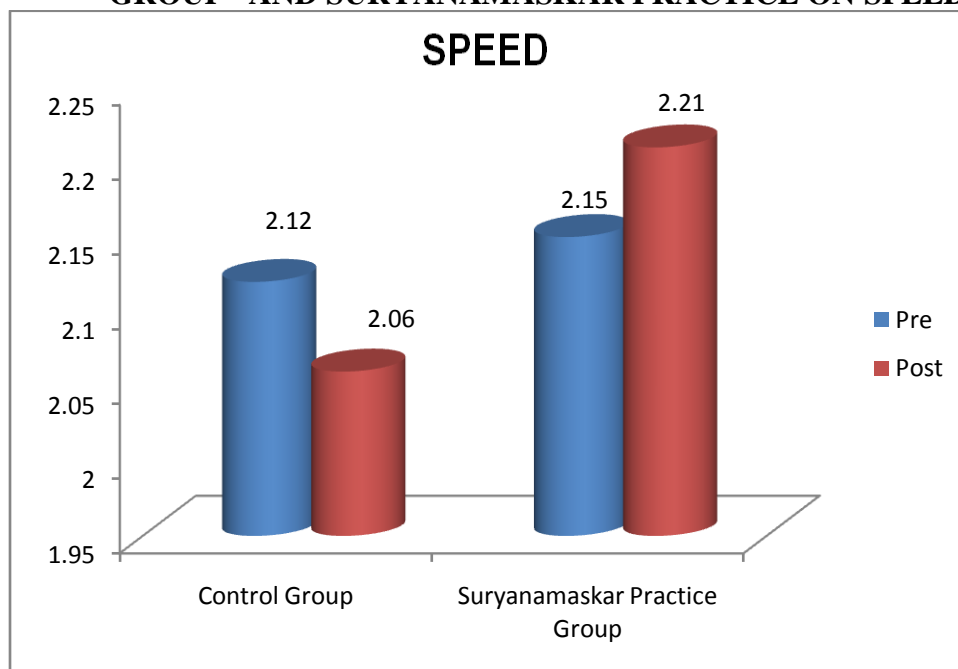
Variable	Groups	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Speed	Control	7.97	7.97	0.55	0.55	0.14	14	0.81
	Suryanamaskar Practice	7.98	7.46	0.18	0.16	0.14		12.97*

*Significance at 0.05 level of confidence

RESULTS

The table shows that the mean values of pre-test and post-test of control group on speed were 7.97 and 7.97 respectively. The obtained 't' ratio was 0.81, since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups on speed were 7.98 and 7.46 respectively. The obtained 't' ratio was 12.97 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and suryanamaskar practice group in speed. It may be concluded from the result of the study that experimental group improved in speed due to six weeks of suryanamaskar practice.

BAR DIAGRAM SHOWS THE PRE AND POST TEST MEAN VALUES OF CONTROL GROUP AND SURYANAMASKAR PRACTICE ON SPEED



ANALYSIS OF 'T'-RATIO THE PRE AND POST-TEST FOR CONTROL AND EXPERIMENTAL GROUP ON EXPLOSIVE POWER

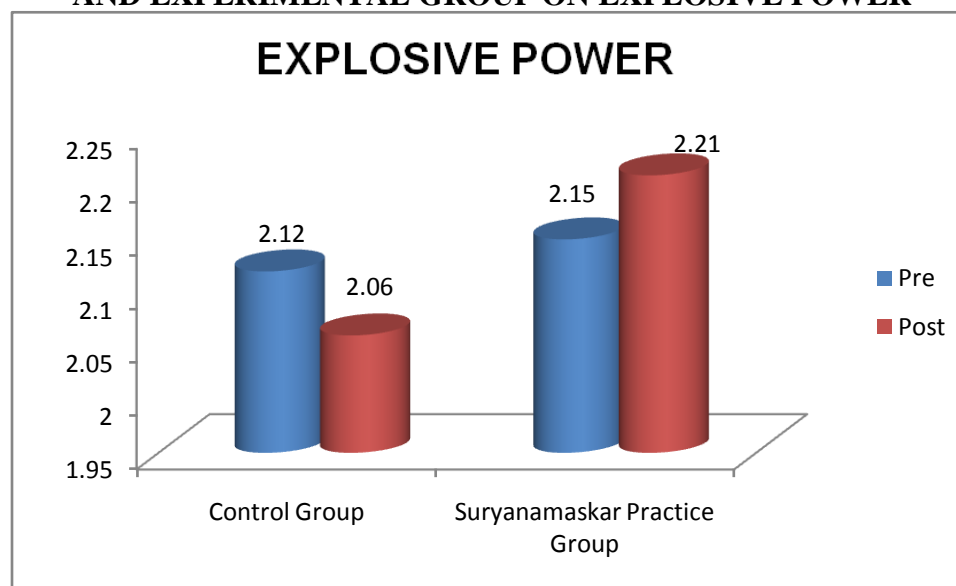
Variable	Group	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
Explosive power	Control	2.12	2.06	0.12	0.28	0.03	14	1.08
	Suryanamaskar Practice	2.15	2.21	0.04	0.04	0.07		18.36*

* *significance at 0.05 level of confidence*

Results

The Table shows that the mean values of pre-test and post-test of control group on explosive power were 2.12 and 2.06 respectively. The obtained 't' ratio was 1.08 since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups on explosive power were 2.15 and 2.21 respectively. The obtained 't' ratio was 18.36 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and suryanamaskar practice in explosive power. It may be concluded from the result of the study that suryanamaskar practice group improved in explosive power due to six weeks of suryanamaskar practice.

BAR DIAGRAM SHOWS THE PRE AND POST MEAN VALUES OF CONTROL AND EXPERIMENTAL GROUP ON EXPLOSIVE POWER



DISCUSSION ON FINDINGS

The results of the study indicate that the experimental group namely suryanamaskar practice had significantly improved in the selected dependent variables namely speed and explosive power.

Discussion of hypotheses

It was hypothesized that there would be a significant improvement on speed and explosive power variables due to suryanamaskar practice. The present study result shows significant improvement on speed and explosive power variables. Hence, the due to suryanamaskar practice research hypotheses of the investigator was accepted.

CONCLUSIONS

It was concluded that suryanamaskar practice is effective in control group. No difference was found in the control group. It was concluded that there was significant improvement in speed and explosive power due to suryanamaskar practice among school handball players. The result of the study reveals that suryanamaskar practice would improve among school handball players on speed and explosive power variables significantly.

REFERENCES

- Bloomfield J, Polman R, Donoghue P, McNaughton L. (2005) Speed and agility conditioning methodology for random intermittent dynamic type sports. J Strength Cond Res. www.ncbi.nlm.nih.gov/pubmedterm
- Buchheit M, Mendez-Villanueva A, Quod M, Quesnel T, Ahmaidi S. Improving acceleration and repeated sprint ability in well-trained adolescent handball players: speed versus sprint interval training. Int J Sports Physiol Perform. J strength Cond Res 2010 Jun;5(2):152-64.
- Bouchard, C. 2001. Physical activity and health : introduction to the dose-response symposium. Medicine and science in sports and exercise 33(suppl) : S 347-S350.
- Nelson, M.E., Rejeski, W.J., Blair, S.N., Duncan, P.W., Judge, J.O., King, A.C., Macrea, C.A., and Castaneda-Sceppa, C. (2007) Physical activity and public health in older adults: Recommendations from American College of Sports Medicine and the American Heart Association. Medicine & Science in Sports & Exercise 39(8):1435-1445.
- Blair, S.N. 2009. physical inactivity: the biggest public health problem of the 21 st century. british journal of the sports medicine 43:1-2
- Howley, E. 2008 Physical Activity Guidelines for americans president's council on physical fitness and sports research digest series 9(4), december.
- Pratima M. Bhutkar, Milind V. Bhutkar, Govind B. Taware, Vinayak Doijad and B.R. Doddamani (2008) "Effect of Suryanamaskar Practice on Cardio-respiratory Fitness Parameters". Al Ameen J Med Sci Volume 1, No.2, 2008 Bhutkar P.M. et al © Al Ameen Charitable Fund Trust, Bangalore 127 Al Ameen J Med Sci 1 (2): 126-129.
- Sinha, B., S. Ray, A. Pathak and W. Selvamurthy (2002) "Energy cost and cardio respiratory changes during The practice of surya namaskar" october 30, 2002 indian j physiol pharmacol 2004; 48 (2) : 184-190.
- Tiken, L., Kosana, K., Joy, A.K. and Inaobi. T. (2002). "Influence of Specific Yoga and Aerobic Exercise on Physical Fitness of SAI (NERC IMPHAL) STC Athletes" Journal of Sports and Sports Sciences, 25 (3): PP. 47-51.
- Woodyard C. (2012) Exploring the therapeutic effects of yoga and its ability to increase quality of life. Int J Yoga. 4(2):49-54.



EFFECT OF PHYSICAL ACTIVITY AND TRAINING OF KOGA COMBINED WITH MEDITATION AMONG ADOLESCENT BOYS

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ABSTRACT

Adolescent obesity is an epidemic problem in developed and developing countries. India, which is already is the third most obese country in the world. By 2025, India will have over 17 million obese children and stand second among 184 countries where the number of obese children is concerned (Lobstein). The incidence of obesity at all ages is on the rise in India. According to a report from urban South India, 21.4 % of boys and 18.5% of girls aged 13-18 years were overweight or obese (Kumar, et al).The prevalence of obesity among School children in India have been reported between 5.74% and 8.82% (The prevalence of obesity among School children in India have been reported between 5.74% and 8.82% (Subramanyam et al). This research aims to assess whether is there any effect of 12 weeks Physical Training and Training of Koga with Meditation on Selected Biochemical and Physiological Variables Among Adolescents Boys. To accomplish the purpose of the current study forty-five adolescent boys, age ranged from 14 to 17 years old randomly selected from CBSE Schools, Chennai. They are randomly divided and employed into three equal groups, consist of 15 members each. Group-I had Given an hour combined training of selected physical exercise training and meditation, Group-II had Given an hour combined training of Koga and meditation, and Group-III was control which had not received any unique pieces of exercise apart from the regular activities. The physical training, Koga training, and meditation have selected as independent variables. Total cholesterol and Resting heart rate selected as dependent variables. And all dependent variables were measured by standardizing test item as Lipid Profile Test (mg /dL) and heart rate monitor (Beats/Minute). Analysis of Covariance (ANCOVA) was applied to find out the significant mean differences. In all the cases, the 0.05 level of significance was fixed to test

the hypothesis. The results of the study exposed that the experimental groups had finished a significant difference in all the selected variables such as Total Cholesterol and Resting Heart Rate to compare the control group. Hence it was concluded that Koga training with meditation reduced Total Cholesterol and Resting Heart Rate among Adolescents Boys.

KEYWORDS: Physical Activity, Koga, Total Cholesterol, Resting Heart Rate

1. INTRODUCTION

“Obesity is defined as abnormal or excessive fat accumulation that may impair health” (WHO). Obesity emanates from human’s lifestyle, we consume vast numbers of calories but burn less, it creates more obese persons than earlier. Adolescent obesity is an epidemic problem in developed and developing countries. India, which is already is the third most obese country in the world. By 2025, India will have over 17 million obese children and stand second among 184 countries where the number of obese children is concerned (Lobstein). The incidence of obesity at all ages is on the rise in India. According to a report from urban South India, 21.4 % of boys and 18.5% of girls aged 13-18 years were overweight or obese (Kumar, et al). The prevalence of obesity among School children in India have been reported between 5.74% and 8.82% (Subramanyam et al).

PHYSICAL ACTIVITY

“Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure” (WHO). World Health Organization recommends Children should do moderate- to vigorous-intensity physical activity for at least 60 minutes daily. Most of the physical activities are aerobic based not only aerobic exercise is not enough for children but also needs Vigorous-intensity activities at least three times per week, it develops musculoskeletal

KOGA

Koga is a blend of kickboxing and yoga. It is a fusion workout with kickboxing movements, isometric movements, punches, and meditation. Koga developed in 2001 by Jon Koga (physical therapist from New York). Koga thinks about core and bodyweight strength training.

2. DEFINITION OF THE TERMS

2.1 Total Cholesterol

Total cholesterol is the total amount of cholesterol in your blood. Your total cholesterol includes low-density lipoprotein (LDL, or “bad”) cholesterol and high-density lipoprotein (HDL, or “good”) cholesterol. Cholesterol is a waxy, fat-like substance found in every cell in your body.

2.2 Resting Heart Rate

Resting heart rate is a number of your heart beats per minute while at complete rest. It will lower by way of your heart becomes stronger with aerobic exercise training. A low resting heart rate is an indicator of good fitness and your fitness level and full cardiovascular health.

3. METHODOLOGY

3.1 Subjects, Variables and Tests

For the achievement of the resolution of the current study, the investigator selected a total number of forty-five (N=45) adolescent boys had been chosen randomly from CBSE schools, Chennai. The participants' age ranged from 14 to 17 years. The subjects were voluntarily participated to conduct the study. They were simplified into three groups. Each group consists of 15 participants, which were assumed to be apt for the study.

Table I: Selection of Tests

Variables	Test
Total Cholesterol	Lipid Profile Test, mg /dL
Resting Heart Rate	Heart Rate Monitor, Beats/Minute

3.2 Experimental design

The experimental treatment allocated Physical training with meditation and Koga training with meditation to the experimental groups. The pre-test and post-test random group design used in the present study. The selected subjects randomly assigned to experimental and control groups of 15 each. Group-I had Given an hour of selected physical exercise training with meditation, Group-II had given Koga Training with meditation, and Group-III was control which had not received any unique pieces of exercise apart from the regular activities. The groups tested on selected criterion variables such as total cholesterol and resting heart rate before and after the training programme.

3.3 Treatment and Training Program

Throughout the training period, the experimental groups underwent Physical training with meditation and Koga training with meditation for five days per week for twelve weeks. The workout lasted to 60 minutes/session including dynamic warming up, and warming down periods. Participants completed five training sessions per week over a 12-week period (60 sessions). Control group were instructed not to participate in any strenuous physical exercise and specialized training throughout the training programme. However, they performed regular activities as per the curriculum.

3.4 Statistical Procedure

The pre-test and post-test random group design used in the present study. The data collected from groups before and after completion of the training period on selected criterion variables. The selected variables were statistically examined for significant differences if any, by applying the analysis of covariance (ANCOVA). To find the significance 0.05 level of Alpha fixed.

4. RESULTS

The subjects were tested on selected criterion variables such as total cholesterol and resting heart rate at before and immediately after the training period. The analysis of covariance on total cholesterol and resting heart rate of experimental groups and control group are analyzed and presented in given below tables respectively.

Table – II**COMPUTATION OF ANALYSIS OF COVARIANCE ON TOTAL CHOLESTEROL****(Scores in mg/dL)**

* Significant 0.05 level of significance

(The table values required for significance at 0.05 level with df 2 and 42, 2 and 41 were 3.21 and 3.22 respectively).

Table-II showed that the pre-test means values of total cholesterol for experimental groups and control group were 158.9, 159.1 and 159.0 respectively. The obtained 'F' ratio value of 0.05 for pre-test scores of experimental groups and control group on total cholesterol was less than the required table value of 3.21 for significance with df 2 and 42 at 0.05 level of significance. The pre-test means proved that there was no significant difference between the experimental and control groups.

The post-test means values for total cholesterol for experimental groups and control group were 156.4, 155.0 and 159.2 respectively. The obtained 'F' ratio value of 11.72 for post-test scores of experimental groups and control group was higher than the required table value of 3.21 for significance with df 2 and 42 at 0.05 level significance. This evidenced that there was significant difference between the groups.

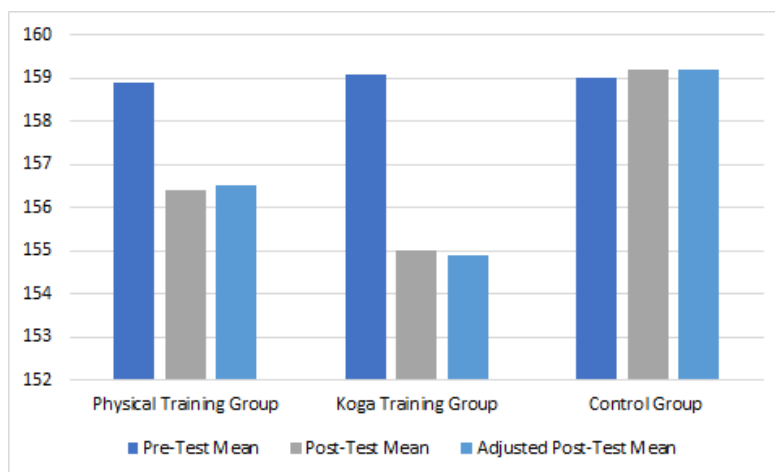
The adjusted post-test means values of total cholesterol for experimental groups and control group were 156.5, 154.9 and 159.2 respectively. The obtained 'F' ratio value of 40.64 for adjusted post-test scores of experimental groups and control group was greater than the required table value of 3.22 for significance with df 2 and 41 at 0.05 level of significance. This proved that there was a significant difference among the means due to the experimental trainings on total cholesterol.

The results of this analysis have shown that there was a significant difference between experimental groups and control group on total cholesterol.

The mean values of experimental groups and control group on total cholesterol were graphically represented in Figure-I.

FIGURE -I
BAR DIAGRAM ON ORDERED MEANS OF TOTAL CHOLESTEROL
(Scores in mg/dL)

Test	Phy sica l	Kog a	Con trol	re of vari anc	Sum of square	Df	Mean square	"F"
Pre	158.9	159.1	159.0	B	0.451	2	0.226	0.05
				W	180.4	42	4.297	
Post	156.4	155.0	159.2	B	138.1	2	69.08	11.72*
				W	247.4	42	5.892	
Adjusted	156.5	154.9	159.2	B	143.1	2	71.56	40.64*
				W	72.18	41	1.761	



Test	Physical	Koga	Control	re of vari	Sum of square	Df	Mean square	"F"
Pre	78.12	78.48	78.59	B	1.794	2	0.897	0.35
				W	107.0	42	2.548	
Post	76.10	75.00	79.13	B	139.5	2	69.75	20.96*
				W	139.7	42	3.327	
Adjusted	76.19	74.94	78.99	B	128.7	2	64.36	30.22*
				W	87.31	41	2.130	

Table – II

COMPUTATION OF ANALYSIS OF COVARIANCE ON RESTING HEART RATE (Scores in beats/minute)

* Significant 0.05 level of significance

(The table values required for significance at 0.05 level with df 2 and 42, 2 and 41 were 3.21 and 3.22 respectively).

Table-III showed that the pre-test means values of resting heart rate for experimental groups and control group were 78.12, 78.48 and 78.59 respectively. The obtained 'F' ratio value of 0.35 for pre-test scores of experimental groups and control group on resting heart rate was less than the required table value of 3.21 for significance with df 2 and 42 at 0.05 level of significance. The pre-test means proved that there was no significant difference between the experimental and control groups.

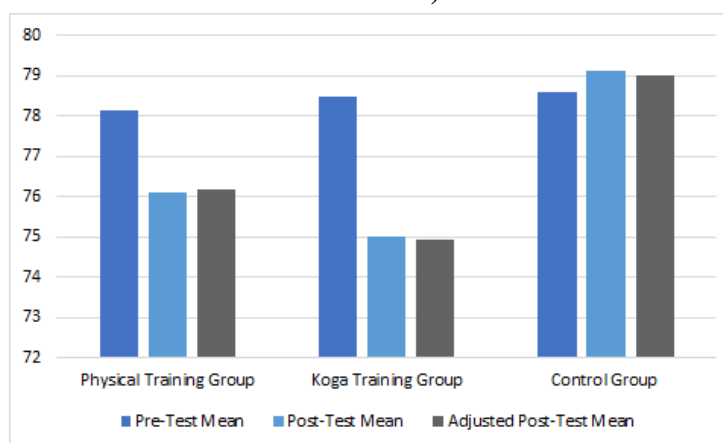
The post-test means values for resting heart rate for experimental groups and control group were 76.10, 75.00 and 79.13 respectively. The obtained 'F' ratio value of 20.96 for post-test scores of experimental groups and control group was higher than the required table value of 3.21 for significance with df 2 and 42 at 0.05 level significance. This evidenced that there was significant difference between the groups.

The adjusted post-test means values of resting heart rate for experimental groups and control group were 76.19, and 74.94 respectively. The obtained 'F' ratio value of 30.22 for adjusted post-test scores of experimental groups and control group was greater than the required table value of 3.22 for significance with df 2 and 41 at 0.05 level of significance. This proved that there was a significant difference among the means due to the experimental trainings on resting heart rate.

The results of this analysis have shown that there was a significant difference between experimental groups and control group on resting heart rate.

The mean values of experimental groups and control group on resting heart rate were graphically represented in Figure-II.

FIGURE -II
BAR DIAGRAM ON ORDERED MEANS OF RESTING HEART RATE (Scores in beats/minute)



5.CONCLUSIONS

The results of the current study indicated that twelve weeks Physical training with meditation and training of Koga with meditation led to significant improvements in total cholesterol and resting heart rate among adolescent boys. Furthermore, training of Koga with meditation evidenced more effective in reducing total cholesterol and resting heart rate. The training method appears to endorse fitness. Based on the results of the study the investigator recommend that a similar research can be conducted for a different age, and gender. It also suggests that same research can be performed with physical and psychological variables also.

REFERENCE

- Ahmad, Q. I., Ahmad, C. B., & Ahmad, S. M. (2010). Childhood Obesity. **Indian Journal of Endocrinology and Metabolism**, 14(1), 19–25.
- Ajayaghosh MV and Dr. V Mahadevan. (2017). Effect of an hour physical activity and Koga on vital capacity and VO2 Max among adolescents. **International Journal of Physiology, Nutrition and Physical Education**, 2(2): 520-523.
- Andersen, L. B., Riddoch, C., Kriemler, S., Hills, A. P., & Hills, A. (2011). Physical activity and cardiovascular risk factors in children. **British Journal of Sports Medicine**, 45(11), 871–6.

Biddle, S. J., Gorely, T., & Stensel, D. J. (2004). Health-enhancing physical activity and sedentary behavior in children and adolescents. **Journal of Sports Sciences**, 22(8), 679–701.

Dugan, S. A. (2008). Exercise for Preventing Childhood Obesity. **Physical Medicine and Rehabilitation Clinics of North America**. <https://doi.org/10.1016/j.pmr.2007.11.001>.

Graf, C., Ferrari, N., Beneke, R., Bloch, W., Eiser, S., Koch, B., Woll, A. (2017). [Recommendations for Physical Activity and Sedentary Behaviour for Children and Adolescents: Methods, Database and Rationale]. *Gesundheitswesen (Bundesverband Der Ärzte des Öffentlichen Gesundheitsdienstes (Germany))*, 79(S 01), S11–S19.

Lobstein, T., & Jackson-Leach, R. (2016). Planning for the worst: estimates of obesity and comorbidities in school-age children in 2025. **Pediatric Obesity**, 11(5), 321–325.

Polo-Oteyza, E., Ancira-Moreno, M., Rosel-Pech, C., Sánchez-Mendoza, M. T., Salinas-Martínez, V., & Vadillo-Ortega, F. (2017). An intervention to promote physical activity in Mexican elementary school students: Building public policy to prevent noncommunicable diseases. **Nutrition Reviews**, 75, 70–78.

Raitakari, O. T., Porkka, K. V., Taimela, S., Telama, R., Rasanen, L., & Viikari, J. S. (1994). Effects of persistent physical activity and inactivity on coronary risk factors in children and young adults. The Cardiovascular Risk in Young Finns Study. **American Journal of Epidemiology**, 140(3), 195–205.

Rema, N., & Vasanthamani, G. (2011). Prevalence of nutritional and lifestyle disorders among school going children in urban and rural areas of Coimbatore in Tamil Nadu, India. **Indian Journal of Science and Technology**, 4(2), 131–140.

S Kumar, DK Mahabalaraju, MS Anuroopa. (2007). Prevalence of Obesity and Its Influencing Factor among Affluent School Children of Davangere City. **Indian Journal of Community Medicine**. 32(1).

Steinbeck, K. S. (2001). The importance of physical activity in the prevention of overweight and obesity in childhood: a review and an opinion. *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity*, 2(2), 117–130.

Subramanyam, V., Jayashree, R., & Rafi, M. (2003). Prevalence of overweight and obesity in affluent adolescent girls in Chennai in 1981 and 1998. **Indian Pediatrics**, 40, 775–779.

Trost, S. G., Sirard, J. R., Dowda, M., Pfeiffer, K. A., & Pate, R. R. (2003). Physical activity in overweight and nonoverweight preschool children. **International Journal of Obesity**, 27(7), 834–839. World health report (2002) Reducing risks, promoting healthy life. Published by **World health organization**, from <http://www.who.int/whr/2002/en/index.html>.

WEBLIOGRAPHY

<http://www.kogafit.com>

<http://www.who.int/mediacentre/factsheets/fs311/>

http://www.who.int/topics/physical_activity/

<https://labtestsonline.org/understanding/analytes/lipid/tab/test/>

<https://www.britannica.com/science/adolescence>

<https://www.healthychildren.org/The-FITT-Plan-for-Physical-Activity.aspx>



NUTRIENTS DENSE MULTI MILLETS HEALTH MIX

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ABSTRACT

Nutrition is an important part of sport performance for young athletes. A well-balanced diet containing appropriate amounts of macronutrients (protein, carbohydrates and fat) and micronutrients (vitamins and minerals) is essential to provide enough energy for growth and activity. Fluids are also essential for hydration to support growth and athletic performance. Millets are known for several health benefits and it is mainly attributed to its nutritional composition. Millets provide a good source of energy, protein, vitamins and minerals including trace elements. The edible component of millet kernel is the rich source of phytochemicals, such as dietary fiber and polyphenols. Millets have great potential for being utilized as health drink/food by virtue of their nutritional qualities. The present study was conducted to formulate and evaluate the health mix by using small millets. Millets (kodo millet, little millet, foxtail millet) were soaked for 8 hours and packed loosely in a cloth and allowed for germination. The germinated grains are dried in cabinet drier at 60°C for 6 hours, sprouts were removed, roasted and ground into flour using pulverizer. Multi-millet health mix was formulated using these millet flours with other ingredients viz., pulses, nuts, sugar and cardamom powder. The formulated mix was organoleptically evaluated and their nutritional composition also analysed using standard procedures. The organoleptic evaluation result showed that the health mix was highly acceptable and the mix contains 65.45g carbohydrate, 11.46g protein, 4.94g fat, 4.94g fibre, 4.07g iron, 112mg calcium, 268.52mg phosphorus and 349 calorie of energy per 100g. Since the developed health mix provides an adequate amount of micro nutrients which helps to meet the needs of sports personnel.

KEYWORDS: Multi Millets, Health Mix, Value Added Products

INTRODUCTION

Millets are considered as crop of food security because of their sustainability in adverse agro-climatic conditions (Ushakumari *et al.*, 2004) The world total production of millet grain was 762712 metric tonnes and India top ranking with a production of 334500 tonnes in 2010 (FAO, 2012). Millets have received attention for their potential role as functional foods due to health promotive phytochemicals. Millets are safe for people suffering from gluten allergy and celiac disease. They are non-acid forming and non-allergenic hence easy to digest (Saleh *et al.*, 2013). Nutrition is an important part of sport performance for young athletes. A well-balanced diet containing appropriate amounts of macronutrients (protein, carbohydrates and fat) and micronutrients (vitamins and minerals) is essential to provide enough energy for growth and activity. Fluids are also essential for hydration to support growth and athletic performance. Millets are known for several health benefits and it is mainly attributed to its nutritional composition. Millets provide a good source of energy, protein, vitamins and minerals including trace elements. The edible component of millet kernel is the rich source of phytochemicals, such as dietary fiber and polyphenols. Hence, Millets have great potential for being utilized as health drink/food by virtue of their nutritional qualities. The present study was conducted to formulate and evaluate the health mix by using small millets.

METHODS

Small millets (kodo millet, little millet, foxtail millet and barnyard millet) were procured from Dept. of millets, Tamil Nadu Agricultural University, Coimbatore, Tamilnadu. Other minor ingredients required for mix preparation were procured from local market. The whole Millets (kodo millet, little millet, foxtail millet) were soaked in water for 12 hours, then drained the water and packed in a muslin cloth and allowed to germinate. The germinated grains were shade dried for moisture content of 14 per cent and roasted to enhance the flavor and texture. Then the millets were dehulled in double chamber centrifugal dehuller and finely powdered using pulverizer.

Formulation of multi millets health mix

Nutrient dense multi millets health was formulated using the ingredients of finger millet, kodo millet, little millet, foxtail millet, wheat, pulses (green gram, bengal gram, soya bean, peas, groundnut), nut (almonds & cashew), milk powder, jaggery and flavoring agent (cardamom & dried ginger). Millets are rich in calories, protein, fats, vitamins and minerals. Pulses selected for this study contains protein of high biological value, groundnuts are valuable for its calorific value and jaggery for its iron content. Combinations of all these ingredients contribute good quality and quantity of nutrients and make the supplement as suitable food item for improving the health status of the consumer. The amount of ingredients incorporated in the health mix was presented in the Table 1. All the ingredients except jaggery were mixed thoroughly and packed in High Density Poly Ethylene bags. While preparation Jaggery and cardamom powder were added for taste

TABLE 1. FORMULATION OF MULTI MILLET HEALTH MIX

Items	Quantity
Wheat	- 200g
Kodo millet	- 200g
Little millet	- 200g

Foxtail millet	- 200g
Finger millet	- 200g
green gram	- 100g
Whole Bengal gram	- 20g
Whole soya beans	- 20g
Jaggery	- 100g
Peas (dried)	- 20g
Groundnut	- 20g
Almonds	- 20g
Cashew	- 20g
Dried ginger	- 5 g
Cardamom	- 2 g
Milk powder	- 20g

Sensory evaluation of health mix

The developed health mix powder diluted with water and cooked for 10 min and served in the form porridge to 50 semi trained judges using 9 point hedonic scale as described by Subbulakshmi and Amutha (2013)

Nutrient composition of health mix

Multi millet health mix was estimated for moisture (Ranganna, 1995). Carbohydrates (Sadasivam and Manickam, 2008), crude protein (Micro kjeldahal, Nx6.25), crude fat (solvent extraction), calcium (titration), iron (colorimetric) were determined by the AOAC (2000). Crude fibre (acid and alkali) was determined by the method of Sadasivam and Manickam (2008) and for Energy was determined by Nutritive value of Indian food (ICMR, 2010).

RESULT

The developed health mix scored 8.7 ± 0.02 color and appearance, 8.6 ± 0.01 flavour, 8.7 ± 0.10 texture, 8.6 ± 0.16 taste and 8.8 ± 0.10 overall acceptability score. The formulated mix contains 65.45g carbohydrate, 11.46g protein, 4.94g fat, 4.94g fibre, 4.07g iron, 112mg calcium, 268.52 mg phosphorus and 349 calorie of energy per 100g. Germination of multi millets helps to increase significantly the nutrient composition, fibre, crude fat, vitamins B, C and their availability, minerals improve the bioavailability of nutrients, sensory attributes of the grains. Multi millet based health mix is used as a cereal base for low dietary bulk and calorie dense weaning foods, supplementary foods, health foods and also amylase rich foods. Kumar *et al* (2013) developed health drink powder from malted finger millet, various combinations of pulses and skim milk powder. it has very high content of protein (25.01%) and calcium (1018.7 mg/100 g). Karuppasamy and Malathi (2013) formulated the small millet porridge using kodo millet, little millet and foxtail millet and result revealed that 100 per cent small millet based porridge was highly acceptable and had low glycemic index due to the high dietary fibre content.

CONCLUSION

Millet based products are economically viable and also it highlights the excellent medicinal and nutritional qualities. The developed multi millet health mix contains high protein, calcium, iron and phosphorus and suitable for all age groups

REFERENCE

- AACC. 2000. Approved methods of the American Association of Cereal Chemists. Method: 38-11 9th ed, St. Paul. MN: American Association of Cereal Chemists. Minnesota. USA.
- FAO 2012. Food and Agriculture Organization. Economic and Social Department: The Statistical Division. Statistics Division 2012. Available from FAO [<http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567>]. Posted September 29, 2012.
- ICMR, 2010. Nutritive value of Indian foods National Institute of Nutrition. Indian Council of Medical Research. Hyderabad. India.
- Karuppasamy, P and Malathi, D. 2013. Standardization and evaluation of therapeutic foods from foxtail millet, little millet, kodo millet and its impact study on diabetes. Thesis submitted to Community Science College & Research Institute, Madurai.
- Kumar A, Goel BK, Karthikeyan S, Asgar S, Gedda AK. 2013. Protein and Calcium Rich Malted Health Drink Power. J Food Process Technology 4:214. doi: 10.4172/2157-7110.1000214.
- Ranganna, S. 1995. Manual of analysis of fruits and vegetable products. Tata Mc Graw Hill Publishing Co., Ltd., New Delhi: 71.
- Sadasivam, S. and Manickam, A. 2008. Biochemical Methods. 3rd Edn. New Age International Publishers. New Delhi: 11-37.
- Saleh, A. S.M., Zhang, Q., Chen, J. and Shen, Q. 2013. Millet Grains: Nutritional Quality, Processing, and Potential Health Benefits. Comprehensive Reviews in Food Science and Food Safety, 12: 281–295. doi:10.1111/1541-4337.12012
- Subbulakshmi, B. and Amutha, S. 2013. Quality protein maize for nutritional security. Asian Journal of Home Science. 8 (2): 566-569.
- Ushakumari, SR., Shrikantan, L and Malleshi NG. 2004. The functional properties of popped, flaked, extruded and roller dried foxtail millet. International Journal of Food Science and Technology, 39: 907-915.



PHYSICAL ACTIVITY ON ACADEMIC PERFORMANCE A META ANALYSIS

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ABSTRACT:

Objective: The aim of this analysis was to systematically assess and meta-analyze the effects of physical activities or exercise on academic achievements including academic behavior and cognitive skills. **Research Design and Methods:** We carry out a systematic review of the literature between 2010 to 2017 in representative databases for the effect of physical activities or exercise training on academic achievements including language, reading and mathematics- related skills. Our Inclusion criteria which are not considering the journals published before 2010. Exclusion criteria are followed that physically and mentally challenged pupils are skipped. **Results:** The assessments are arranged as country views and Positive values represent a direct relationship between physical activity influence in academic achievement scores. Out 100 articles 50 articles met our inclusion criteria. Among these 25 articles from USA give positive relations on academic performance, as well as 10 articles from UK, 6 articles from India, 3 articles from Canada, 3 articles from Norway and 3 articles from Finland also report as physical activity helps to enhancing the academic performance also. **Conclusion:** Physical activity, especially physical education, benefits several aspects of academic achievement, such as mathematics-related skills, reading, and composite etc. Physical activities also help to improve their academic behavior such as task behavior, attendance etc. Cognitive skills such as attention, memory, concentration and mood also developed due to physical activity.

KEYWORDS: Physical Activities, Academic Performance.

INTRODUCTION:

The continuous practice of physical exercise has been shown to have positive effects on various metabolic functions such as cardiovascular capacity, pulmonary ventilation, secretion of certain hormones, platelets function and coagulation, renal function, etc. as well as being associated with a decrease in chronic non-contagious diseases such as diabetes, cardiovascular diseases and respiratory diseases. But in the last decades, physical exercise has been linked to improvements in brain structures, which leads to an improvement in cognitive functions such as attention, memory, planning, inhibition, etc. This last situation has allowed establishing a relation between the practice of physical exercise and the academic performance.

The statement “healthy children learn better” is supported by the evidence in the literature (Ehrlich, 2008). Maybe the most established relationship of health and achievement is between eating breakfast at school and academic performance. This is a relationship that persists regardless of socioeconomic status. Fewer established but increasingly supported by the literature is the link between school-based physical activity and academic performance (Castelli, Hillman, Buck, & Erwin, 2007; Chomitz et al., 2009). Published research has reported mixed results on the relationship between physical fitness and academic achievement; however, findings suggest that physical activity can have beneficial influences on student behavior that may result in increased academic performance. One study’s results indicated that there was “a consistent positive relationship between overall fitness and academic achievement” (Vail, 2006, p. 15). In a large national study, researchers found that for children in kindergarten through fifth grades, that girls with the highest exposure to physical education scored on average.

The majority models that account for factors influencing qualifications include cognitive variables such as attention, memory and executive functions. In addition, numerous studies establish the relationship between practicing physical exercise and cognitive function improvement. This fact allows establishing a relation between the practice of physical exercise, the improvement of cognitive functions and the increase of the academic performance of the students.

Physical education period:

To make the most of the potential benefits of student involvement in physical education class, schools and physical education teachers can consider increasing the amount of time students spend in physical education or adding mechanism to increase the quality of physical education class. Article in the assessment examined increased physical education time (achieved by increasing the number of days physical education was provided each week or increase class time) and/or enhanced quality of physical education (achieved through strategies such as using trained instructors and increasing the amount of active time during physical education class).

Physical activity:

Physical activity is defined as any bodily movement produced by the voluntary body muscles that require energy expenditure.

Recess:

School board, inspector, principals, and teachers can feel confident that provided that recess to students on a regular basis may advantage academic behaviors, while also assist social development and contributing to overall physical activity and it's interrelated to health benefits. There was no proof that time spent in recess had a negative aspects with cognitive skills, academic behavior and academic achievement.

Research Design and Methods: Search strategy

The databases such us

- ☐ Pubmet
- ☐ Google scholar
- ☐ Science Direct
- ☐ Human Kinetics
- ☐ Medline
- ☐ PsycINFO
- ☐ SCI-Expanded
- ☐ Nature

Were searched using similar search strategy focusing on physical activities or exercise interventions conducted with school pupils. The searches were limited from 2010 to 2017 and studies published as full reports in the English language. References of relevant review articles and trials were screened to identify articles that were not found through the database searches.

Inclusion and exclusion criteria:

The following criteria were used to identify published studies for inclusion in this review. Studies had to Published in English language, articles between 2010 and October 2017, their aged range 5–18 years. Include clear measures of physical education and/or physical activity, such as physical education period, recess, extracurricular physical activity including school sports and other teams.

Compute academic performance such us cognitive, academic behaviors, and academic achievement using one or more educational outcomes. Examples include

- ☐ Academic grades
- ☐ Years of school completed
- ☐ Time on task
- ☐ Attendance
- ☐ Disciplinary problems

Study was excluded if they did not meet the above criteria. Studies also were excluded if they focused exclusively on the relationship between academic performance and fitness test

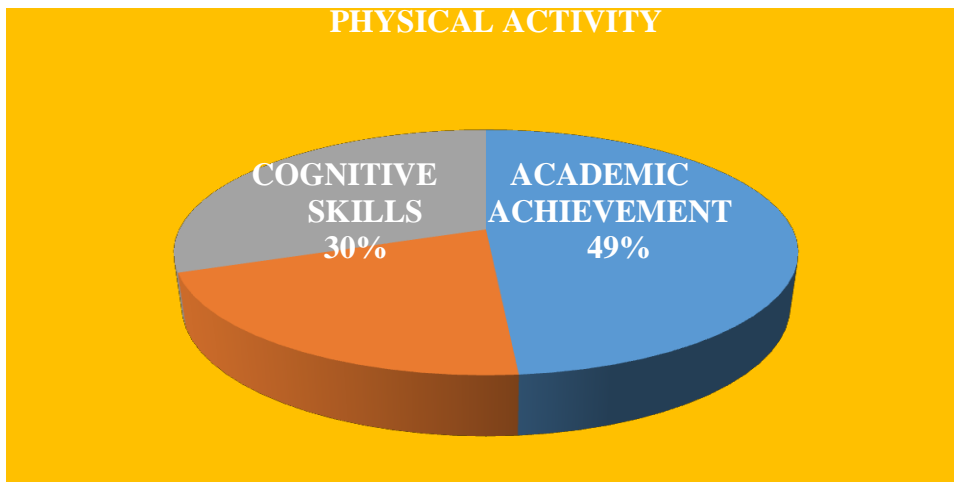
scores rather than physical activity itself. Assess articles, meta-analyses and unpublished studies were excluded.

SUMMARY CHARACTERISTICS OF REVIEWED STUDIES

TABLE I

Characteristics of studies	Number of articles (N=50)	Number of studies that Included Academic Achievement Measure			
		Academic Achievement	Cognitive skills	Academic Behavior	
Physical activity context					
PET Period	18	13	6	4	
Recess	8	2	4	3	
physical activity	24	20	12	8	
Study Design					
Experimental	22	10	5	7	
Descriptive	28	18	10	15	
Data Collection					
Cross- sectional			15		
Longitudinal			35		
Subjects Education level					
Primary		23			
Secondary		27			
Country					
USA	UK	INDIA	CANADA	NORWAY	FINLAND
25	10	6	3	3	3

FIGURE – I
PHYSICAL ACTIVITY



Data analysis:

The data from the article were used to classify and organize studies first by their physical activity context and then by outcome, sampling groups, and date published. The individual studies were well-known and all reviewed studies were treated equally, regardless of study nature or design. Although meta-analysis was considered as a method to analyze data in this review, the small number and heterogeneity of studies precluded use of that method. Therefore, explanatory literature synthesis was conducted. In this statement, the results describe the types of associations or relationships reported in the studies. When positive or negative are described in the Results section below, they refer to findings that the study investigator reported as reaching statistical significance ($p \leq 0.05$).

Results:

In the initial search of the databases, 100 articles were primarily identified. The most common reasons for excluding articles were lack of a no exercise or standard care control group; physical activities or exercise intervention could not be quantified in terms of frequency, intensity, duration, and time; study examine the effects of acute exercise; wrong study design; and irrelevant study population.

The analyses are arranged as country views and Positive values represent a direct relationship between physical activity program and academic achievement. Out 100 articles 50 articles met including criteria. Among these 25 articles from USA give positive relations on academic performance, as well as 10 articles from UK, 6 articles from India, 3 articles from Canada, 3 articles from Norway and 3 articles from Finland also report as physical activity helps to enhancing the academic performance also.

DISCUSSION AND CONCLUSION:

Latest studies report the positive relationship between physical activities and academic achievements of students. These study give explanation of the physical activity as a new tool for cognitive enhancement and gives the responsibility to the professional of the physical activity, not only be aware of the improvement of the physical qualities and motor capacity, but also of an active and associated role in the academic progress of the students.

Future research is needed to establish more precisely what type of physical activities or exercises are most appropriate and when is the ideal time to stimulate brain function, in addition to applying intervention in different school contexts and different subjects.

REFERENCE:

Ehrlich, G. (2008). Health = Performance: Efforts to increase student achievement also should address physical activity and a good diet. *American School Board Journal*, October 2008, 42-44. Retrieved September 15, 2010 from Academic Search Complete Database.

Martin, L. T., & Chalmers, G. R., (2007). The relationship between academic achievement and physical fitness. *Physical Educator*, 64 (4), 214-221. Retrieved September 15, 2010 from Academic Search Complete Database.

Murray, N. G., Low, B. J., Hollis, C., Cross, A.W., & Davis, S. M. (2007).

Coordinated school health programs and academic achievement: A systematic review of the literature. *Journal of School Health*, 77 (9), 589- 600. Doi: 10.1111/j.1746-1561.2007.00238.x.

Nelson, M. C. & Gordon-Larsen, P. (2006). Physical activity and sedentary behavior patterns are associated with selected adolescent health risk behaviors. *Pediatrics*, 117, 1281-1290. (1999). Effects of health-related physical education on academic achievement: Project

SPARK. *Research Quarterly for Exercise and Sport*, 70(2), 127- 134.

Siegel, D. (2006). The effects of physical activity on the health and well-being of YOUTHS. THE JOURNAL OF PHYSICAL EDUCATION, RECREATION & DANCE, 77(1), 11.

Taras, H. (2005). Physical activity and student performance at school. *Journal of School Health*, 75(6), 214-218.

Tremarche, P., Robinson, E., & Graham, L. (2007). Physical education and its effects on elementary testing results. *Physical Educator*, 64(2), 58-64.

Trost, S. G., & van der Mars, H., (2010). Why we should not cut P. E. *Educational Leadership*, 67 (4), 60-65. Retrieved from <http://www.ascd.org>

Trudeau, F., & Shephard, R. J., (2008). Physical education, school physical activity, school sports, and academic performance. *International Journal of Behavioral Nutrition and Physical Activity*, 5 (10), 1-12.



INFLUENCES OF LADDER TRAINING ON SELECTED MOTOR FITNESS COMPONENTS AMONG UNIVERSITY MALE STUDENTS

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ABSTRACT

The purpose of the study was find out the influences of ladder training on selected motor fitness components among university male students. To achieve the purpose of this study, 30 male university students are randomly selected as subjects from the Tamilnadu Physical Education and Sports University Chennai Tamilnadu, India. Their age ranged from 18 to 25years. Selected motor fitness components variables such as agility and speed. The selected participants were randomly divided into two groups such as Group 'A' Ladder training (n=15) and Group 'B' acted as control group (n=15). Group 'A' underwent ladder training for three days per week and each session lasted for an hour for four week. Control group was not exposed to any specific training. The data on agility and speed were collected by administering by standardized test item. The pre and post tests data were collected on selected criterion variables prior and immediately after the training program. The pre and post-test scores were statistically examined by the Analysis of Co-Variance (ANCOVA) for selected variable. It was concluded that the Ladder training group had shown significantly improved in agility and speed. However the control group had not shown any significant improvement on any of the selected variable such as agility and speed.

KEYWORDS: Co-Variance, Improvement, Randomly, Components

INTRODUCTION

Training has been explained as a program of exercises designed to improve the skills of sport and increase the energy capacities of an athlete for a particular sport. Physical training concentrates on mechanistic goals, training-programs in this area develop specific skills or muscles, often with a view of peaking at a particular time. Some physical training programs focus on raising overall physical fitness (Dick, 1980). Sport training is a physical, technical, moral and intellectual participation of an athlete with the help of physical exercises. It is a planned process for the participation of athlete and players to achieve top level performance (Hardayal Singh, 1984).

Ladder training is the multi-directional training, because the elements of strength, power, balance, agility, co-ordination, proprioception, core and joint stability, foot speed, hand eye coordination, reaction time and mobility. Each component should be integrated in to daily training session. Ladder skills are fun and functional ways to teach movement skills. By training, the mind and body to understand a verity of foot combinations. There are 4 basic skills is used when training with ladder. Runs, skips, shuffles and jump/hops.

Agility ladder drills is ladder-like training equipment which is placed on the floor to improve the athletes' foot and movements ability to change direction of the body rapidly (Robinson & Owens, 2004). It was widely used as tool to improve the speed and agility for intermittent dynamic type of sports like soccer, kho-kho and basketball (Bloomfield, Polman, O'Donoghue & McNaughton, 2007).

Agility ladder drills are also used for basketball not only to improve agility, but also to improve the balance and reaction time of the players (MacKay, 2009). Brown (2000) suggested that training to improve the conditioning for speed, agility and quickness, these training apparatus also improved the motor coordination, acceleration, balance and reaction. Speed is the ability to make rapid movements of the same type in the shortest possible time (Uppal, 2000).

THE PURPOSE OF THE STUDY

The purpose of the study was to investigate the influences of ladder training on selected motor fitness components among university male students

METHODOLOGY

To achieve the purpose of this study, 30 male university students are randomly selected as subjects from the Tamilnadu Physical Education and Sports University, Chennai Tamilnadu, India. Their age ranged from 18 to 25 years. Selected motor fitness components variables such as agility and speed. The selected participants were randomly divided into two groups such as Group 'A' Ladder Training (n=15) and Group 'B' acted as control group (n=15). Group 'A' underwent Ladder Training for three days per week and each session lasted for an hour for four week. However, control group was not exposed to any specific training but they participated in the regular schedule. The agility assessed by shuttle run and speed assessed by 30M test were selected as variables. The pre and post tests data were collected on selected criterion variables prior and immediately after the training program. The pre and post-test scores were statistically examined by the Analysis of Co-Variance (ANCOVA) for selected variable. The level of significance was fixed at .05 level of confidence, which was considered as appropriate.

RESULT AND FINDINGS

The influence of ladder training on agility and speed were analyzed and presented below.

TABLE-I: COMPUTATION OF 't'-RATIO BETWEEN PRE AND POST TEST MEANS OF LADDER TRAINING GROUP AND CONTROL GROUP ON AGILITY

Group	Test	Mean	Standard Deviation	t-ratio
Ladder Training	Pre test	12.67	± 0.21	6.37*
	Post test	11.84	± 0.17	
Control Group	Pre test	12.85	± 0.19	1.38
	Post test	12.81	± 0.48	

*Significant at 0.05 level.

The table-I shows that the pre-test mean value of ladder training group and control group are 12.67 and 12.85 respectively and the post test means are 11.84 and 12.81 respectively. The obtained dependent t-ratio values between the pre and post test means of ladder training group and control group are 6.37 and 1.38 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. Since, the obtained 't' ratio value of ladder training group was greater than the table value, it is understood that ladder training group had significantly improved the agility. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

TABLE-II: ANALYSIS OF COVARIANCE ON AGILITY OF LADDER TRAINING GROUP AND CONTROL GROUP

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F-ratio
Ladder Training Group	Control Group	Between	69.43	1	69.43	29.67*
11.78	12.82	Within	39.78	17	2.34	

* Significant at 0.05 level.

Table-II indicates that the adjusted post test means values on agility. The obtained f- ratio of 29.67 for adjusted post test mean is greater than the table value 4.45 with df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean difference exist between the adjusted post test means of ladder training and control groups on agility. The bar diagram shows the mean values of pre test, post test and adjusted post test on agility of ladder training group and control group.

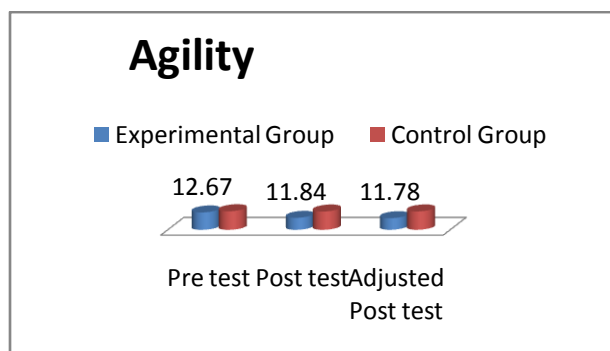


FIGURE-I: PRE TEST, POST TEST AND ADJUSTED POST TEST MEAN VALUES OF LADDER TRAINING AND CONTROL GROUPS ON AGILITY.

TABLE- III: COMPUTATION OF ‘t’-RATIO BETWEEN PRE AND POST TEST MEANS OF LADDER TRAINING GROUP AND CONTROL GROUP ON SPEED

Group	Test	Mean	Standard Deviation	t-ratio
Ladder Training	Pre test	4.96	±0.11	12.47*
	Post test	4.89	±0.08	
Control Group	Pre test	4.97	±0.16	0.37
	Post test	4.96	±0.15	

*Significant at 0.05 level.

The table-III, shows that the pre-test mean value of ladder training group and control group are 4.96 and 4.97 respectively and the post test means are 4.97 and 4.96 respectively. The obtained dependent t-ratio values between the pre and post test means of ladder training group and control group are 12.47 and 0.37 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. Since, the obtained ‘t’ ratio value of ladder training group was greater than the table value, it is understood that ladder training group had significantly improved the speed. However, the control group has not improved significantly. The ‘obtained t’ value is less than the table value, as they were not subjected to any specific training.

TABLE-IV: ANALYSIS OF COVARIANCE ON SPEED OF LADDER TRAINING GROUP AND CONTROL GROUP

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F-ratio
Ladder Training Group	Control Group	Between	0.12	1	0.12	12.48*
4.90	4.96	Within	0.17	17	0.01	

* Significant at 0.05 level.

Table-IV shows that the adjusted post test means values on speed. The obtained f- ratio of 12.48 for adjusted post test mean is greater than the table value 4.45 with df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean difference exist between the adjusted post test means of ladder training and control groups on speed. The bar diagram shows the mean values of pre test, post test and adjusted post test on speed of ladder training group and control group.

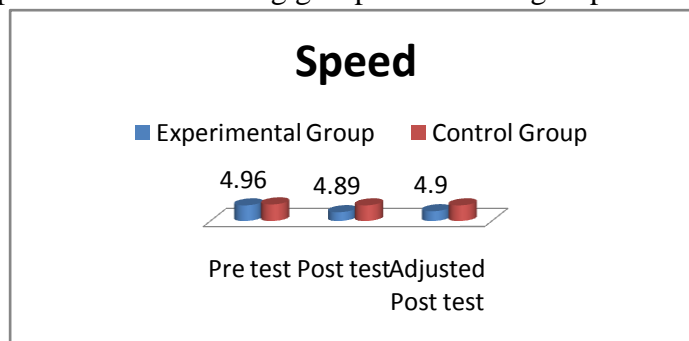


FIGURE-II: PRE TEST, POST TEST AND ADJUSTED POST TEST MEAN VALUES OF LADDER TRAINING AND CONTROL GROUPS ON SPEED.**DISCUSSION ON FINDINGS**

The result of the study indicates that there was a significant improvement on motor fitness components due to the effect of ladder training among university male students when compared to control group.

CONCLUSIONS

1. There was significant improvement on agility and speed due to the influence of ladder training among university male students.
2. However the control group had not shown any significant improvement on any of the selected variables.

REFERENCES

Robinson, B. M., & Owens, B. (2004). Five-Week Program to Increase Agility, Speed, and Power in the Preparation Phase of a Yearly Training Plan. *Strength & Conditioning Journal* (Allen Press), 26(5), 30-35.

Bloomfield, J., Polman, R., O'Donoghue, P., & McNaughton, L. (2007). Effective speed and agility conditioning methodology for random intermittent dynamic type sports. *Journal Of Strength & Conditioning Research*, 21(4), 1093- 1100.

MacKay, M. (2009). Developing agility. *Coaches Plan/Plan Du Coach*, 16(3), 12-13.

Dick., F. W. (1980). *Sporting Training Principles*. Great Britain: University Press Cambridge.



AMAZING BENEFITS OF YOGA FOR THE VISUALLY CHALLENGED- A CASE STUDY

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ABSTRACT

This article has discussed on the achievement of S.Selva kumar, a totally blind student studying 11th standard. Many people still believe yoga is difficult for the visually impaired. This person has completely changed the perception. This article describes the benefits reaped by visually impaired in practicing yoga. Selva kumar proves that Blindness is not a stumbling block rather a stepping stone for success. It has become universally accepted. Yoga transforms your life and broadens your horizons in ways you can never imagine. The visual impairment does not stop a person from practicing yoga and reaping its benefits. Yoga is not just about bending or twisting the body and holding the breath. It is a mechanism to bring you into a state where you see and experience reality just the way it is. If you allow your energies to become exuberant and ecstatic, your sensory body expands.

KEYWORDS: *Exuberant, Blindness, Mechanism*

INTRODUCTION:

Total blindness means inability to differentiate between light and dark. It limits person's ability in performing his or her everyday tasks. It affects their daily living, mobility and orientation of self and the environment they live in. this visual deficiency affects the physical cognitive and psychomotor development. These children are less physically fit and active and have impaired balance as a result of poor or low visual input. These students are not able to participate in sports, yoga and other physical exercises as these activities require visual input.

Yoga for the visually challenged:

Yoga is an ancient physical and spiritual discipline and branch of philosophy that originated in India. Yoga has now been extensively used for therapeutic use for cure of stress, body pain and for improved health benefits. Yoga is not just about bending or twisting the body and holding the breath. It is a mechanism to bring you into a state where you see and experience reality just the way it is. If you allow your energies to become exuberant and ecstatic, your sensory body expands. This enables you to experience the whole universe as a part of yourself, making everything one – this is the union that yoga creates.

Not being able to see does not stop a person from doing yoga. Visually impaired students seem to more easily turn their attention inward and focus on how the poses feel in their own bodies. Yoga is about empowerment and getting in touch with their body intelligence. Vision loss does not stop from developing body intelligence. A good guidance would help.

A good teacher, whether people have sight or don't have sight, have to be able to put themselves in their shoes to help them.

BACKGROUND:

S. Selva kumar, studying 11th standard in a inclusive school in Coimbatore was born totally blind. He was taken to many doctors to restore vision but to no avail. One of his teachers advised him to practice yoga for improvement in vision. He started practicing yoga under Mr. Selvandan. Selva kumar's had problems with space perception, difficulty in directions, and fear of falling down. The master adapted his method of teaching yoga based on these needs. He **used tactile, auditory and verbal cues for instructing on various yoga poses and postures.**

Selva kumar slowly developed interest for yoga and started practicing regularly in the mornings. He was developing flexibility and concentration. However his vision had no improvement. As the efforts were not reaping benefits his parents were no longer interested in continuing yoga classes

Selva kumar did not stop practicing yoga at home. He practices yoga every morning from 5a.m. He reaped great benefits. **He participated in state level yoga championship and won thrice. He has secured first place in all three competitions.**

Amazing benefits of yoga**Improves concentration memory and attentions:**

Major benefit of yoga is improvement in concentration attention and memory. Yoga has helped him to concentrate better in academics and his attention span has also increased. Due to good concentration and attention, He is able to remember better.

Increases flexibility, balance and body posture:

Yoga has improved his flexibility and his body posture. He had no stereotypical behaviors of blind such as head rocking, bad head positioning. He sits erect with head properly positioned. He has no self stimulatory activities such as rubbing the eye commonly seen among blind children.

Develops positive self esteem:

Children with vision loss have poor self esteem as they are not appreciated enough. Yoga has given Selva kumar a great opportunity to develop positive self esteem. His achievement has given him a good positive boost to self esteem.

Tones and strengthens muscles:

Yoga has kept him in great shape. He appears smart with toned muscles. Regular practice has kept him well toned.

Reduces depression, anxiety and stress:

He is a positive well adjusted person. He believes that regular practice of yoga has reduced anxiety levels, stress and keeps him constantly motivated. He feels that by practicing yoga everybody can reduce their stress levels.

Increases energy and endurance:

Selva kumar proclaims that yoga keeps him energetic. It has improved his endurance. He is able to balance travel, studies and yoga with the endurance built by regular practice.

Increases immunity and metabolism:

Yoga keeps the performer busy and active, constant progression of poses helps in boosting metabolism and helps to burn calories and boosts the basal metabolic rate of the individual. Breathing exercises improves lung capacity and increases immunity.

Higher Levels of Pain Tolerance

Yoga not only works towards reducing chronic pain, but it also increases the level of pain tolerance.

Enhanced Circulation

This means better transportation of oxygen and nutrients throughout the body. Improved blood flow also indicates healthier organs and glowing skin.

CONCLUSION:

Yoga has been receiving great revival in the present age. It has become universally accepted. Yoga transforms your life and broadens your horizons in ways you can never imagine. The visual impairment does not stop a person from practicing yoga and reaping its benefits. S.Selva kumar is a great role model for others to learn and follow. His interest and his passion with regular practice has made him a healthy, well adjusted individual.



PHYSICAL FITNESS, YOGA, AYURVEDA , NUTRITION FOR HEALTH AND WELL BEING

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ABSTRACT

A physically or internally unfit person has to face lot of challenges in the whole life even she/he has to be depending on someone else for performing daily basic needs. This situation is quite embarrassing for one who faces it. So, it is good at all to maintain a good health forever to be happy forever without anyone's help. It is true that to maintain a good health we need money and to earn money we need good health. But it is also true that without money we can live life and without a good health we cannot live life happily. Because our good health helps us all the time and encourages us to do something better in our life, instead of earning money only. Yoga, good nutrition, physical fitness , ayurveda helps us to live a good life. Examining yoga's effects on a different kind of chronic pain, UCLA researchers studied young women suffering from rheumatoid arthritis, an often debilitating autoimmune disorder in which the immune system attacks the lining of the joints. Some are maintaining a healthy weight, reducing risk of developing heart disease, increasing energy levels, assisting a healthy immune system, and it helps you to be more social. Having a healthy lifestyle is crucial for giving your body everything that it needs.

KEYWORDS: *Debilitating, Immune, Encourages, Maintaining*

INTRODUCTION

Physical fitness and performance have been for some years of interest, also from the nutritional aspect, to sports medical officers and occupational and sports physiologists. In recent years, however, the interaction between physical activity, muscular work, resulting physical fitness and nutrition is the focus of nutritionists-physiologists as well as clinicians.

While most of us know that good nutrition is essential in helping us feel our best and reach our optimal health; finding time to eat a balanced diet on a daily basis seems a formidable task in this fast-paced, affluent society. Yet, though your life may be hectic, there are still many good tasting, healthy choices which can help you lose weight and improve your health.

HEALTH

Health is "a state of complete physical, mental, and social well-being and not merely the absence of disease" according to the World Health Organization (WHO). *Physical* is about the body. *Mental* is about how people think and feel. *Social* talks about how people live with other people. It is about family, work, school, and friends. For good health we need yoga ayurveda good nutrition and physical fitness

FITNESS

It is defined as the quality or state of being fit. Around 1950, perhaps consistent with the Industrial Revolution and the treatise of World War II, the term "fitness" increased in western vernacular by a factor of ten Modern definition of fitness describe either a person or machine's ability to perform a specific function or a holistic definition of human adaptability to cope with various situations.

AYURVEDA

It is a system of medicine with historical roots in the Indian subcontinent Globalized and modernized practices derived from Ayurveda traditions are a type of complementary or alternative medicine. In countries beyond India, Ayurveda therapies and practices have been integrated in general wellness applications and in some cases in medical use. The main classical Ayurveda texts begin with accounts of the transmission of medical knowledge from the Gods to sages, and then to human physicians.

YOGA

Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The word 'Yoga' is derived from the Sanskrit root 'Yuj', meaning 'to join' or 'to yoke' or 'to unite'.

HOW YOGA HELPS FOR GOOD HEALTH

1. Pain Reliever

Yoga shows promise as a treatment for relieving certain kinds of chronic pain. When German researchers compared Iyengar Yoga with a self-care exercise program among people with chronic neck pain, they found that yoga reduced pain scores by more than half. Examining yoga's effects on a different kind of chronic pain, UCLA researchers studied young women suffering from rheumatoid arthritis, an often debilitating autoimmune disorder in which the immune

system attacks the lining of the joints. About half of those who took part in a six-week Iyengar Yoga program reported improvements in measures of pain, as well as in anxiety and depression.

2. Yes, You Can!

Kim Innes, a Kundalini Yoga practitioner and a clinical associate professor at the University of Virginia, yoga may benefit people who have a variety of health risk factors, including being overweight, sedentary, and at risk for type 2 diabetes.

3. Ray of Light

Much attention has been given to yoga's potential effect on the persistent dark fog of depression. Lisa Uebelacker, a psychologist at Brown University, got interested in examining yoga as a therapy for depression after studying and practicing mindfulness meditation.

4. Happy Day

It's taken the development of modern technologies like functional MRI screening to give scientists a glimpse of how yogic practices like asana and meditation affect the brain. "We now have a much deeper understanding of what happens in the brain during meditation," says Khalsa. "Long-term practitioners see changes in brain structure that correlate with their being less reactive and less emotionally explosive. They don't suffer to the same degree." Scientists at the University of Wisconsin have shown that meditation increases the activity of the left prefrontal cortex—the area of the brain that's associated with positive moods, equanimity, and emotional resilience. In other words, meditating regularly may help you weather life's ups and downs with greater ease and feel happier in your daily life.

5. Stay Sharp

Asana, pranayama, and meditation all train you to fine-tune your attention, whether by syncing your breathing with movement, focusing on the subtleties of the breath, or letting go of distracting thoughts. Studies have shown that yogic practices such as these can help your brain work better. Recently, University of Illinois researchers found that immediately following a 20-minute hatha yoga session, study participants completed a set of mental challenges both faster and more accurately than they did after a brisk walk or a jog.

Benefits of Ayurvedic Medicine

1. Helps Lower Stress and Anxiety

Because stress is related to nearly every aspect of overall health, an Ayurvedic medicine practitioner might call for a number of different techniques used to naturally treat anxiety and depression symptoms, lower cortisol and rebalance the body's hormones or "energy." This can include meditation, yoga, breathing exercises, herbal treatments, skin brushing, visualization or repeating inspirational mantras.

2. Lowers Blood Pressure and Cholesterol

Studies have shown that Ayurveda diets and relaxation techniques can lower inflammation and help reduce plaque build up, even reversing the thickening of artery walls known as atherosclerosis in both healthy adults and those with a higher risk for heart disease. Atherosclerosis is a slow, complex disease in which cholesterol, fats and other substances build up in the inner lining of an artery. This build up, known as plaque, can lead to heart attack and

stroke. Thankfully, Ayurvedic techniques lower cholesterol naturally and naturally lower blood pressure.

3. Helps with Recovery from Injuries and Illnesses

Research supports the idea of the Ayurvedic concept of immune-modulation and healing. By targeting inflammation, which is the root of most diseases, Ayurvedic medicine can help lower pain and swelling, improve blood flow and fibromyalgia just as well as medication.

4. Promotes a Nutrient-Dense, Antioxidant-Rich Diet

Ayurvedic medicine promotes a mostly plant-based diet filled with a variety of real, whole foods. While each person's diet depends on body type and needs, Ayurvedic diets for the three different dosha types all include various fresh herbs, spices, teas, vegetables, healthy fats, high-antioxidant foods and protein.

5. Can Help with Weight Loss or Maintenance

While fast weight loss isn't necessarily the primary goal, Ayurvedic medicine can help someone shed excess weight naturally using a healthy diet, stress reduction and even essential oils for weight loss.

6. Lowers Inflammation

Ayurvedic medicine rests on the assumption that a combination of a poor diet, bad digestion, not enough rest or sleep and insufficient air (vaayu) inhaled cause oxidative stress and inflammation. This results in an imbalance in metabolism — or in other words — in the three doshas.

7. Helps with Hormonal Balance

People have turned to Ayurveda to balance hormones naturally, conceive and have a healthy, natural pregnancy or menstrual cycle for thousands of years. Studies have even shown that various therapeutic effects of Ayurveda have been effective in helping to treat subfertility due to PCOS, a common endocrine disorder in women of reproductive age, resulting from insulin resistance and hormonal imbalances.

Basic Nutrients Required for Good Health

1. Carbohydrates
2. Protein
3. Fat
4. Vitamins
5. Minerals
6. Water

CONCLUSION

If you do maintain a healthy lifestyle, there are many benefits, and not only for your body. Some are maintaining a healthy weight, reducing risk of developing heart disease, increasing energy levels, assisting a healthy immune system, and it helps you to be more social. Having a healthy lifestyle is crucial for giving your body everything that it needs.

REFERENCES

1. (Circular HC(79)8.)Department of Health and Social Security. Primary Health Care: Health Centres and Other Premises. D.H.S.S., London; 1979.
2. Stephen, W.J. Primary Medical Care: An International Study. Cambridge University Press, ; 1979.
3. (by W. J. Stephen.)Godber, George. Foreword to *Primary Medical Care: An International Study*. ; 1979.
4. Whitfield, M.J. *Journal of the Royal College of General Practitioners*. 1974;24:529–536.
5. PubMed
6. Brockington, C.F. The Health of the Community. in: Churchill, Edinburgh; 1965:133.
7. Hobbs, P., Eardley, A., Thornton, M. Health Education with patients in hospital. *Health Education Journal*. 1977;36:40.
8. Fletcher, C.M. in: A.E. Bennett (Ed.) Recent Advances in Community Medicine. Churchill Livingstone,Edinburgh; 1978:100–101.
9. in: Royal Commission on the National Health Service Report. H.M.S.O., London; 1979:46.
10. Clarke, W.D., Engel, C.E., Jolly, B.C., Meyrick, R.Ll. Health Education in the doctor's waiting room. *Health Education Journal*. 1976;35:140.



EFFECT OF DIFFERENT MODES OF SPORTS TRAINING ON MUSCULAR ENDURANCE AMONG ANNA UNIVERSITY MEN FOOTBALL PLAYERS

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ABSTRACT

The purpose of this study was to find out the effect of different modes of sports training on muscular endurance among Anna University men football players. The study was conducted on sixty men (n=60) Football players studying various Engineering Colleges Affiliated to Anna University, Chennai, Tamilnadu, India, and who have participated in the inter collegiate Football tournaments during the academic year 2016-2017 were selected as subjects. The age of the subjects were ranged from 17 to 21 years. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent Aerobic Training, Group-II underwent Anaerobic training, Group-III underwent Skill training and Group-IV acted as Control. All the three groups undergo their respective training for 12 weeks in addition to the regular training as per College curriculum. Muscular Endurance only was selected as dependent variable and it was assessed by Bent Knee Sit-up test. The data was collected from the four groups prior to and post experimentation on Muscular Endurance was statistically analyzed by using Analysis of Covariance (ANCOVA). Hence, whenever the obtained f-ratio value was significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed. The results of the study showed there was a significant differences among the selected groups, further the results showed, Skill training group was better than other groups on the development of Muscular Endurance.

KEY WORDS: Aerobic Training, Anaerobic Training, Skill Training, Muscular Endurance

INTRODUCTION

For the maintenance of good health, participation in daily physical activities is an indispensable one. The high level of physical fitness comes from years of daily experience in a selected variety of vigorous physical activities. It is a biological principle that function builds structure and structure decides function. Man needs vigorous exercises for growth and development. To perform the daily activities in an efficient manner, muscles in good condition, their strength and endurance are essential to man. It is rightly said the muscle must be overloaded in order to be strengthened (**Govindarajulu, 1991**).

Sport participation is good preparation handling everyday events. Because sport involves both victory and defeat, it provides people with opportunities to experience success and failure. And the lessons of these experiences are believed to be unique and valuable. Sport is essentially different from the rest of our lives. In everyday life one seldom faces the opponents in a direct manner. But in sport, opponents are faced directly, scores are always complete, and people have no doubts about when the games are over. Actions in sport have a moral component that is usually only related to a particular sport setting. And the consequences of those actions have no serious meaning for life apart from sport.

Sports training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition(**Singh, 1991**).

Aerobic exercise does require oxygen for energy. This is observed during exercise that is less intense but of longer duration. This energy system is primarily used during events lasting longer than several minutes, such as a two-mile run or the Tour de France bicycle race. The potential does exist that one can use both systems, as in soccer, where a match requires ninety minutes of continual activity with short intense bursts of effort.

Anaerobic exercise is exercise intense enough to trigger anaerobic metabolism. It is used by athletes in non-endurance sports to promote strength, speed and power and by body builders to build muscle mass. Muscle energy systems trained using anaerobic exercise develop differently compared to aerobic exercise, leading to greater performance in short duration, high intensity activities, which last from mere seconds up to about 2 minutes (**Medbo et al., 1988**).

METHODOLOGY

The purpose of this study was to find out the effect of different modes of sports training on muscular endurance among Anna University men football players. The study was conducted on sixty men(n=60) Football players studying various Engineering Colleges Affiliated to Anna University, Chennai, Tamilnadu, India, and who have participated in the inter collegiate Football tournaments during the academic year 2016-2017 were selected as subjects. The age of the subjects were ranged from 17 to 21 years. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent Aerobic Training, Group-II underwent Anaerobic training, Group-III underwent Skill training and Group-IV acted as Control. All the three groups undergo their respective training for 8 weeks in addition to the regular training as per College curriculum. The dependent variable selected was Muscular Endurance and it was assessed by Bent Knee Sit-up test. The data collected from the experimental groups and control group on prior and after experimentation on selected variables were statistically

examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. Whenever they obtained f-ratio value in the simple effect was significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed.

RESULTS AND DISCUSSION

The Analysis of covariance (ANCOVA) on Muscular Endurance of Aerobic Training, Anaerobic training, Skill training packages and Control group have been analyzed and presented in Table -I.

Table –I
ANALYSIS OF COVARIANCE ON MUSCULAR ENDURANCE OF AEROBIC TRAINING, ANAEROBIC TRAINING, SKILL TRAINING PACKAGES AND CONTROL GROUP

Adjusted Post-test Means				Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
Aerobic Training Group (I)	Anaerobic Training Group (II)	Skill Training Group (III)	Control Group (IV)					
33.22	37.19	39.02	30.02	Between Within	1055.20 274.00	3 55	351.73 4.98	70.63*

* Significant at .05 level of confidence

(Muscular Endurance Scores in Numbers)

(The table value required for Significance at .05 level with df 3 and 55 is 2.77)

Table-I shows that the adjusted post test mean value of Muscular Endurance for Aerobic Training group, Anaerobic training group, Skill training group and Control group are 33.22, 37.19, 39.02 and 30.02 respectively. The obtained F-ratio of 70.63 for adjusted post test mean is more than the table value of 2.77 for df 3 and 55 required for significant at 0.05 level of confidence.

The results of the study indicate that there are significant differences among the adjusted post test means of Aerobic Training group, Anaerobic training group, Skill training group and Control group on the development of Muscular Endurance.

To determine which of the paired means had a significant difference, the Scheffe's test was applied as Post hoc test and the results are presented in Table-II.

TABLE – II
THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST
TEST PAIRED MEANS ON MUSCULAR ENDURANCE

Adjusted Post-test Means				Mean Difference	Confidence Interval
Aerobic Training Group (I)	Anaerobic Training Group (II)	Skill Training Group (III)	Control Group (IV)		
33.22	37.19			6.03*	1.02
33.22		39.02		5.80*	1.02
33.22			30.02	3.20*	1.02
	37.19	39.02		1.83*	1.02
	37.19		30.02	7.17*	1.02
		39.02	30.02	9.00*	1.02

* Significant at 0.05 level of confidence

Table-II shows that the adjusted post test mean difference on Aerobic Training group and Anaerobic Training group, Aerobic Training group and Skill Training group, Aerobic Training group and Control group, Anaerobic Training group and Skill training group, Anaerobic Training group and Control group, Skill training group and Control group, are 6.03, 5.80, 3.20, 1.83, 7.17 and 9.00 respectively. The values are greater than the confidence interval 1.02, which shows significant differences at 0.05 level of confidence.

It may be concluded from the results of the study that there is a significant difference in Muscular Endurance between the adjusted post test means of Aerobic Training group and Anaerobic Training group, Aerobic Training group and Skill Training group, Aerobic Training group and Control group, Anaerobic Training group and Skill training group, Anaerobic Training group and Control group, Skill training group and Control group. However, the improvements of Muscular Endurance were significantly higher for Skill Training group than Aerobic Training group, Anaerobic Training group and Control group.

It may be concluded that Skill Training group is better than Aerobic Training group, Anaerobic Training group and Control group in improving Muscular Endurance.

The adjusted post test mean values of Aerobic Training group, Anaerobic training group, Skill training group and Control group on Muscular Endurance are graphically represented in the Figure -I.

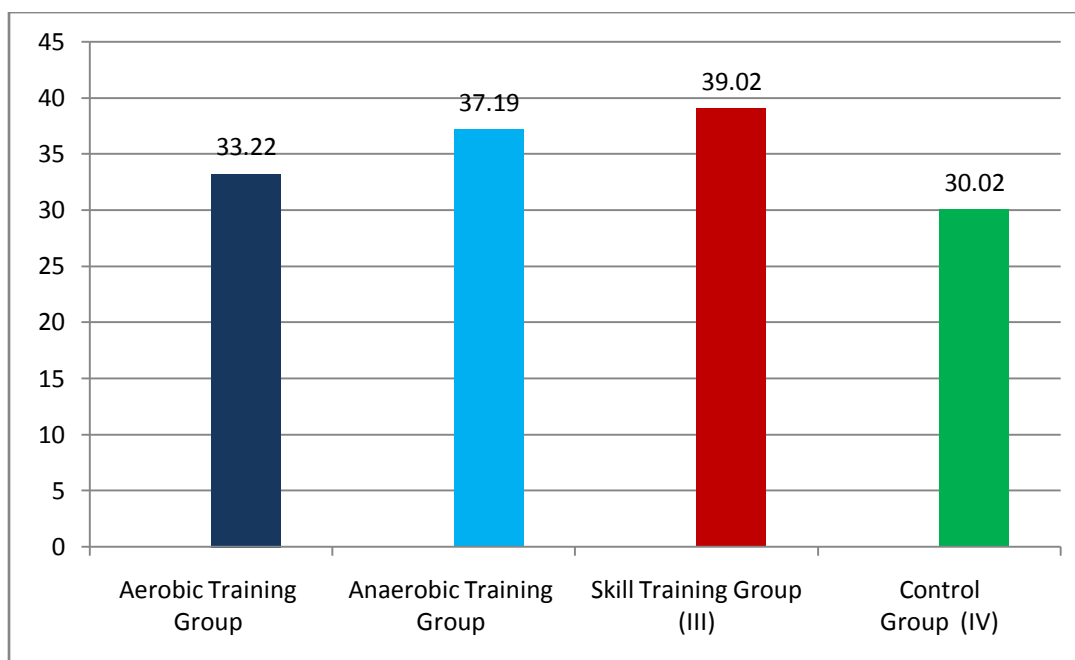


Figure: I The adjusted post test mean values of Aerobic Training group, Anaerobic training group, Skill training group and Control group on Muscular Endurance

CONCLUSION

1. The Experimental groups namely, Aerobic Training group, Anaerobic Training group and Skill training group had significantly improved in Muscular Endurance.
2. Significant differences in achievement were found among Aerobic Training group, Anaerobic Training group and Skill training group on selected criterion variables such as Muscular Endurance.
3. Skill training group was found better than Aerobic training group and Anaerobic training group on the development of Muscular Endurance.

REFERENCES

- Govindarajulu, N.(1991), "The Importance of Health-related Physical Fitness Through Physical Activities", **Paper Presented at the 3rd All India Physical Education Congress**, Madras, 8-11 October.
- Medbo, JI, Mohn, Tabata, Bahr, Vaage, Sejersted (1988), "Anaerobic capacity determined by maximal accumulated O₂ deficit". **Journal of Applied Physiology**, January, 64 (1): 50–60.
- Singh, Hardayal(1991), **Science of Sports Training**, New Delhi, D.V.S. Publications.
- Bloomfield.J,(1994), **Applied Anatomy and Biomechanics in Sport**, Melbourne, Blackwell Scientific Publications.
- Rex Hazeldine (1985), **Fitness for Sports** Marlborough Wilshire: the Crowood Press.
- Bloomfield.J,(1994), **Applied Anatomy and Biomechanics in Sport**, Melbourne, Blackwell Scientific Publications.
- Rex Hazeldine (1985), **Fitness for Sports** Marlborough Wilshire: the Crowood Press.



AEROBIC EXERCISE FOR WIGHT CONTROL IN OBESE WOMEN

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ABSTRACT

The purpose of the study was to evaluate the aerobic exercise for weight control in obese women. Obesity is known to be closely associated with some major health risk factors, such as coronary heart disease and certain metabolic disorders. The study was conducted on thirty obese women were selected as subjects from Idappadi taluk, Salem District. Subjects were randomly assigned equally in to two groups, Group I underwent Aerobic exercise practices Group (n=15) and Group II (n=15) acted as control Group. The training period was limited to 12 weeks all the two groups were tested on selected criterion variables such as body mass index, percent body fat, abdominal obesity. Body mass index, percent body fat, abdominal obesity between the pre and post test means of Aerobic exercise group were greater than the control group. It was concluded that Aerobic exercise group had significant improvement in the performance of body mass index, percent body fat, abdominal obesity. However control group had no significant improvement in the performance of selected variables.

KEYWORDS: Aerobic Exercise, Obese Women, Body Mass Index, Percent Body Fat, Abdominal Obesity.

INTRODUCTION

A sedentary lifestyle poses a threat to individuals' health because it can lead to an increase or progression in the risk of hypertension, obesity, muscle weakness, postural defects, diabetes and coronary heart disease in middle-aged people WHO Obesity (2004). The prevalence of obesity is continuing to rise in developing countries Mokdad AH, Ford ES, Bowman BA(2001). Obesity is known to be closely associated with some major health risk factors, such as coronary heart disease and certain metabolic disorders Kenchaiah S, (2001).

Obesity is defined as the percentage of body fat that begins to increase the chances of cardiovascular disease. Ideal body fat levels for men are 12% to 17% and 18% to 22% for women. Obesity is defined as having a body mass index 30 or higher. In general obesity occurs when you consume more calories than you use. Although some obesity risk factors (such as genetics and age-related hormonal changes) cannot be controlled, it's possible to modify the following risk factors as you strive for obesity prevention.

- Unhealthy diet
- Lack of physical activity
- Insufficient sleep
- Poorly managed stress

Aerobic which means 'with oxygen' are done in moderate intensity for longer durations. Aerobic exercises could be any exercise that helps increase heart pumping rate for a longer period, leading to an increase in your intake of oxygen. This in turn will lead to burning of fat and weight and inch loss. Obesity and plumpness has become an inevitable part of our fast-studded lives. With the increasing intake of junk food the bell's has been increasing corresponding to depleting energies.

METHODOLOGY

The study was conducted on thirty obese women were selected as subjects from Idappadi taluk, Salem District. Subjects were randomly assigned equally in to two groups, Group I underwent Aerobic exercise practices Group (n=15) and Group II (n=15) acted as control Group. The training period was limited to 12 weeks all the two groups were tested on selected criterion variables such as body mass index, percent body fat, abdominal obesity. Body mass index was determined by dividing the subjects weight (in kg) by the square of the height, the percent body weight was calculated from body density using Siri equation, the abdominal obesity was determined by dividing the subjects waist circumference(inches) by the hip circumference.

Training Program

Among aerobic options for obese people, the standard exercise-running-might not be a valid option for numerous reasons. Fortunately, there are a variety of other aerobic options available that can yield positive results. As long as exercises are intense enough to raise the heart rate an appropriate amount of time and are done three to four times per week.

Table –I
The summary of Mean for the pre and post test data on selected variables of Aerobic exercise group.

Variables	Pre test Mean±S.D	Post test Mean±S.D	Mean Diff.	SEM	t-ratio
Body Mass Index (kg/m ²)	30.13±1.31	27.61±0.59	2.52	0.30	8.37*
Percent Body Fat (%)	27.67±0.59	25.87±0.76	1.79	0.14	12.68*
Abdominal Obesity (%)	0.82±0.01	0.76±0.03	0.05	0.01	7.77*

Table –II
The summary of Mean for the pre and post test data on selected variables of control group.

Variables	Pre test Mean±S.D	Post test Mean±S.D	Mean Diff.	SEM	t-ratio
Body Mass Index(kg/m ²)	30.5±0.41	30.70±0.57	0.20	0.10	2.05
Percent Body Fat (%)	27.73±0.85	27.74±0.95	0.01	0.05	0.17
Abdominal Obesity (%)	0.81±0.01	0.82±0.03	0.01	0.01	2.00

Table –III
Analysis of covariance on variables of experimental and control groups

Variables	Source of variance	Sum of squares	df	Mean squares	F-ratio
Body Mass Index(kg/m ²)	Between sets	51.27	1	51.273	140.506
	Within sets	8.03	22	.365	
Percent Body Fat (%)	Between sets	19.63	1	19.635	123.806
	Within sets	3.49	22	.159	
Abdominal Obesity (%)	Between sets	.01	1	.014	41.655
	Within sets	.01	22	.000	

* Significant at 0.05 level of confident

Table data collected from the experimental group and control group prior and after experimentation on selected variables were statically examined by analysis of covariance (ANCOVA) was used to determine difference, if any among adjusted post test means on selected criterion variables separately. The level of significance was fixed at 0.05 level of confidence to test the “f” ratio obtained by analysis of covariance on selected criterion variables.

Table- I and II shows that mean, of body mass index, percent body fat, abdominal obesity between the pre and post test means of Aerobic exercise group were greater than the control group. It was concluded that Aerobic exercise group had significant improvement in the performance of body mass index, percent body fat, abdominal obesity. However control group had no significant improvement in the performance of selected variables.

The analysis of covariance of body mass index, percent body fat, abdominal obesity of Aerobic exercise group and control group have been analyzed and presented in Table III.

From table –III ,the obtained value of ‘f’ ratio for body mass index, percent body fat, abdominal obesity for adjusted post test means were more than the table value of (4.3009) for df 1 and 22 required for significant at 0.05 level of confidence. The results of the study indicated that significant differences exist among the adjusted post test means of experimental and control group on the development of body mass index, percent body fat, and abdominal obesity.

CONCLUSION

The Aerobic exercise group improved significantly on body mass index, percent body fat, abdominal obesity, when compared to the control group. However control group had no significant improvement in the performance of selected variables. It was concluded that Aerobic exercise group had significant improvement in the performance of body mass index, percent body fat, abdominal obesity. However control group had no significant improvement in the performance of selected variables.

REFERENCES

1. Andersen RE, Wadden TA, Bartlett SJ, Zemel B, Verde TJ and Franckowiak SC, “Effects of Lifestyle Activity vs Structured Aerobic Exercise in Obese Women: A Randomized Trial”, JAMA, Vol. 281 No.4, Jan 27, 1999, pp. 375-376.
2. Ashutosh K, Methrotra K, Fragale-Jackson J., “Effects of Sustained Weight Loss and Exercise on Aerobic Fitness in Obese Women”, Department of Medicine, Syracuse University, New York, USA.
3. Ayşe Sarsan, Füsün Ardiç, Merih Özgen, Oya Topuz and Yurdaer Sermez, “The Effects of Aerobic and Resistance Exercises in Obese Women”, *J. Clin. Rehabil*, September 2006, vol. 20 no. 9 773-782
4. Gillum,RF, Mussolino ME, Madans JH. Body fat distribution and hypertension incidence in women and men: The NHANES Epidemiologic Follow-up Study. *Int J ObesRelatMetabDisord*, 1998; 22: 127–134.
5. Mokdad AH, Ford ES, Bowman BA, et al. Prevalence of Obesity, Diabetes, and Obesity-Related Health Risk Factors, 2001. *J Am Med Assoc* 2003; 289: 76–79.
6. Rexrode KM, Carey VJ, Hennekens CH, et al. Abdominal adiposity and coronary heart disease in women. *J Am Med Assoc* 1998; 280: 1843–1848.



MULTI MILLETS BASED TRADITIONAL FOOD MIXES

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ABSTRACT

People of India consuming most of their foods in traditionally processed forms. However their preparation is time consuming and laborious with result that convenience foods based on traditional processing has entered the market with huge success. Small millets has high nutrient content which includes protein, essential fatty acids, dietary fibre, vitamins, minerals. It helps in rendering health benefits like reduction in blood sugar level, blood pressure regulation, cardiovascular and celiac diseases. Processing of small millets based instant food mixes would be successful strategy to promote millet utilization. Hence, the present investigation was undertaken to standardized nutritious instant breakfast mixes from small millets with other ingredients. Multi millet grain mix was formulated using grains of kodo millet, little millet, foxtail millet and barnyard millet. These formulated mixes was substituted with different proportions in traditional instant food mixes viz., Idli, Dosa, Pittu, Adai, paniyaram, chappathi and Venpongal. Which were organoleptically evaluated with 50 volunteers using 9 point hedonic scale. The result revealed that the standardized products obtained overall acceptability scores of Idli (8.5 ± 0.14), Dosa (8.6 ± 0.14), Pittu (8.4 ± 0.46) and Adai (8.7 ± 0.23), Paniyaram (8.6 ± 0.21), chappathi (8.8 ± 0.25) and Venpongal (8.8 ± 0.20) and the entire products were maximum acceptability. With respect to nutrient content the standardized products contains high amount of protein, dietary fibre and iron content. This contributes food and nutritional security by meeting energy and protein needs of consumer. The instant mixes from multi millets can help in increasing food availability, adding variety to it and make the diet rich in micronutrients and satisfy the demand of small millets processed foods.

KEYWORDS: *Multi Millets, Instant Mix, Sensory Score*

INTRODUCTION

Small millets has high nutrient content which includes protein, essential fatty acids, dietary fibre, vitamins, minerals. It helps in rendering health benefits like reduction in blood sugar level, blood pressure regulation, cardiovascular and celiac diseases. Although small millets were superior to other cereals with many nutritional benefits, their utilisation was limited, reason being low palatability, coarseness of grain, lack of time to process the grains. As millets were coarse grains having higher amounts of polyphenols the colour and flavour became unacceptable to new consumer. Further, the non availability of processed millet in ready to use form was another hurdle in its utilization. So, Processing of small millets based instant food mixes would be successful strategy to promote millet utilization. Work on the development of ready premixes from traditional food is on the increase in recent years. Besides the ease in preparation and consumer acceptability, the functional and attractive packaging, which provides adequate shelf life is of importance in popularizing the product. Instant mixes comprised of a mixture of processed cereals, pulses, condiments, spices or other foods in varying combinations. These are used for the preparation of various dishes, conveniently in a very short span of time. The market for instant food is steadily growing, especially among urban consumers with a host of competing brands and flavours. With this background, the present investigation was undertaken to standardized nutritious instant breakfast mixes from small millets with other ingredients.

METHODS

Small millets (kodo millet, little millet, foxtail millet and barnyard millet) were procured from Dept. of millets, Tamil Nadu Agricultural University, Coimbatore, Tamilnadu. Other minor ingredients required for mix preparation were procured from local market

Preparation of millet rice

Millets (kodo millet, little millet, foxtail millet and barnyard millet) were soaked at 80°C for 8hours, open steamed for 20°C and shade dried for moisture content of 14 per cent. The hydrothermal treatment of millets was dehulled in double chamber centrifugal dehuller. Which gave increased dehulling efficiency of 5.5% and 7% head rice recovery were recorded. Multi millet grain mix was formulated using this rice at an equal proportion of each millets. These formulated multi millets rice mix was substituted with different proportions in traditional instant food mixes.

Preparation of traditional instant mixes:

Traditional foods are a rich heritage of India and offer wide diversity because of their origin in different regions and involvement of multidimensional culture. Development of traditional millets based foods, and utilization of millets in traditional recipes would increase diversify end products. For idli and dosa, rice was replaced with multi millet rice (100g), black gram dhal (20 g), fenugreek (4 g) and salt (2g) were used. All the ingredients were ground separately and mixed thoroughly and packed in the HDPE (High Density Poly Ethylene) covers. When the preparation of idli and dosa the mix diluted with water; allowed it for fermentation of 10-12 hours. Fermented batter was steamed as idli and poured on tawa and shallow fried as dosa.

Adai was prepared using green gram (10 g), black gram (10 g), Bengal gram (10 g), horse gram (10 g), red gram (10 g) and millet rice (100 g) were separately soaked in water for 2 hours and

drained and dried. Then all the ingredients were ground in to a coarse flour, and Add red chilli powder (4%), asafoetida (1 %) and salt (2%) and packed in the HDPE bags.

Pittu is another steamed breakfast item, wherein multi millet rice flour (100g), salt (2 g) were mixed together and packed. When it needs the water sprinkled on mix, steamed cooked in the pittu steamer/ idli cooker for 6-8 min and coconut scrabbling and sugar were added before serving.

For chappthi mix preparation, the multi millets flour (100g) and salt (2g) mixed thoroughly and packed in the HDPE bags. During preparation the dough was prepared using the mix, flatten and toast in the preheated tawa. Similarly the paniyaram mix also prepared and packed in the HDPE bags.

Multi millet venpongal mix prepared using multi millets rice (75 g), green gram dhal (25g), Pepper (3g), Cumin (3g), salt (2g) and cashew & raisin (5g) and ghee (20ml). All the ingredients were roasted in ghee and packed. At the time of preparation the multi millet venpongal mix was cooked with water (1:3w/v) and seasoned with paper, cumin, cashew, raisin and curry leaves.

Sensory evaluation of tradional instant mixes

The sensory evaluation of prepared mixes was made by panel of 50 semi trained judges using 9 point hedonic scale as described by Subbulakshmi and Amutha (2013)

Nutrient composition of traditional instant mixes

Multi millet mixes was estimated for moisture (Ranganna, 1995). Carbohydrates (Sadasivam and Manickam, 2008), crude protein (Micro kjeldahal, $N \times 6.25$), crude fat (solvent extraction), calcium (titration), iron (colorimetric) were determined by the AOAC (2000). Crude fibre (acid and alkali) was determined by the method of Sadasivam and Manickam (2008) and for Energy was determined by Nutritive value of Indian food (ICMR, 2010).

RESULT

Sensory evaluation of traditional instant mixes

The result of sensory evaluation of multi millets based products are given in Table 1. The result revealed that the standardized products obtained overall acceptability scores of *Idli* (8.5 ± 0.14), *Dosa* (8.6 ± 0.14), *Pittu* (8.4 ± 0.46) and *Adai* (8.7 ± 0.23), *Paniyaram* (8.6 ± 0.21), *chappathi* (8.8 ± 0.25) and *Venpongal* (8.8 ± 0.20) and the entire products were maximum acceptability. Idli, dosa, pittu, adai are traditional products easily can prepare at household level and suitable for children and old age people as breakfast item. Similarly the study conducted by Itagi *et al* (2003) observed no apparent changes in the sensory qualities of traditional products developed from composite mix based on foxtail millet (80%) wheat (10%) and black gram dhal (10%). Selvi and Malathi (2014a) developed nutrient rich instant adai mix by using kodo millet and barnyard millet with other ingredients and the result showed that the sensory attributes of instant adai mixes were highly acceptable. It can be stored in Metallised Polypropylene with antioxidant for the period of 180 days.

Table 1. Sensory score of traditional instant mixes

	Name of the Product	Colour and Appearance	Flavour	Texture	Taste	Overall Acceptability
1	Idli	8.4±0.32	8.4±0.21	8.5±0.20	8.4±0.14	8.5±0.14
2	Dosa	8.5±0.07	8.7±0.12	8.4±0.14	8.5±0.16	8.6±0.14
3	Paniyaram	8.6±0.22	8.6±0.08	8.6±0.10	8.5±0.11	8.6±0.21
4	Pittu	8.2±0.12	8.3±0.10	8.4±0.21	8.4±0.12	8.4±0.46
5	Adai	8.8±0.33	8.8±0.34	8.6±0.13	8.6±0.14	8.7±0.23
6	Chappathi	8.8±0.41	8.7±0.18	8.7±0.18	8.6±0.16	8.8±0.25
7	Venpongal	8.8±0.21	8.8±0.15	8.8±0.14	8.8±0.18	8.8±0.20

Values are mean± SD

Nutrient composition of traditional instant mixes

The nutrient content of developed mix are presented in the Table 2. All products contains high amount of protein, dietary fibre and iron content. among the products high amount of protein reorted in venpongal mix followed by adai, idli and dosa. Chappathi gives the high amount of fibre whereas adai rich in calcium content compared to other developed products. The iron content ranged between 3.45 mg (Pittu) and 4.76 mg (Venpongal). Similar result supported by Selvi and Malathi (2014b) substitution of kodo millet and barnyard millet flour idli mixes showed remarkable increases in the nutrients viz.,protein 9.62 and 11.37 g, crude fibre 4.20 and 6.90 g, calcium 57.18 and 52.20 mg and iron 4.17 and 6.34 mg respectively than the control.

Table 2. Nutrient composition of traditional mixes (per 100g)

S.No	Items	Energy (K.cal)	Protein (g)	Fat (g)	Carbohydrate (g)	Fibre (g)	Calcium (mg)	Iron (mg)
1	Idli	273.32	12.86	2.88	63.07	3.64	55.51	4.28
2	Dosa	283.41	12.64	2.52	64.10	3.94	98.84	4.26
3	Paniyaram	239.67	11.25	4.64	54.27	3.12	97.51	3.95
4	Pittu	322.49	6.00	1.08	61.36	3.28	68.28	3.45
5	Adai	301.99	13.68	2.37	62.64	4.97	128.32	4.22
6	Chappathi	255.33	8.57	2.75	61.42	6.72	110.00	4.30
7	Venpongal	309.94	14.86	7.32	55.81	4.65	100.08	4.76

REFERENCE

AACC. 2000. Approved methods of the American Association of Cereal Chemists. Method: 38-11 9th ed, St. Paul. MN: American Association of Cereal Chemists. Minnesota. USA.

ICMR, 2010. Nutritive value of Indian foods National Institute of Nutrition. Indian Council of Medical Research. Hydrabad. India.

Itagi, S., Naik, R. and Shanthkumar, G. 2003. Development and therapeutic benefits of millet based diabetic composite mix. In: Poster abstracts of 5th IFCON. 5-8 December, CFTRI, Mysore. India. p. 277.

Ranganna, S. 1995. Manual of analysis of fruits and vegetable products. Tata Mc Graw Hill Publishing Co., Ltd., New Delhi: 71.

Sadasivam, S. and Manickam, A. 2008. Biochemical Methods. 3rd Edn. New Age International Publishers. New Delhi: 11-37.

Selvi, S. and Malathi, D. 2014a. Standardization of Small Millet Based Instant Adai Mix. Trends in Biosciences 8(20): 3123-3127.

Selvi, S. and Malathi, D. 2014b. Development and Evaluation of Instant Idli Mix from Small Millets. Trends in Biosciences 7(19): 2972-2976.

Subbulakshmi, B. and Amutha, S. 2013. Quality protein maize for nutritional security. Asian Journal of Home Science. 8 (2): 566-569.



BRIDGING INNOVATIONS IN SPORTS, EDUCATION AND NUTRITION EFFECT OF SIMPLIFIED KUNDALINI YOGA ON SELECTED PHYSIOLOGICAL AND PSYCHOLOGICAL VARIABLES AMONG WOMEN ENGINEERING STUDENTS

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ABSTRACT

The philosophy of yoga is “caring, sharing and empowering”. Yoga is derived from the Sanskrit root “YUJ” which means join, unite, and merge. Good health enables people to enjoy present life and has the opportunity to achieve the goals they have set for themselves. Women are equally capable doing of all the duties of men. Women should be given special comforts appropriate to the nobility of their sex. Apart from the physical nature of life, yoga provides beneficial effect to mental health also. Different breathing exercises or techniques are there to calm the mind and brain, offering inner peace and ability to face and deal with any problem. Today, more than before in the history of humanity, people are facing lot of stress. There is an unprecedented rise in psychosomatic and mental illness. This evolution results in loss of individual identity, happiness, freedom and peace. It is the union between a person’s own consciousness and the universal consciousness. Yoga is a method of learning that aims to attain the unity of mind, body and spirit through these three main yoga structures: exercise, breathing and meditation.

KEY WORDS: *Kayakalpa, Meditation, Vital Capacity ,Stress*

INTRODUCTION

Health is the state of physical, mental and social well-being of a person. It involves the absence of diseases. A healthy person not only feels physically good but also has a realistic outlook of life and gets along with people. Good health enables people to enjoy present life and has the opportunity to achieve the goals they have set for themselves. A person who is fit has the strength and maintain perfect balance with the environment and society. A person with energy can withstand the stresses of daily life.

Today, more than before in the history of humanity, people are facing lot of stress. There is an unprecedented rise in psychosomatic and mental illness. This evolution results in loss of individual identity, happiness, freedom and peace.

Yoga is needed as a powerful remedy not only for the day to day problems but also to overcome all health problems.

The philosophy of yoga is “caring, sharing and empowering”. Yoga is derived from the Sanskrit root “YUJ” which means join, unite, and merge. The practice of yoga integrates the body with mind and mind with the soul. Yoga is a complete life science and is the oldest system of personal development in the world encompassing the entire body, mind and spirit.

It is the union between a person’s own consciousness and the universal consciousness. Yoga is a method of learning that aims to attain the unity of mind, body and spirit through these three main yoga structures: exercise, breathing and meditation. The breathing techniques are based on the concept that breath is the source of life in body. (Yogiraj Vethathiri Maharishi).

Yoga is a complete life science and is the oldest system of personal development in every human. Yoga believes that exercise is essential for speedy removal of toxins and for keeping proper blood circulation to the whole body. Apart from the physical nature of life, yoga provides beneficial effect to mental health also. Different breathing exercises or techniques are there to calm the mind and brain, offering inner peace and ability to face and deal with any problem.

Simplified kundalini Yoga:

Simplified Kundalini Yoga was founded by Vethathiri Maharishi. He sacrificed his whole life for the service of mankind. He practiced and preached love and bliss.

Man’s ignorance, arrogance and his emotions make his intelligence defective.. He is prone to all bad deeds. Man’s goal is spiritual development. Maharishi felt the “changes towards better living” should happen intuitively in the individual. Maharishi’s Kundalini yoga; is subdivided into

1. Simplified Physical Exercises
2. Kayakalpa Yoga
3. Meditation

Purposes of Simplified Physical Exercise:

Simplified Physical Exercise strengthens the body and helps to regularize the functioning of all systems to eradicate sinful imprints.

Purpose of Kayakalpa:

It gives significant physical mental as well as spiritual benefit by intensifying one's life force. Significant results have been observed in various types of chronic diseases and overall health conditions.

Longevity of life, can be achieved, slowdown ageing and maintaining youthfulness and to lead a diseases free healthy life. Chronic diseases are controlled on doing this practice. In students, the memory power increases visibly.

Meditation:

It is a stylized mental technique respectively practiced for the purpose of subjective experience that is frequently described as a very useful silent and heightened alertness, often characterized as blissful.

Women are equally capable doing of all the duties of men. Women should be given special comforts appropriate to the nobility of their sex.

Women engineering students from rural areas to cities for the educational purpose. Due to lack of language skill and the dress code of the city, they get frustrated. Yoga is the much needed technique for the overall development of women engineering students.

HYPOTHESIS:

It was hypothesized that there would be significant difference in physiological variable like vital capacity among women engineering students due to Simplified Kundalini Yoga.

It was hypothesized that there would be significant difference in psychological variable like Stress among women engineering students due to Simplified Kundalini Yoga.

Delimitations:

1. The study is delimited only to women engineering students studying at Chennai.
2. The data would be collected from fifty women divided into two groups namely experimental (group A) and control group (group B) consisting of twenty five each.
3. Age of the subjects ranged from 17 to 25 years only.
4. The study was delimited to the following dependent variables.
 - (a) Vital capacity
 - (b) Stress

Significance of the study:

The study was significant in assessing the selected physiological variable and psychological variable among the women engineering college students.

METHODOLOGY:

For this study, fifty women engineering students have been selected and divided into group A (experimental group) and group B (controlled group) of 25 subjects each. The experimental group participated in the training (Simplified Kundalini Yoga).

Pre-test and post were conducted with standardized equipments before and after the completion of training.

COMPUTATION OF ANALYSIS OF COVARIANCE ON VITAL CAPACITY

	Experimental Group	Control	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained F
Pre-Test Mean	3.01	2.85	Between	0.30	1	0.30	3.22
			Within	4.54	48	0.09	
Post-Test Mean	3.39	2.83	Between	3.91	1	3.91	36.57*
			Within	5.13	48	0.11	
Adjusted Post Test Mean	3.31	2.91	Between	1.94	1	1.94	117.28
			Within	0.78	47	0.02	
Mean Diff	0.38	-0.02					

Table-F ratio at 0.05 level of confidence for 1 and 48 (df)=4.04 and 47(df)=4.05 *significant

	Experimental Group	Control	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained F
Pre-Test Mean	25.84	28.16	Between	67.28	1	67.28	3.30
			Within	978.72	48	20.39	
Post-Test Mean	22.84	28.88	Between	456.02	1	456.02	33.88*
			Within	646.00	48	13.46	
Adjusted Post Test Mean	23.68	28.04	Between	222.79	1	222.79	77.27
			Within	135.51	47	2.88	
Mean Diff	-3.00	-0.72					

Table-F ratio at 0.05 level of confidence for 1 and 48 (df)=4.04 and 47(df)=4.05 *significant

The experiment group gained mean difference on physiological variable vital capacity and psychological variable Stress.

CONCLUSION:

Within the limitations and delimitations of the study,

1. The Simplified Kundalini Yoga significantly improved the physiological variable vital capacity among women engineering college students.
2. Simplified Kundalini Yoga regulated the psychological variable Stress among women engineering students.

BIBLIOGRAPHY:

Govindji, The body mind and the divine, published by Salim Pushanath, Dee Bee Info publications, kottayam, Kerala, India PP5,8

Yogiraj Vedhathiri Maharishi(2009) Physical health, Vethathiri publications, Aliyar PP 77-113

Yogiraj Vethathiri Maharishi(2009) Rejuvenating life force and mind, Vethathiri Publications, Aliyar PP 21,28,29,30,30,59,62,64-67.



ANALYSIS OF KNOWLEDGE AND ATTITUDE TOWARDS HEALTHY EATING AND PHYSICAL ACTIVITY BETWEEN RURAL AND URBAN SCHOOL BOYS

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ABSTRACT

The purpose of the study was to compare knowledge and attitude towards healthy eating and physical activity between urban and rural school boys. To facilitate the study each hundred rural and urban school boys were selected randomly from Chennai and Kanchipuram district. Their age was between 14 and 18 years. Knowledge and attitude towards healthy eating and physical activity was measured through standardized questionnaire. This questionnaire was developed by Roberts K., National Obesity Observatory, (2010). Randomized research design was used for this study, as the subjects were selected randomly from independent groups urban and rural school boys. The collected data were subjected to descriptive statistics and independent "t" test to find out any differences between the groups in the dependent variables selected. The result of the study should signification deference between rural and urban school boys in knowledge and attitude towards healthy eating and physical activity.

KEYWORDS: *Randomized, Measured, Questionnaire, Facilitate*

INTRODUCTION

The term “physical activity” describes many forms of movement, including activities that involve the large skeletal muscles. Activities that involve the small skeletal muscles (e.g. playing board games, drawing, and writing) are important, but they do not provide the health benefits of activities that involve the large skeletal muscles and require substantial energy expenditure (**Willett 2000**).

BENEFITS OF PHYSICAL ACTIVITY

Regular physical activity improves health in the following ways:

- ❖ Reduces the risk of dying prematurely.
- ❖ Reduces the risk of dying from heart disease.
- ❖ Reduces the risk of developing diabetes.
- ❖ Reduces the risk of developing high blood pressure.
- ❖ Helps reduce blood pressure in people who already have high blood pressure.
- ❖ Reduces the risk of developing colon cancer.
- ❖ Reduces feelings of depression and anxiety.
- ❖ Helps control weight.
- ❖ Helps build and maintain healthy bones, muscles, and joints.
- ❖ Helps older adults become stronger and better able to move about without falling.
- ❖ Promotes psychological well-being.

HEALTHY EATING

Healthy eating is important in order to prevent illness. When we do not get the right nutrients or body's natural defiance system against diseases weakens, allowing viruses and bacteria to attack the body. It's like a well-trained army-if the army doesn't have enough to eat, it will not do well in battle. Without healthy foods and plenty of water, our bodies simply could not operate on a day-to-day basis. Learning how to eat healthy foods is therefore an important lesson, and one which we should begin learning as children (**Hutchinson 2000**).

ATTITUDE

An attitude is an expression of favor or disfavor toward a person, place, thing, or event (the attitude object). Prominent psychologist Gordon Allport once described attitudes "the most distinctive and indispensable concept in contemporary social psychology (**Allport & Gordon 1935**).

KNOWLEDGE

Knowledge acquisition involves complex cognitive processes: perception, communication, association and reasoning; while knowledge is also said to be related to the capacity of acknowledgment in human being (**Stanley Cavell, 2002**).

RURAL

In general, a rural area is a geographic area that is located outside cities and towns (**Yen & Hope, 2011**).

URBAN

An urban area is characterized by higher population density and vast human features in comparison to the areas surrounding it. Urban areas may be cities, towns or conurbations, but the term is not commonly extended to rural settlements such as villages and hamlets (**Sridhar & Asha, 2011**).

STATEMENT OF THE PROBLEM

The purpose of the investigation was to find out the difference in the knowledge and attitudes towards healthy eating and physical activity between rural and urban school boys.

SIGNIFICANCE OF THE STUDY

This study may help the peoples to understand the level of knowledge and attitudes towards healthy eating and physical activity. This study will also help the peoples to lead a healthy life.

HYPOTHESIS

It was hypothesized that there was a significant difference between rural and urban school boys in knowledge and attitudes towards healthy eating and physical activity.

DELIMITATION

1. The study was be delimited to 100 rural and 100 urban areas school boys
2. The age group of subject were range between 14 to 18 years
3. The criterion variables selected for this study were knowledge and attitudes towards healthy eating and physical activity.
4. Data were collected by administrating knowledge and attitudes scale questionnaire towards healthy eating and physical activity (**Kath Roberts & Katie Marvin, 2011**).

LIMITATION

The previous experience of the subject's in the field of health and physical activity was considered as limitation of the study.

METHODOLOGY

The purpose of the study was to compare knowledge and attitude towards healthy eating and physical activity between urban and rural school boys. To facilitate the study each hundred rural and urban school boys were selected randomly from Chennai and Kanchipuram district. Their age was between 14 and 18 years. Knowledge and attitude towards healthy eating and physical activity was measured through standardized questionnaire. This questionnaire was developed by Roberts K., National Obesity Observatory, (2010). Randomized research design was used for this study, as the subjects were selected randomly from independent groups urban and rural school boys. The collected data were subjected to descriptive statistics and independent "t" test to find out any differences between the groups in the dependent variables selected.

RESULT AND DISCUSSION

Table
SHOWING THE MEAN, STANDARD DEVIATION, STANDARD ERROR OF MEAN,
MEAN DIFFERENCE AND "t" VALUE ON THE STATEMENT

Q.No	Group	MEAN	SD	SEM	MD	T
1	What do you consider to be a healthy diet?					
	Urban	8.49	1.95	0.19	2.95	9.43*
	Rural	5.54	2.45	0.24		

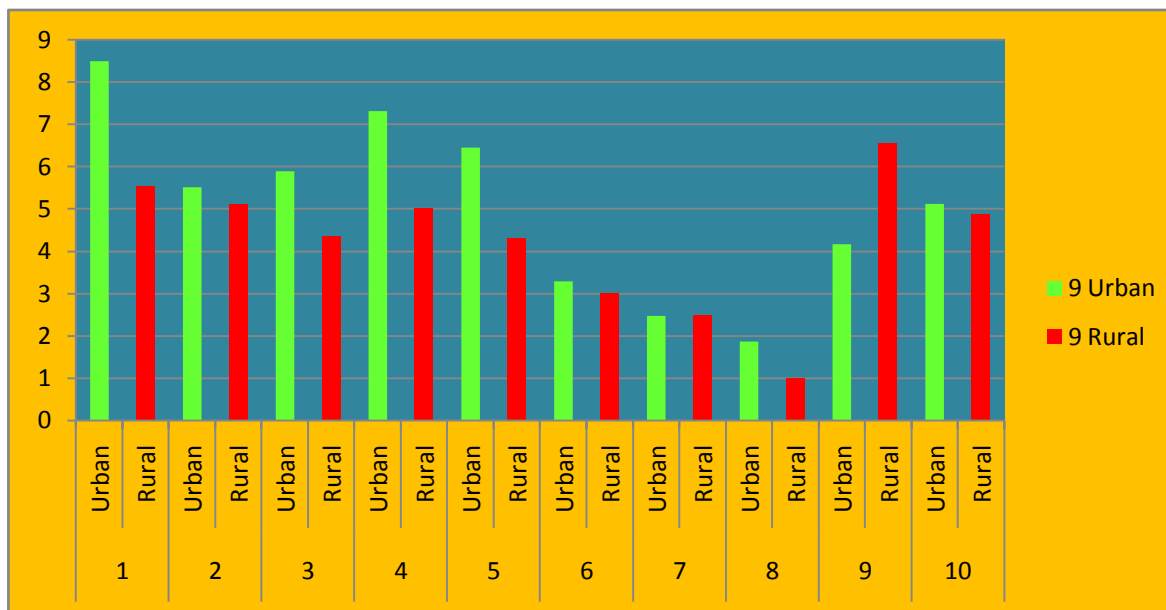
2	What changes would you make to					
	Urban	5.51	2.52	0.25	0.41	1.1
	Rural	5.1	2.74	0.27		
3	What difficulties might you have with eating more healthily?					
	Urban	5.88	2.53	0.25	1.53	3.59*
	Rural	4.35	3.42	0.34		

4	What, if anything, prevents you from living a healthier lifestyle?					
	Urban	7.3	3.45	0.34	2.29	5.23*
	Rural	5.01	2.71	0.27		
5	Are there things you would like to change about your current diet? And if so, what would help you to make that change?					
	Urban	6.45	2.26	0.23	2.14	5.21*
	Rural	4.31	3.43	0.34		
6	How satisfied are you with sports provision in your local area?					
	Urban	3.28	1.2	0.12	0.27	1.72
	Rural	3.01	1	0.1		
7	Do you generally do more, less or the same amount of sport and recreational physical activity as you did this time last year?					
	Urban	2.47	0.79	0.08	0.01	0.09
	Rural	2.48	0.82	0.08		
8	How healthy do you think your diet is?					
	Urban	1.86	3.05	0.3	0.87	2.52*
	Rural	0.99	1.62	0.16		
9	Why do you think that your diet is very healthy/quite healthy?					
	Urban	4.16	2.41	0.24	2.38	6.87*
	Rural	6.54	2.49	0.25		
10	What would help you to make healthier choices at school?					
	Urban	5.12	3.17	0.32	0.25	0.57
	Rural	4.87	3.01	0.3		

Table t ratio at 0.05 level of confidence for 98(df)=1.98. *Significant

Table shows the obtained means on the statement of questions 1, 3, 4, 5, 8 & 9 The obtained t value on the scores 9.43, 3.59, 5.23, 5.21, 2.52 & 6.87 was greater than the required t value 1.98, to be significant at 0.05 level This proved that there was significant differences existed between urban and rural school boys. The result were presented through a bar diagram in Figure for better understanding of the results.

FIGURE
BAR DIAGRAM SHOWING THE MEAN SCORES OF URBAN AND RURAL SCHOOL BOYS ON STATEMENT



CONCLUSIONS

Within the limitations and delimitations of this study, the following conclusions are drawn.

1. Among the urban school boys 41% of consider eating more vegetables as the healthy diet where as 42% rural school boys considers eating balanced diet as the healthy diet.
2. Among the urban school boys 40% of consider eating more fresh food as the changes the like made in healthy diet where as 30% rural school boys considers to add more fruit/ fruit juices and more variety in food as the changes in their diet.
3. Among the urban school boys 41% of consider their busy life style as their difficulty in eating more healthily. Whereas 42% rural school boys consider their prize of healthy foods as their difficulty in eating more healthily.
4. Among the urban school boys 41% of consider eating habits/ eating wrong food prevents their healthy life style. Whereas 42% rural school boys consider cost of healthy foods was preventing prevents their healthy life style.
5. Among the urban school boys 40% of consider change in family members eating healthier food. Whereas 42% rural school boys consider they need more money or healthier food must be in less expensive.
6. Among the urban school boys 48% neither satisfied nor dissatisfied with sports provisions in the local area. Whereas 56% satisfied nor dissatisfied with sports provisions in the local area.
7. Among the urban school boys 66% were increased their recreational and physical activities compared to last year. Whereas 67% rural school boys were increased their recreational and physical activities compared to last year.

8. Among the urban school boys 53% considers their diet not very healthy. Whereas 55% considers their diet very healthy.

9. Among the urban school boys 35% considers that they took healthy/ quiet healthy diet because they were eating good balanced diet. Whereas 35% considers that they took healthy/ quiet healthy diet because they don't eat junk food.

10. Among the urban school boys 32% considers that they need better choices of healthy dishes at school. Whereas 33% considers that they need better choices of healthy dishes at school.

REFERENCES

Roberts K., National Obesity Observatory, (2010). Philadelphia: McGraw Hill Inc.,p., 136.. 135.

Richard H. Cox, (2002), Sports Psychology: Concepts and Application, Mc Grow Hill Company, New York, P. 5.

Robert N. Singer, (1972). Coaching, Athletics and Psychology, Philadelphia: McGraw Hill Inc., P.. 135.

Carter (2003), Modern Text Book of Health in Basketball, Grow Hill Company, New York, P. 5,36, 48.

Delice Coffey (2012), Concepts and Application of Sports Psychology in Basketball, Mc Grow Hill Company, New York, P. 5.

Ebert and Cheatum (2004), Psychological Techniques in playing Basketball, Grow Hill Company, New York, P. 5, 36, 48.

Gangopadhyay. S.R.(2008), Sports Psychology, Sports Publications, New Delhi, P. 3. Kalyani Publishers, Ludhiana, India. P. 52.

Kamlesh and Sarangal (2001), Psychological Behaviour in Sports and Games, Philadelphia: W.B.Saunders company, P. 145.

Gareth Stevens (2013), the psychological aspect of sports performance, Sports Publications, New Delhi, P. 35.



EFFECTS OF YOGIC PRACTICES ON SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES OF COLLEGE WOMEN STUDENTS

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ABSTRACT

The present study is to find out the effects of yogic practice on selected physical and physiological variables of college women students. 20 subjects is selected from Karunya Institute of Technology and sports Science ,Coimbatore , Tamilnadu. The subjects were between 18 and 25 years. They were divided into 2 groups of 10 each. One group was acted as the experimental group and other group was acted as control group. The experimental group underwent the yogic practices for 12 weeks of 5 days in a week. Each training session was for one hour in the evening from 4:00 PM to 5:00 PM. To achieve the result the collected data on following criterion measures namely physical variables like flexibility and physiological variables like vital capacity were tested. The standardised tests were taken before and after the yogic practices training . Flexibility was tested using sit and reach test; vital capacity was find out digital spirometer. The paired 't' Test was applied to analyse the collected data and in all cases the criteria for the statistical significance was set at 0.05 level of confidence. It is concluded that the yogic practice significantly increases the flexibility and vital capacity of College women students.

KEYWORDS: *Yogic practice, Flexibility, Vital Capacity*

INTRODUCTION

The science of Yoga has its origin thousands of years ago, long before the first religion or belief systems were born. According to Yogic lore, Shiva has been seen as the first yogi or ādiyogi and the first guru or ādiguru. Several thousand years ago, on the banks of lake Kantisarovar in the Himalayas, ādiyogi poured his profound knowledge into the legendary saptarishis or "seven sages". These sages carried this powerful Yogic science to different parts of the world including Asia, the Middle East, northern Africa and South America. Interestingly, modern scholars have noted and marvelled at the close parallels found between ancient cultures across the globe. However, it was in India that the Yogic system found its fullest expression. Agastya, the saptarishi who travelled across the Indian subcontinent, crafted this culture around a core Yogic way of life.

Yoga is widely considered as an "immortal cultural outcome" of the Indus Saraswati Valley Civilisation – dating back to 2700 BC – and has proven itself to cater to both material and spiritual uplift of humanity. A number of seals and fossil remains of Indus Saraswati Valley Civilisation with Yogic motifs and figures performing Yoga sādhanā suggest the presence of Yoga in ancient India. The seals and idols of mother Goddess are suggestive of Tantra Yoga. The presence of Yoga is also available in folk traditions, Vedic and Upanishadic heritage, Buddhist and Jain traditions, Darshanās, epics of Mahabharata including Bhagavad-Gita and Ramayana, theistic traditions of Shaivas, Vaishnavas and Tantric traditions. Though Yoga was being practiced in the pre-Vedic period, the great sage Maharishi Patanjali systematised and codified the then existing Yogic practices, its meaning and its related knowledge through Patanjali's Yoga Sūtras.

After Patanjali, many sages and Yoga masters contributed greatly for the preservation and development of the field through well documented practices and literature. Yoga has spread all over the world by the teachings of eminent Yoga masters from ancient times to the present date. Today, everybody has conviction about Yoga practices towards the prevention of disease, maintenance and promotion of health. Millions and millions of people across the globe have benefitted by the practice of Yoga and the practice of Yoga is blossoming and growing more vibrant with each passing day.

STATEMENTS OF THE PROBLEMS

The present study is to find out the effect of yogic practices on selected physical and physiological variables namely flexibility and vital capacity of college women students.

Delimitations

1. This study confined to twenty college girls from Karunya Institute of Technology and Sports Science, Coimbatore, Tamil Nadu.
2. The subjects were selected only from the age group of 18 and 25 years.
3. The study delimited the physical and physiological variables namely flexibility and vital capacity.
4. The duration of the experimental period was 12 weeks.
5. The study is confined to the yogic practices.

Significance of the study

1. The study will be helpful to prepare the physical education syllabus for college students.

2. The study will be helpful to know the effect of yogic practices on selected physical and physiological variables of college students.
3. The study will be helpful to develop yoga practice training schedule improve the effect of yogic practices on selected physical and physiological variables of college students.
4. The study will be the guide to educationists and physical educationists.

Hypothesis

1. It is hypothesised that there may be significant differences due to effect of yogic practices on selected physical and physiological variables of college students.
2. It is hypothesised that there may be significant differences due to yogic practice training of the effect of yogic practices on selected physical and physiological variables namely flexibility and vital capacity.
3. It is hypothesised that there may be no significant differences between effect of yogic practices on selected physical and physiological variables of college students.

Limitations

The following limitations are considered for the study.

- The factors like personal habits, lifestyle, routine, diet, climatic conditions and environmental factors which might have had an effect on the results of this study will not be taken into consideration.
- Hereditary, social and other psychological factors could not be controlled.

METHODOLOGY

Selection of subjects

The purpose of the present study is to find out the effect of yogic practices on selected physical and physiological variables of college women students. 20 college girls are selected randomly from Karunya Institute of Technology and sports Science, Coimbatore, Tamil Nadu. The age of the subject ranged from 18 to 25 years. They were divided into two groups of 10 in each. One group acted as the experimental group. The experimental group was undergone the training for 12 weeks.

Selection of Variables

Independent Variable

1. Yogic practice

Dependent Variable

1. Flexibility

Physiological Variable

1. Vital Capacity

TABLE I SELECTED VARIABLES AND TESTS

S.NO	VARIABLES	TESTS	UNIT OF MEASUREMENT
1.	Flexibility	Sit and reach test	Centimeters
2.	Vital Capacity	Digital Spirometer	Liters

Experimental Design

For this study, Twenty college women students were selected as subjects. They were selected from Karunya Institute of Technology and sports Science , Coimbatore , Tamil Nadu. Their age ranged from 18-25 years which represented a true random sample group and it was called as experimental group. These subjects were tested to find out their physical and physiological variables namely flexibility and vital capacity were tested.

A yogic practice training for 12 weeks was given to the subjects. Their training days and hours every week ranged from Monday to Friday from 5:00PM to 6:00PM. A pre-test was conducted before the yogic practice training the final test data were collected after 12 weeks.

Statistical Techniques

't' ratio was calculated to findout the significance difference between the mean of pre and post test of the each group.

TABLE – II
TABLE SHOWING THE MEAN DIFFERENCE, STANDARD AND DEVIATION AND
'T' VALUE OF EXPERIMENTAL AND CONTROL GROUP IN FLEXIBILITY

GROUP	MEAN	Md	Std. deviation	Std. error of the mean	't'	Table values
Experimental Pre-test	5.47	2.93	2.97	0.76	11.0	2.14
Experimental Post test	8.40		3.22	0.83		
Control pre test	3.60	0.46	1.30	0.33	1.45	2.14
Control post test	4.06		1.94	0.50		

**significance at 0.05 level of confidence*

To find out the significance difference between pre test and post test on flexibility 't' ratio was employed and the level of significance was set at 0.05. The experimental group on flexibility pre test value was 5.47 and post test value was 8.40 respectively. The mean difference value was 2.93 and flexibility obtained 't' ratio 11.0 was greater than the table value 2.14. So it was to be significant. The control group on flexibility pre test value was 3.60 and post test value was 4.06 respectively. The mean difference value was 0.46 and flexibility obtained 't' ratio was 1.45 and is lesser than table value of 2.14. So it is found to be insignificant.

FIGURE – 1
BAR DIAGRAM SHOWING THE PRE AND POST TEST MEAN VALUE OF
EXPERIMENTAL GROUP OF FLEXIBILITY

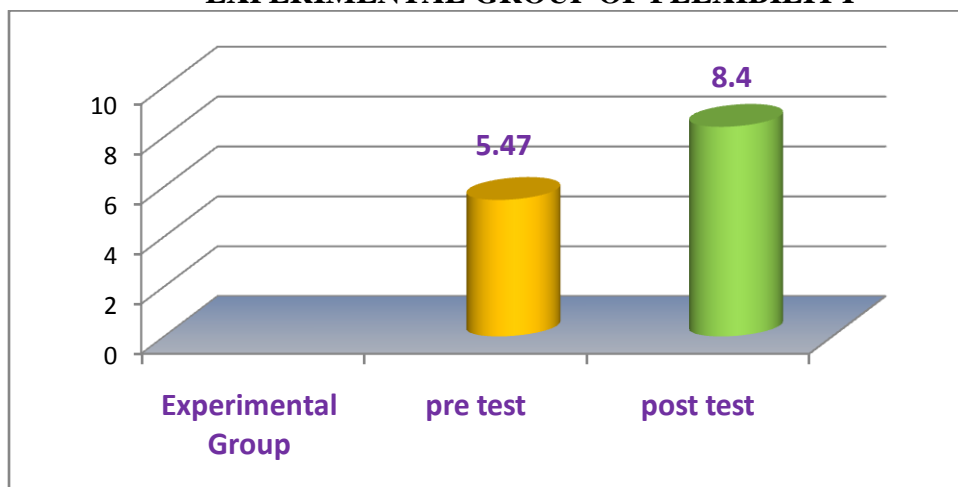


FIGURE – II
BAR DIAGRAM SHOWING THE PRE AND POST TEST MEAN VALUE OF
CONTROL GROUP OF FLEXIBILITY

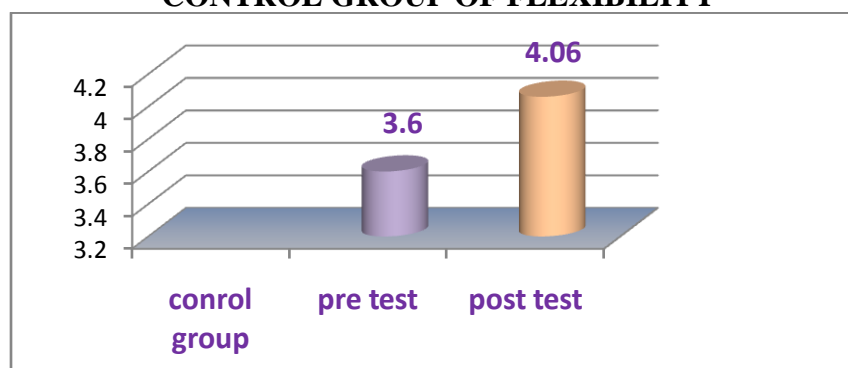


TABLE – III
TABLE SHOWING THE MEAN DIFFERENCE STANDARD DEVIATION AND ‘T’
VALUE OF EXPERIMENTAL AND CONTROL GROUPS IN VITAL CAPACITY

GROUP	MEAN	Md	Std. deviation	Std. error of the mean	‘t’	Table values
Experimental Pre-test	1.87	0.13	0.19	0.05	14.10	2.14
Experimental Post test	2.00		0.18	0.04		
Control pre Test	1.84	0.02	0.35	0.09	1.82	2.14
Control post test	1.86		0.33	0.08		

**significance at 0.05 level of confidence*

To find out the significance difference between pre test and post test on vital capacity 't' ratio was employed and the level of significance was set at 0.05. The experimental group on vital capacity pre test value was 1.87 and post test value was 2.00 respectively. The mean difference value was 0.13 and vital capacity obtained 't' ratio 14.10 was greater than the table value 2.14. So it was to be significant. The control group on vital capacity pre test value was 1.84 and post test value was 1.86 respectively. The mean difference value was 0.02 and vital capacity obtained 't' ratio was 1.82 and is lesser then table value of 2.14. So it is found to be insignificant.

FIGURE-III
BAR DIAGRAM SHOWING THE PRE AND POST TEST MEAN VALUE OF
EXPERIMENTAL GROUP OF VITAL CAPACITY

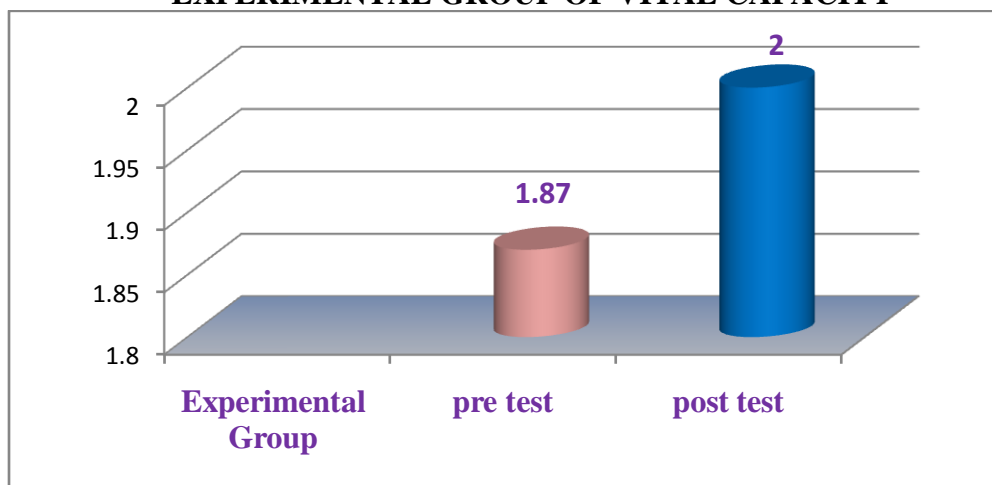
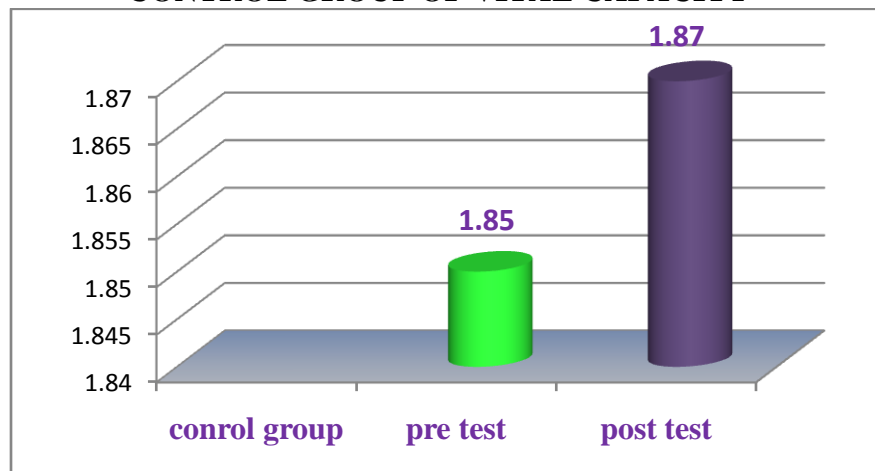


FIGURE-IV
BAR DIAGRAM SHOWING THE PRE AND POST TEST MEAN VALUE OF
CONTROL GROUP OF VITAL CAPACITY



DISCUSSION OF FINDINGS

The results of the study shows that the yogic practice group had significance improvement on selected physical and physiological variables namely flexibility and vital capacity. This may be due to the effect of yogic practice training.

The results conformity with other studies Garcia-Pinillos., et al (2015), Jayachandra and Saikumar(2014), Ramesh and Subramaniam (2011), Rajakumar (2010) has also provide in their studies that an improvement did occur physical and physiological variables namely flexibility and vital capacity.

CONCLUSIONS

Based on the statistical analysis and results of the study, the following conclusions are drawn.

- It is concluded that yogic practice training significantly improved the physical and physiological variables namely flexibility and vital capacity.



ANALYSIS OF LIFE STRESS OBESITY AND CARDIOVASCULAR RISKS AMONG PROFESSIONAL OF DIFFERENT SECTORS

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ABSTRACT

The purpose of this study was to analysis of life stress obesity and cardiovascular risks among professional of different sectors. To achieve purpose one hundred and fifty professionals (N=150) were assessed with the life stress questionnaire, BMI and cardiovascular risks questionnaire were selected as subjects and its tests for the study. The subjects were selected in the age group of 20-35. The selected subjects were from five different professional sectors namely thirty medicine practitioner (n=30) twenty information technology professional (n=30), Driving professionals (n=30), teaching professionals (n=30) and sports professionals (n=30) from Chennai city. The collected data were analyzed with statistical techniques such as ANOVA and Schaffer's Post hoc test. The results of the study that the teaching professionals were higher in the level of life stress than the driving, medicine practitioner, and information technology and sports professionals. The information technology professionals were higher in the level of obesity than the teaching, driving, and medicine practitioner and sports professionals. The information technology professionals were higher in the level of cardiovascular risks than the teaching, driving, and medicine practitioner and sports professionals. Further result of the study proved that sports professionals were better in managing level of life stress, cardiovascular risks and BMI than the information technology, teaching, driving, and medicine practitioner.

KEYWORDS: Questionnaire, Cardiovascular, Technology, Teaching, Driving,

INTRODUCTION

PROFESSION

A profession is something a little more than a job; it is a career for someone that wants to be part of society, who becomes competent in their chosen sector through training; maintains their skills through continuing professional development (CPD); and commits to behaving ethically, to protect the interests of the public.

A statement about what someone feels, believes, or intends to do, often made publicly.

STRESS

Stress is the process whereby an individual perceives a threat and responds with a series of psychological and physiological changes including increased arousal and the experience of anxiety. (Matt Jarvis, 1999).

OBESITY

Overweight and obesity ranges are determined by using an individual's weight and height in an equation to calculate BMI. An adult who has a BMI between 25 and 29.9 is considered obese. That is roughly 30 or more pounds over a healthy weight (Alexandra G. Kazaks, 2013).

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the analyses life stress, obesity and cardiovascular risks among professional of different sectors.

HYPOTHESES

1. It was hypothesized that there would be a significant difference in life stress among professional of different sectors.
2. It was hypothesized that there would be a significant difference in obesity among professional of different sectors.
3. It was hypothesized that there would be a significant difference in cardiovascular risk among professional of different sectors.

DELIMITATIONS

The study was delimited to the following aspects.

1. The study was delimited only for 150 subjects were selected from professional of different sectors from Chennai District.
2. The following professional only taken for this study Teacher, Driver, Medicine Practitioner, IT and Sports professional
3. The subjects were selected in the age group of 20-35.

REVIEW OF RELATED LITERATURE

Sampasa-Kanyinga H (2016) investigated the associations among self-perceived work and life stress, trouble sleeping, physical activity and body weight among Canadian adults, and tested whether trouble sleeping and physical activity moderated the relationship between work/life stress and body weight, and whether work/life stress and physical activity moderated the relationship between trouble sleeping and body weight. Data on 13,926 Canadian adults aged 20years and older were derived from the nationally representative 2012 Canadian Community

Health Survey. After adjusting for age, sex, education level, household income, marital status and job insecurity, self-perceived work and life stress and trouble sleeping were associated with a higher BMI. Results further indicated that trouble sleeping among inactive participants was related to a higher BMI; however, this relationship was almost null for adults who self-reported being physically active for about 8h/week.

METHODOLOGY

To achieve purpose one hundred and fifty professionals (N=150) were assessed with the life stress questionnaire, BMI and cardiovascular risks questionnaire were selected as subjects and its tests for the study. The subjects were selected in the age group of 20-35. The selected subjects were from five different professional sectors namely thirty medicine practitioner (n=30) twenty information technology professional (n=30), Driving professionals (n=30), teaching professionals (n=30) and sports professionals (n=30) from Chennai city. The collected data were analyzed with statistical techniques such as ANOVA and Scheffe's Post hoc test.

THE RESULTS AND DISCUSSION OF THE STUDY

TABLE- I
SHOWING ONE WAY ANOVA FOR LIFE STRESS OBESITY AND
CARDIOVASCULAR RISK AMONG TEACHING, DRIVING, MEDICAL
PRACTITIONER, INFORMATION TECHNOLOGY AND SPORTS PROFESSIONAL
* Significant (Table value required for significance at 0.05 level for "F" test with df (4,145) is 2.43)

variables	Mean values					SV	DF	SS	MS	'F'
	Teache r	Drive r	Medicin e	IT	Sport s					
LIFE STRESS	329.03	312.83	294.83	297.5	273.66	B	4	51649.23	12912.3	3.91*
						W	145	478421.5	3299.45	
OBESITY	26.65	25.99	24.26	28.24	22.49	B	4	589.82	147.45	10.08*
						W	145	2118.76	14.61	
CARDIO VASCUL AR RISKS	39.5	41.2	39.8	47.06	32.26	B	4	3344	836	13.76*
						W	145	8806.83	60.73	

From the table I the mean value obtained on Life Stress, Obesity and Cardiovascular Risk of the Teacher was 329.03, 26.69 & 39.5, Driver was 312.83, 26.04 & 41.2, Medicine Practitioner was 294.83, 24.31 & 39.8, IT was 297.5, 28.29 & 47.06, and Sports professional was 273.66, 22.53 & 32.26. The analysis of variance (ANOVA) of the means proved that there was a significant difference in Life Stress, Obesity and Cardiovascular Risk among the professional of different

Sectors as the obtained F values 3.91, 10.08 & 13.76 was greater than required F value of 2.43 to be significant at 0.05 level of confidence.

TABLE II
SCHEFFE'S POST HOC TEST FOR DIFFERENCE BETWEEN MEANS ON LIFE
STRESS OBESITY AND CARDIOVASCULAR RISK AMONG TEACHING,
DRIVING, MEDICAL PRACTITIONER, INFORMATION TECHNOLOGY ANDSPORTS
PROFESSIONAL

VARIABLES	MEAN VALUES					MD	CI
	Teacher	Driver	Medicine	IT	Sports		
LIFE STRESS	329.03	312.83				16.20	46.24 *
	329.03		294.83			34.20	
	329.03			297.5		31.53	
	329.03				273.66	55.37*	
		312.83	294.83			18	
		312.83		297.5		15.33	
		312.83			273.66	39.16	
			294.83	297.5		2.66	
			294.83		273.66	21.16	
				297.5	273.66	23.83	
OBESITY	26.65	25.99				0.65	3.08*
	26.65		24.26			2.39	
	26.65			28.24		1.59	
	26.65				22.49	4.16*	
		25.99	24.26			1.73	
		25.99		28.24		2.24	
		25.99			22.49	3.5*	
			24.26	28.24		3.98*	
			24.26		22.49	1.76	
				28.24	22.49	5.74*	
CARDIO VASCULAR RISKS	39.50	41.2				1.70	6.27*
	39.50		39.8			0.30	
	39.50			47.06		7.57*	
	39.50				32.26	7.23*	
		41.2	39.8			1.4	
		41.2		47.06		5.86	
		41.2			32.26	8.93*	
			39.8	47.06		7.26*	
	39.50	41.2				1.70	
	39.50		39.8			0.30	

The table II reveals that there was a significant difference in life stress between teaching and sports professional as the obtained mean deference was 55.37 greater than the CI value of 46.24 at 0.05 level of confidence. There was a significant difference in obesity between teaching and sports professional, driving and sports professional, information technology and sports

professional as the obtained mean deference was 4.16, 3.5, 3.98 and 5.74 greater than the CI value of 3.08 at 0.05 level of confidence. There was a significant difference in cardiovascular risk between teaching and information technology professional, driving and sports professional, medical practitioner and information technology professional, teaching and sports professional, medical practitioner and sports professional as the obtained mean deference was 7.57, 8.93, 7.26, 7.23, 7.53 and 14.8 greater than the CI value of 46.24 at 0.05 level of confidence.

CONCLUSIONS

Within the limitation of this study, the following conclusions were arrived at:

1. It was concluded that there was a significant differences among teaching, driving, medical practitioner, information technology and sports professionals in life stress. Further the results of the study proved that sports professional were better in life stress level than other professionals.
2. It was concluded that there was a significant differences among teaching, driving, medical practitioner, information technology and sports professionals in obesity. Further the results of the study proved that sports professional were better in managing BMI (Body Mass Index) level than other professionals.
3. It was concluded that there was no significant differences among teaching, driving, medical practitioner, information technology and sports professionals in cardiovascular risks. Further the results of the study proved that sports professional were found to be with low in cardiovascular risks than other professionals.

REFERENCES

- Anderson, B and Pamela J. Johnson (2005), "Physical fitness and Digest", DIBI Book, Inc., Illinois, P.1
- Authors Guide (1996) U.S. Department of Health and Human Services Physical activity and health: a report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.
- Clarke, David H. and H. Harrison Clarke (1970), Research Process in Physical Education and Health, Englewood Cliffs; New Jersey Prentice Hall, Inc., P.201-207
- Kazaks, Alexandra. Stern, Judith S., (1943) Nutrition and obesity: assessment, management, and prevention by 2013, Burlington, MA: Jones & Bartlett Learning.
- Matt Jarvis M (1999) Sport psychology: A student hand book, Rout ledge, London.



EFFECTS OF CIRCUIT CORE PACKAGE TRAINING IN COMBINATIONS WITH AEROBIC DANCE AND YOGA ON WORLD BEATERS TALENT TEST AMONG OVER WEIGHT GIRLS

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ABSTRACT

The pre and post tests were conducted on all the three groups on the selected criterion variables. To establish objectivity, co-efficient of correlation was computed between the trials conducted by different testers (Barrow and McGee, 1996). Generally, light-to-moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time. Using the collected data on body weight and height, Body Mass Index (BMI) was calculated. 57 subjects were identified as overweight ($BMI > 29$) and used as subjects for the study. Whenever, the 'F' ratio for adjusted final-test was found to be significant to determine the values the Schaffer's test was implemented. The training period was one hour every day, five days a week and in overall 12 weeks. The pre and post tests were conducted on all the three groups on the selected criterion variables. This facilitates the overweight girls to perform a skill with perfect technique and less expenditure of energy which leads to enhanced performance and reduced risk of injury.

KEYWORDS: *Intensity, Implemented, Criterion, Co-Efficient*

INTRODUCTION

- A sport does not only mean to achieve purely competitive goals.
- It is much broader sports in an activity which has many side effects on man and as a sphere of universe inter human contacts.
- It has even a deeper meaning, conditioned in the final analysis by the aggregate of basis social relations of which the given activity is a part.
- Sport requiring high levels of physical fitness.

PHYSICAL FITNESS

- Fitness may be described as a set of attributes that an individual has or has acquired which help in their ability to perform physical activity.
- Outlines the general components, which make up and are required for physical fitness in sport.
- Mental fitness and diet could be included but the diagram refers to the main components of fitness, which require physical activity and which bring about physiological changes in the body.

TRAINING

- Inadequate recovery time between training and matches will not allow the body's regenerative processes to take place. Also, excessive high-intensity training, sudden changes in exercise load (intensity, frequency, duration...) or intense strength training may cause.

CORE TRAINING

- Core Muscle Training (also referred to as Core Training, Core Stability or Core Strengthening) provides a protective shield for the spinal cord and internal organs of the human body.
- The fitness and wellness industry might see it as an exercise routine aimed at improving the overall health and fitness; in this context, it can involve proper hydration, natural nutrition, daily core exercises, body relaxation and recreation.
- The core is your entire torso, including internal organs. The core is very complex and serves many vital functions that contribute to your overall health.

HISTORY OF CORE TRAINING

- The 'core training' or 'core muscle training' refers to the exercises and nutrition programs specific for the development and maintenance of the abdominal and back muscles. Core training is defined as the complete set of processes that support core muscle development. In the 1970s and 1980s, this would also have involved techniques from yoga, Pilates and martial arts

GOOD CORE EXERCISES FOR WOMEN

- Good core exercises are gentle on your spine and neck. You should feel them most significantly in your stomach muscles. It might sound funny, but it's a fact, that how you breath during crunches is an important part of the technique. Exhale during the contraction

(on your way up) and inhale after the crunch (on your way down). This concentrates the action on your stomach muscles

AEROBIC DANCE

- **Aerobic exercise** (also known as **cardio**) is physical exercise of relatively low intensity that depends primarily on the aerobic energy-generating process. Aerobic literally means "living in air", and refers to the use of oxygen to adequately meet energy demands during exercise via aerobic metabolism. Generally, light-to-moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time

LOW-IMPACT AEROBICS

- This is made up of aerobic movements, which are defined as those movements that involve large muscle groups which are typically used in continuous or repetitive rhythmic activity, where at least one foot remains in contact with the ground at all times

HIGH-IMPACT AEROBICS

- This kind of aerobic dance is done with body movements through space while both feet can lose contact with the ground. It utilizes more strenuous aerobic movements such as stretching, jumping and hopping and provides a greater cardiovascular advantage over the low impact variety along with great metabolic boosting benefits, by which I mean the number of kilocalories used up for each minute of exercise

YOGA

- Yoga A Hindu discipline aimed at training the consciousness for a state of perfect spiritual insight and tranquility.
- A system of exercises practiced as part of this discipline to promote control of the body and mind.
- Yoga is not a spot reduction treatment. It takes time and diligence. But it works. Slowly but surely. Without any harmful side effects

SPECIFIC ASANAS FOR WEIGHT REDUCTION

- The slim, svelte figure is a goal of our culture, especially for the female sex, so that the next series of *asanas* may be of particular interest to women.
- From the point of view of Hatha Yoga, the elimination of excess fat has been one means of achieving body-mind harmony.
- Even before modern insurance actuaries pointed out the correlation between excess weight and high mortality, Yogis had determined that every pound of weight above normal (particularly for persons over forty) shortens life by one year.
- While many persons have ruined their health and even courted death by attempts to lose weight through chemical pills or starvation diets, the Yoga reducing method improves body tone while it trims excess poundage.

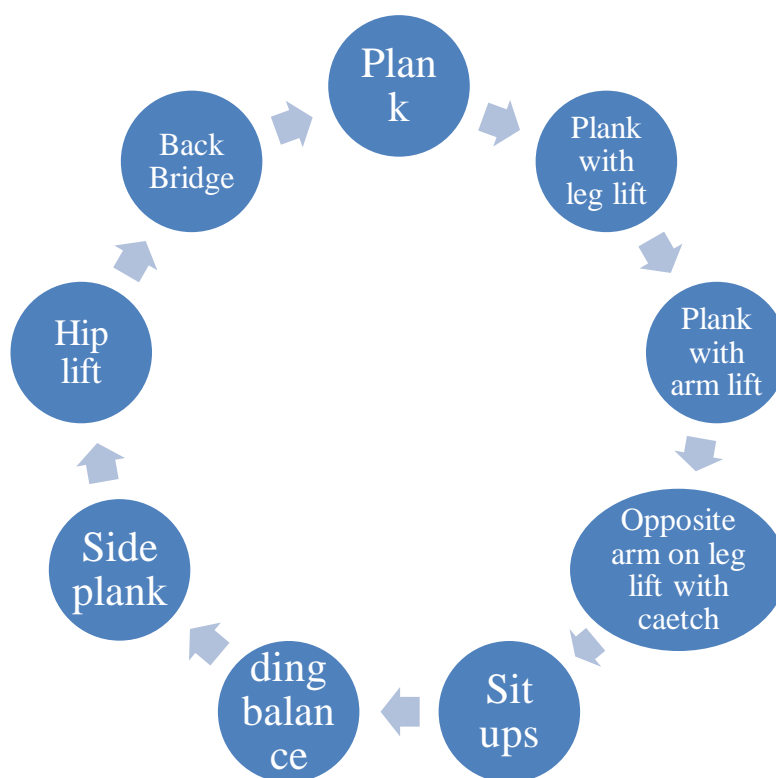
OBJECTIVE OF THE STUDY

- To determine the effects of circuit core package training with aerobic dance and yoga on world beaters talent test among over weight girls.

SIGNIFICANCE OF THE STUDY

- The ultimate goal of research in physical education is to train the overweight students to reduce their weight.
- The results of the study are useful to the schools, collages and university students to prepare training schedules for specific event.
- This study would also help the physical education teachers, coaches and parents to know how long the training effect shall reduce their weight after the cessation of training.
- The findings would add to the quantum of knowledge in the area of sports training.

CIRCUIT CORE TRAINING PACKAGE



LIONEL'S LEGEND FOR YOUR PLANK SCORE

- 1 minute = Excellent
- 40 seconds = Good
- 20 seconds = Fair
- 10 seconds = Poor

HYPOTHESIS

- It was hypothesized that, the core circuit training package with aerobic dance (CCTPAD) would have significant improvement on the components of world beaters talent test (WBTT) among overweight girls.

- It was hypothesized that, the core circuit training package with yoga practice (CCTPYP) would have significant improve on the components of world beaters talent test among overweight girls better than the core circuit training package with yoga.
- It was hypothesized that, the core circuit training package with aerobic dance (CCTPAD) and core circuit training package with yoga practices (CCTPYP) would have better improvement than the control group on the components of world beaters talent test (WBTT) among overweight girls.
- It was hypothesized that, the core circuit training package with aerobic dance (CCTPAD) would have significantly better improvement on the components of world beaters talent test (WBTT) among overweight girls than core circuit training package with yoga practice (CCTPYP)

DELIMITATIONS

- To achieve the purpose of the study, forty five over weight female students will be selected randomly as the subjects for the study.
- The study will be delimited to the school girls in different categories who age ranged from 11 to 14 years.
- The study will be delimited to the factors of circuit core training package with combination of aerobic dance and yoga
- The duration of the training period will be restricted to twelve weeks with six days per week.
- The data will be collected before training, after six weeks of training and after twelve weeks of training.

LIMITATION

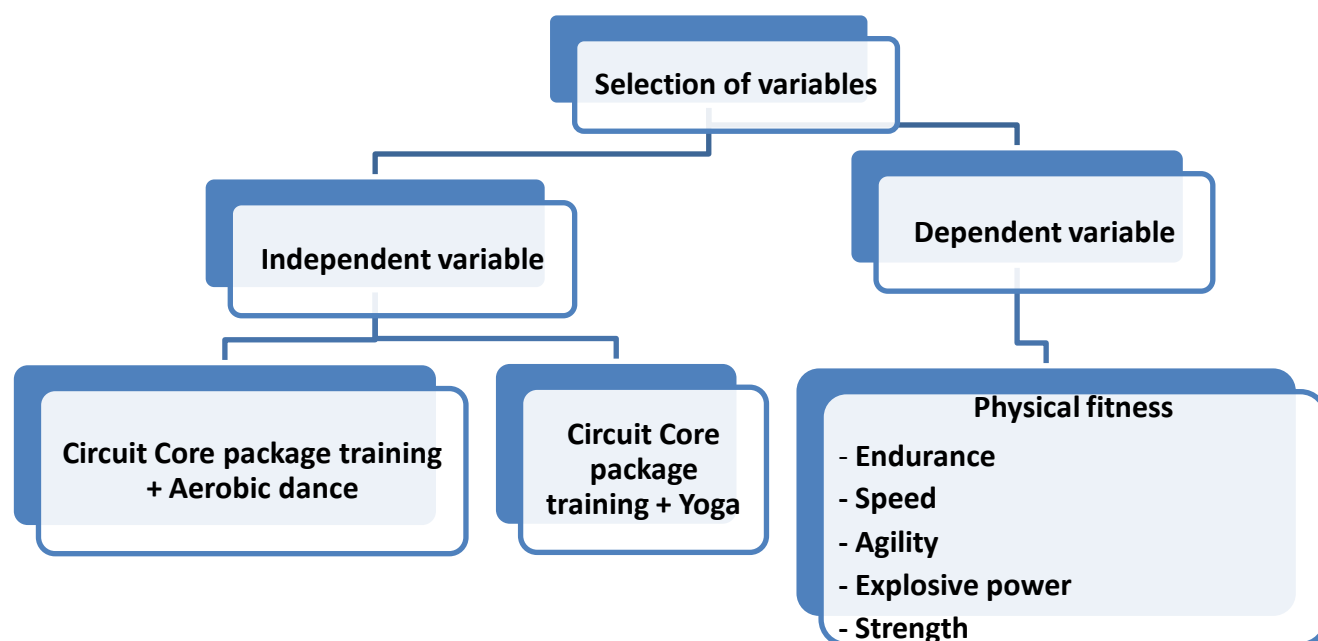
- The background of the previous training of the subject will not be considered.
- Psychological factors, food habits, rest period, life style etc
- Temperature, atmospheric pressure and humidity will not be considered

METHODOLOGY

Selection of Subjects

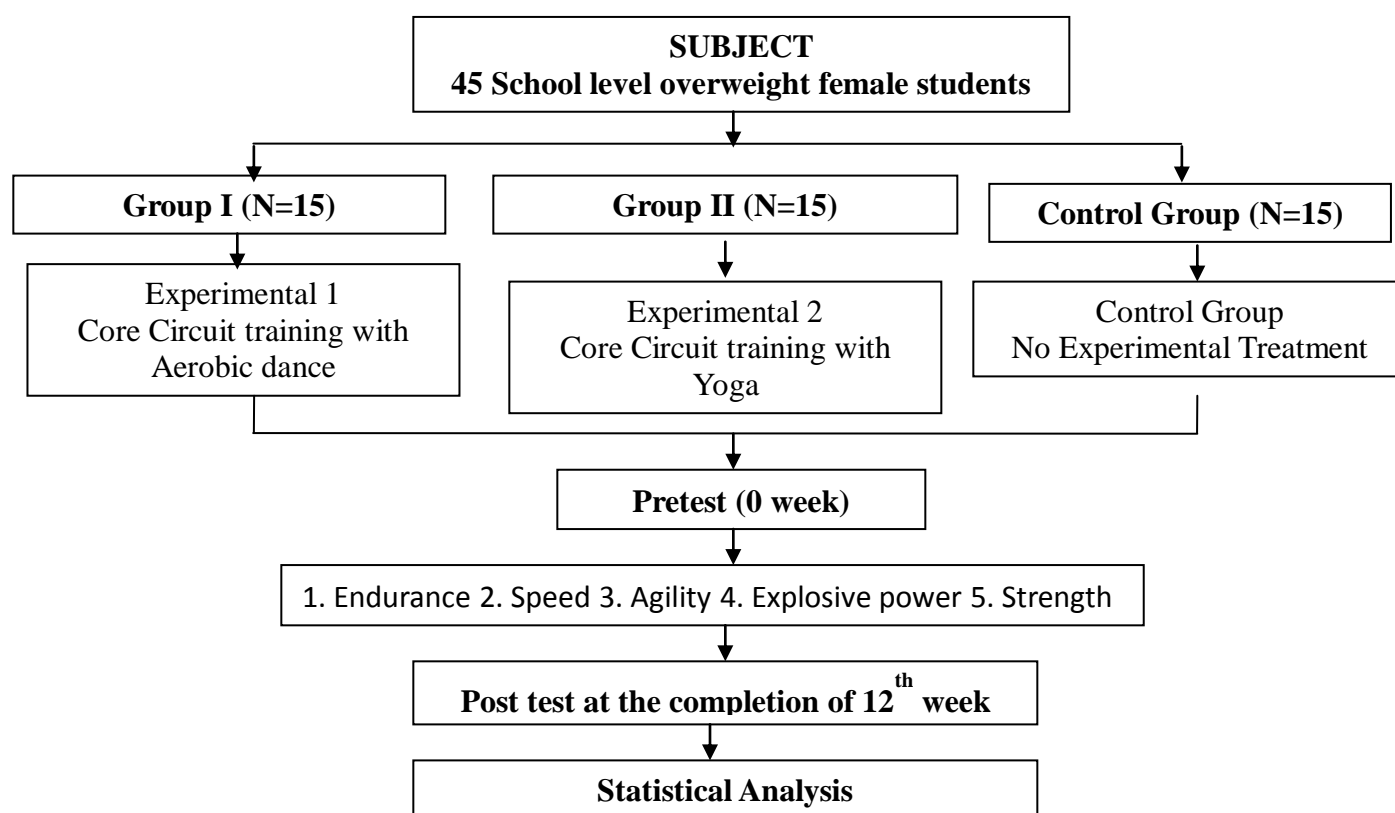
- To achieve the purpose of this study one hundred and seventy five (N=175) overweight school girls with the age group of 11 to 14 years were randomly selected from the Suburban Society Schools, Coimbatore. Using the collected data on body weight and height, Body Mass Index (BMI) was calculated. 57 subjects were identified as overweight (BMI>29) and used as subjects for the study. The nature and importance of this study was explained to the subjects. Among the 57 subjects 45 expressed their willingness to serve as subjects in this study.

SELECTION OF VARIABLES



STUDY DESIGN

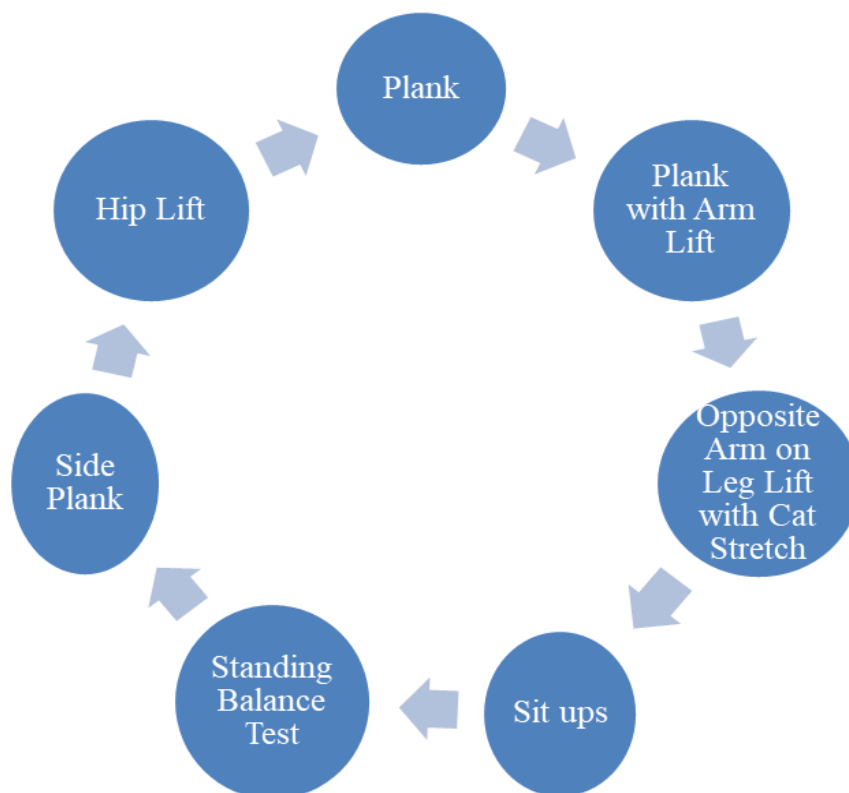
TEST PROCEDURES OF SELECTED VARIABLES



TRAINING SCHEDULE FOR CORE CIRCUIT TRAINING

S. No	Exercises	1-4 Weeks	5-8 Weeks	9-12 Weeks
1	Plank	60*2 [▲] (30)5 [#]	40*3 [▲] (30)5 [#]	30*4 [▲] (30)5 [#]
2	Plank with arm lift	60*2 [▲] (30)5 [#]	40*3 [▲] (30)5 [#]	30*4 [▲] (30)5 [#]
3	Opposite arm on leg lift with cat stretch	60*2 [▲] (30)5 [#]	40*3 [▲] (30)5 [#]	30*4 [▲] (30)5 [#]
4	Sit-ups	30*2 [▲] (30)5 [#]	40*3 [▲] (30)5 [#]	60*4 [▲] (30)5 [#]
5	Standing balance test (alternatively)	30*2 [▲] (30)5 [#]	40*3 [▲] (30)5 [#]	60*4 [▲] (30)5 [#]
6	Side plank	60*2 [▲] (30)5 [#]	40*3 [▲] (30)5 [#]	30*4 [▲] (30)5 [#]
7	Hip lift	60*2 [▲] (30)5 [#]	40*3 [▲] (30)5 [#]	30*4 [▲] (30)5 [#]

CORE CIRCUIT TRAINING PACKAGE



TRAINING SCHEDULE FOR AEROBIC TRAINING (1-4 WEEKS)

Training Structure	Duration	Devises/Activities	Tempo, Type of Music
Warm-up	5 min	Walking and walking in place. Running and running in place. "Warm-up" exercises for the joints.	90-110bpm
Main/aerobic	20min	Basic skills: march (walk), step touch, double step touch, side to side with some modifications and alterations	100-120bpm Aerobic Dancing Silver sneakers beats
Cool down	5 min	Stretching and relaxation exercises activating multiple parts of the body, primarily the legs	100bpm

TRAINING SCHEDULE FOR AEROBIC TRAINING (5-8WEEKS)

Training Structure	Duration	Devises/Activities	Tempo, Type of Music
Warm-up	5 min	Walking and walking in place. Running and running in place. "Warm-up" exercises for the joints.	100-120bpm
Main/aerobic	15min	Intermediate skills: march (walk), step touch, double step touch, side to side, leg curl, double leg curl, knee up, double knee up, grapevine, mambo, cha-cha-cha with some modifications.	120-140bpm Aerobic dancing. Swing to big band beats
Main/strength	5 min	Exercises for strengthening the abdomen and back.	Each movement lasted for 1 sec
Cool down	5 min	Stretching and relaxation exercises activating multiple parts of the body, primarily the legs	One exercise lasted for approximately 30 sec

TRAINING SCHEDULE FOR AEROBIC TRAINING (9-12WEEKS)

Training Structure	Duration	Devises/Activities	Tempo, Type of Music
Warm-up	5 min	Walking and walking in place. Running and running in place. "Warm-up" exercises for the joints, slow jogging.	110-130bpm
Main/aerobic	15min	Advanced steps: march (walk), step touch, double step touch, side to side, leg curl, double leg curl, double kneeup, grapevine, mambo, cha-cha-cha, V- step, squat, hop, jump, turn.	140-160bpm Aerobic dancing Accsipp gold beats
Main/strength	5 min	Exercises for strengthening the abdomen, back, arms and shoulders, legs.	Each movement lasted for 1 sec
Cool down	5 min	Stretching and relaxation exercises activating multiple parts of the body, primarily the legs	One exercise lasted for 30 sec

TRAINING SCHEDULE FOR YOGA PRACTICES

Weeks	Asanas	Repetition	sets	Holding position	Rest between asanas	Frequency per week	
1-4	Suriyanamaskar	1	1	30sec	2 min	5days	
	Vrksasnaa	1	1	30sec	30sec		
	Vajrasana	1	1	30sec	30 sec		
	Bhujangasana	1	1	30sec	30sec		
	Sarvangasana	1	1	30sec	30sec		
	Shavasana	Rest between each asana(alternatively)1 min					
	Makarasana						

Weeks	Asanas	Repetition	sets	Holding position	Rest between asanas	Frequency per week
	Suriyanamaskar	2	2	30sec	1 min	5days
	Trikonasana	1	2	30sec	30sec	
	Yoga mudra	1	2	30sec	30 sec	
	Shalabhasana	1	2	30sec	30sec	

5-8	Matsyasana	1	2	30sec	30 sec	
	Shavasana	Rest between each asana(alternatively)1 min				
	Makarasana					

Weeks	Asanas	Repetition	sets	Holding position	Rest between asanas	Frequency per week	
9-12	Suriyanamaskar	3	2	30sec	1 min	5days	
	Paschimottanasana	1	2	30sec	30sec		
	Dhanurasana	1	2	30sec	30 sec		
	Shalabhasana	1	2	30sec	30sec		
	Matsyasana	1	2	30sec	30 sec		
	Shavasana	Rest between each asana(alternatively)1mit					
	Makarasana						

STATISTICAL ANALYSIS

- The co-efficient of correlation was computed between the two trials conducted through test and retest method to establish interclass reliability. To establish objectivity, co-efficient of correlation was computed between the trials conducted by different testers (Barrow and McGee, 1996). The Pearson product moment correlation was computed between the criterion measures and already established standardized test to estimate concurrent validity (Barrow and McGee, 1996).
- Paired sample 't' test was used to evaluate and analyse the difference between pre test to post test for experimental group and control group individually. Among the group, mean difference Analysis of Co-variance was used. All the data were analysed by using SPSS statistical package. Scheffé's post hoc test was used to evaluate the better mean among the group.

RESULTS AND DISCUSSION

- In the present study, the data were analysed in two parts. (a) In order to analyse the training effects of each group on selected components of world beaters test variables "t" ratio was used. (b) In order to compare the effect of treatment on selected components of world beaters test variables among the three groups, analysis of covariance was used. Whenever, the 'F' ratio for adjusted final-test was found to be significant to determine the values the Schaffer's test was implemented. The training period was one hour every day, five days a week and in overall 12 weeks. The pre and post tests were conducted on all the three groups on the selected criterion variables.

ANALYSIS OF THE DATA

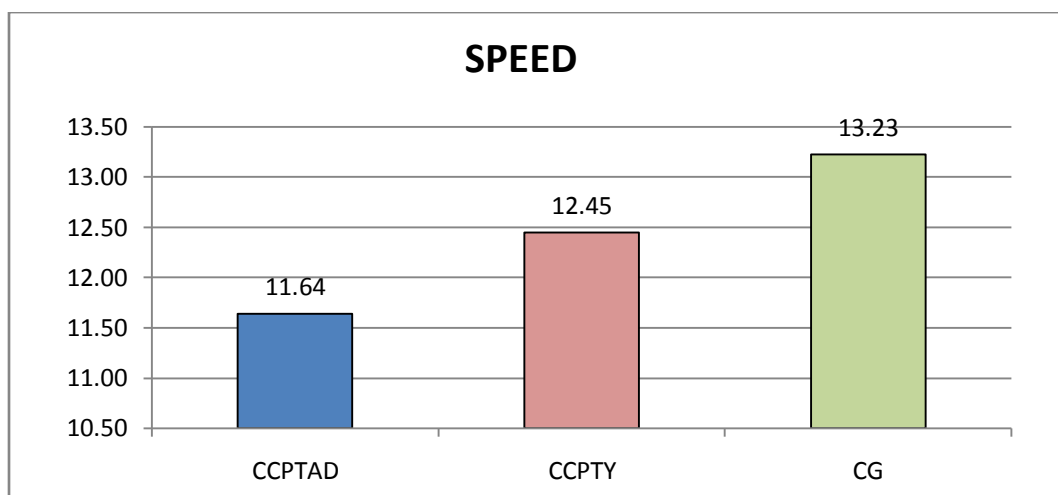
- The impact of training effects of each group on components of world beaters talent test variables “t” ratio was used.
- The impact of core circuit package training with aerobic dance and yoga package on each variable was determined by subjecting the collected data to the Analysis of covariance (ANCOVA) separately.

RESULTS OF ‘t’ TEST

- The primary objective of the paired ‘t’ ratio was to describe the difference between the initial test and final test mean of overweight girls.
- Thus, the obtained results were interpreted with earlier studies and are presented.

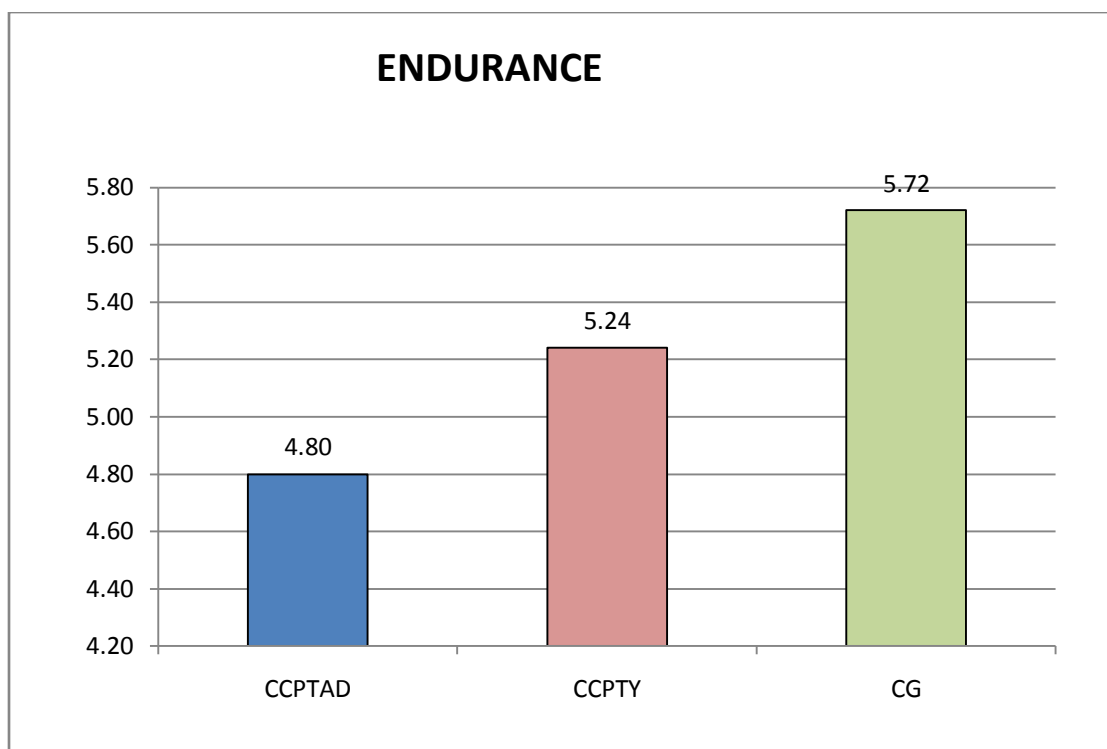
Analysis of Covariance for the Pre Test, Post Test and Adjusted Post Test Means on Speed of Experimental and Control Groups

Test	Experimental Group-‘A’ (Seconds)	Experimental Group-‘B’ (Seconds)	Control Group (Seconds)	Source of variance	Sum of square	df	Mean square	‘F’ ratio
Pretest Mean SD(±)	13.01 (0.54)	13.28 (0.65)	13.12 (0.52)	B.M	.540	2	.270	.810
				W.G	14.00	42	.333	
Post test Mean SD(±)	11.63 (0.34)	12.46 (0.38)	13.23 (0.48)	B.M	19.20	2	9.604	57.43*
				W.G	7.02	42	.167	
Adjusted Post test Mean	11.64	12.45	13.23	B.S	18.90	2	9.453	55.73*
				W.S	6.954	41	.170	



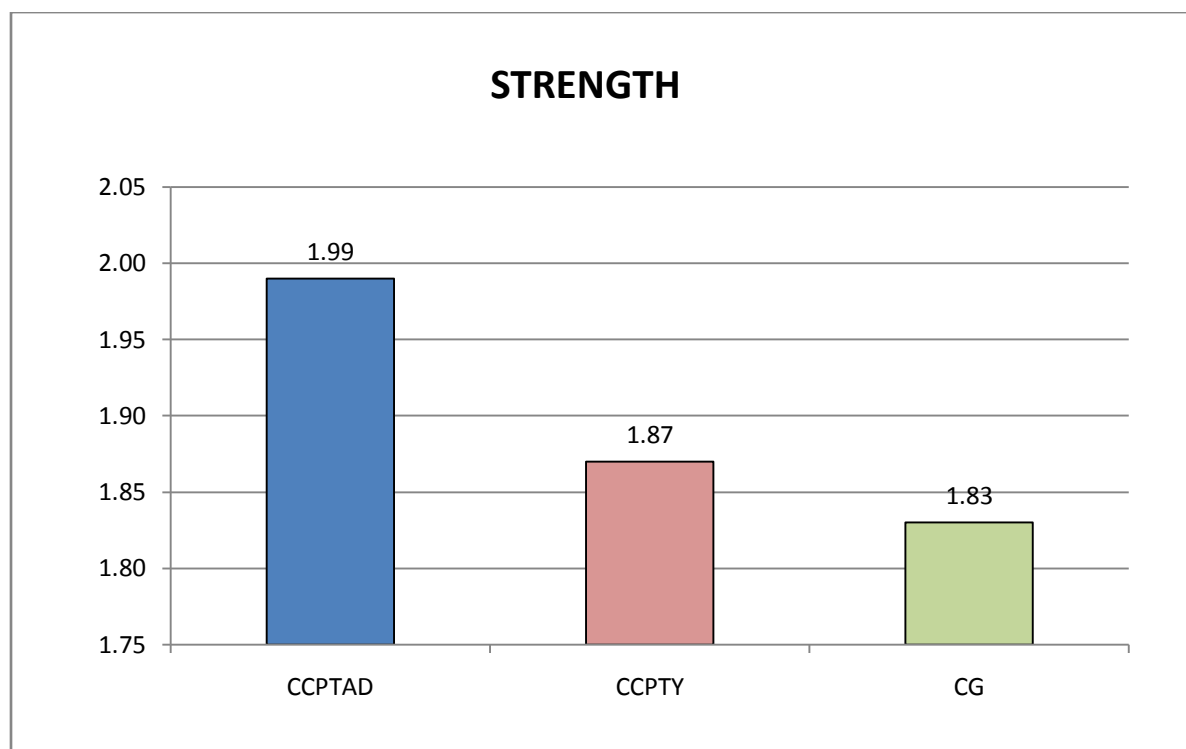
Analysis of Covariance for the Pre Test, Post Test and Adjusted Post Test on Mean Endurance of Experimental and Control Groups

Test	Experimental Group-‘A’	Experimental Group-‘B’	Control Group	Source of variance	Sum of square	df	Mean square	‘F’ ratio
Pretest Mean SD (±)	5.80 (0.70)	5.63 (0.75)	5.94 (0.72)	B.M	0.752	2	0.38	0.71
				W.G	22.224	42	0.53	
Post test Mean SD(±)	4.79 (0.66)	5.08 (0.75)	5.88 (0.85)	B.M	0.0222	2	4.78	8.29*
				W.G	0.0427	42	0.58	
Adjusted Post test Mean	4.80	5.24	5.72	B.S	6.29	2	3.14	46.52*
				W.S	2.77	41	0.68	



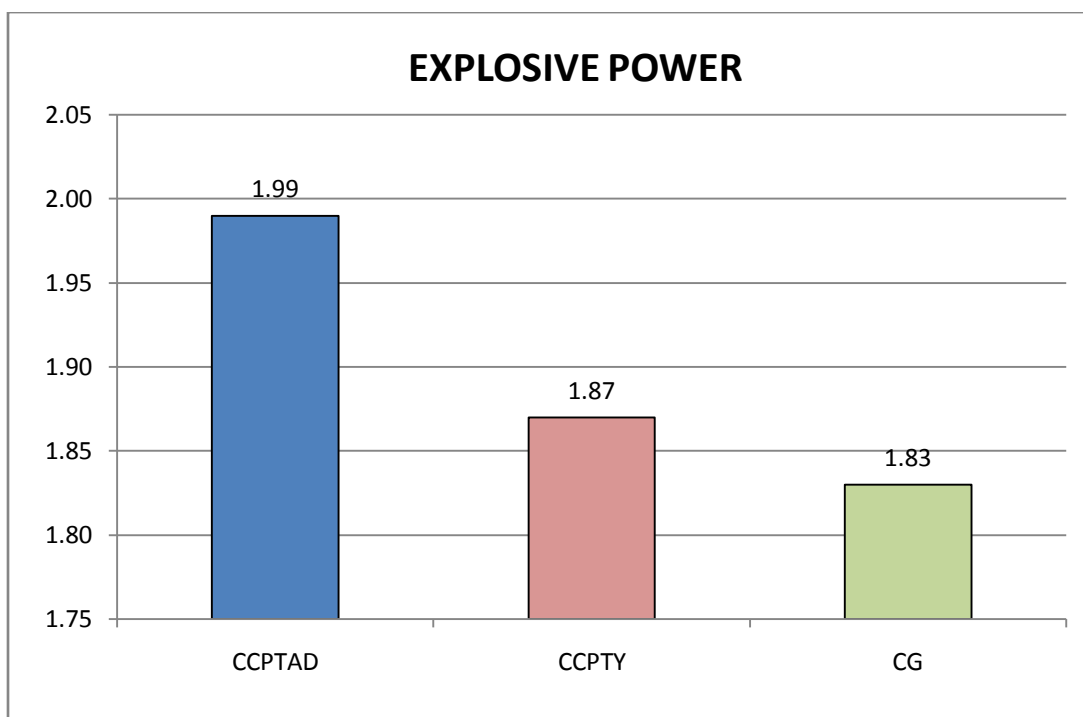
Analysis of Covariance for the Pre Test, Post Test and Adjusted Post Test on Mean Strength of Experimental and Control Groups

Test	Experimental Group-‘A’	Experimental Group-‘B’	Control Group	Source of variance	Sum of square	df	Mean square	‘F’ ratio
Pretest Mean SD(±)	3.52 (0.46)	3.43 (0.42)	3.52 (0.46)	B.M	0.07	2	0.07	0.17
				W.G	8.63	42	8.63	
Post test Mean SD(±)	4.21 (0.51)	3.86 (0.46)	3.51 (0.46)	B.M	3.64	2	1.82	7.82*
				W.G	9.79	42	0.23	
Adjusted Post test Mean	4.18	3.92	3.48	B.S	3.80	2	1.88	82.25*
				W.S	0.94	41	0.024	



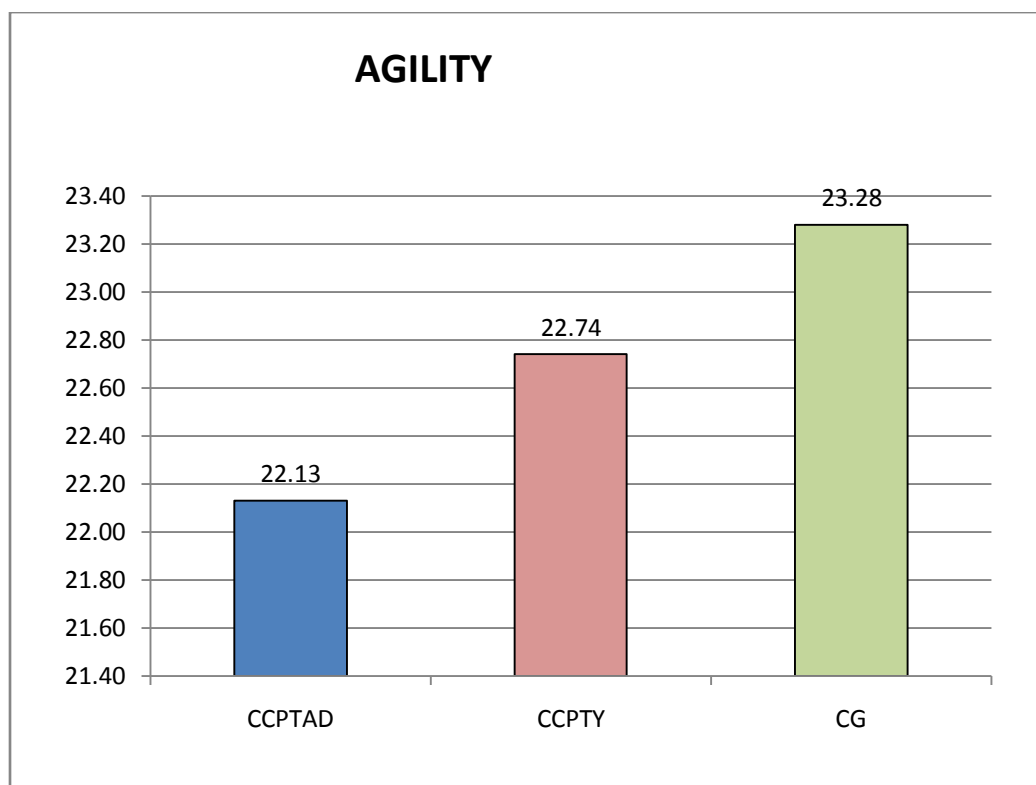
Analysis of Covariance for the Pre Test, Post Test and Adjusted Post Test Means on Explosive Power of Experimental and Control Groups

Test	Experimental Group-‘A’	Experimental Group-‘B’	Control Group	Source of variance	Sum of square	df	Mean square	‘F’ ratio
Pre test Mean SD(±)	1.78 (0.46)	1.84 (0.42)	1.88 (0.46)	B.M	.079	2	.040	0.20
				W.G	8.511	42	.203	
Post test Mean SD(±)	1.94 (0.42)	1.88 (0.43)	1.88 (0.48)	B.M	.043	2	.021	0.10
				W.G	8.390	42	.200	
Adjusted Post test Mean	1.99	1.87	1.83	B.S	0.20	2	0.10	4.04*
				W.S	1.05	41	0.02	



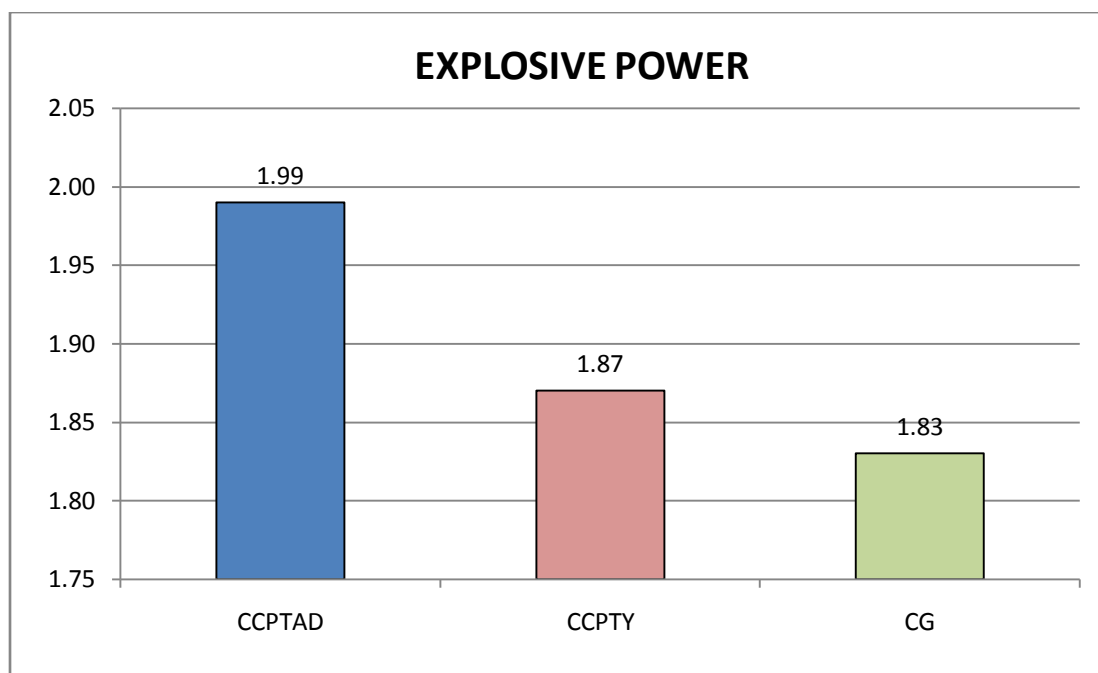
Analysis of Covariance for the Pre Test, Post Test and Adjusted Post Test Means on Agility of Experimental and Control Groups

Test	Experimental Group-‘A’ (Seconds)	Experimental Group-‘B’ (Seconds)	Control Group (Seconds)	Source of variance	Sum of square	df	Mean square	‘F’ ratio
Pre test Mean SD(±)	23.39 (0.78)	23.19 (0.81)	23.38 (0.71)	B.M	0.387	2	0.19	0.32
				W.G	25.13	42	0.59	
Post test Mean SD(±)	22.20 (0.85)	22.62 (0.85)	23.34 (0.72)	B.M	10.09	2	5.04	7.60*
				W.G	27.90	42	0.66	
Adjusted Post test Mean	22.13	22.74	23.28	B.S	9.97	2	4.98	30.74*
				W.S	6.65	41	0.16	



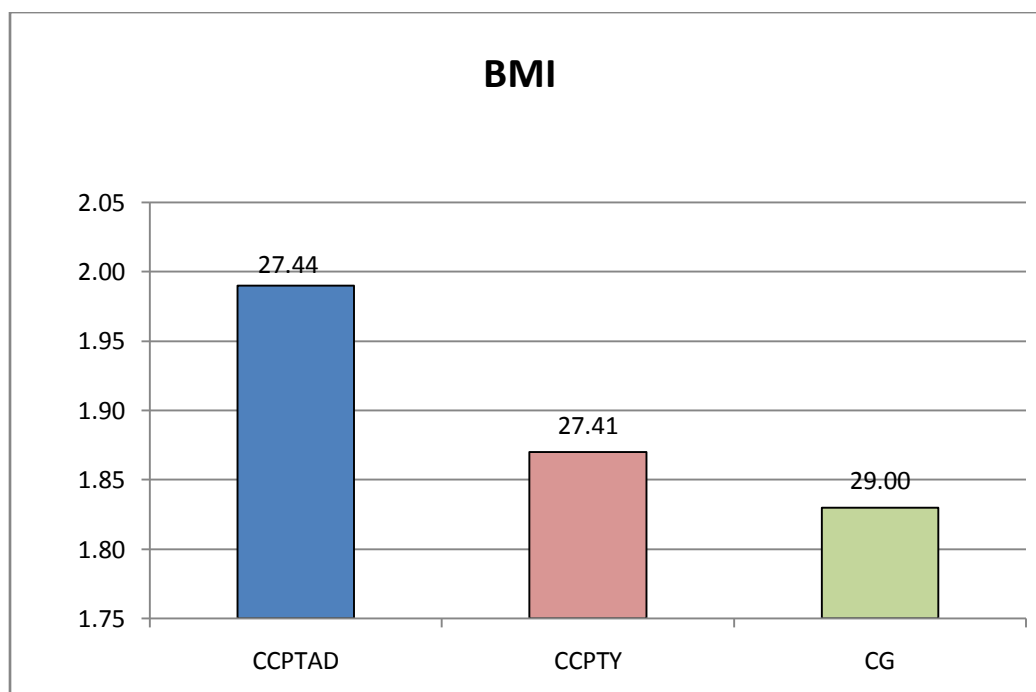
Analysis of Covariance for the Pre Test, Post Test and Adjusted Post Test Means on Explosive Power of Experimental and Control Groups

Test	Experimental Group-‘A’ (Aerobic training group)	Experimental Group-‘B’ (Yoga training group)	CONTROL GROUP	Source of Variance	Sum of Squares	df	Mean Square	‘F’ ratio
Pre test Mean SD(±)	1.78 (0.46)	1.84 (0.42)	1.88 (0.46)	B.M	.079	2	.040	0.20
				W.G	8.511	42	.203	
Post test Mean SD(±)	1.94 (0.42)	1.88 (0.43)	1.88 (0.48)	B.M	.043	2	.021	0.10
				W.G	8.390	42	.200	
Adjusted Post test Mean	1.99	1.87	1.83	B.S	0.20	2	0.10	4.04*
				W.S	1.05	41	0.02	



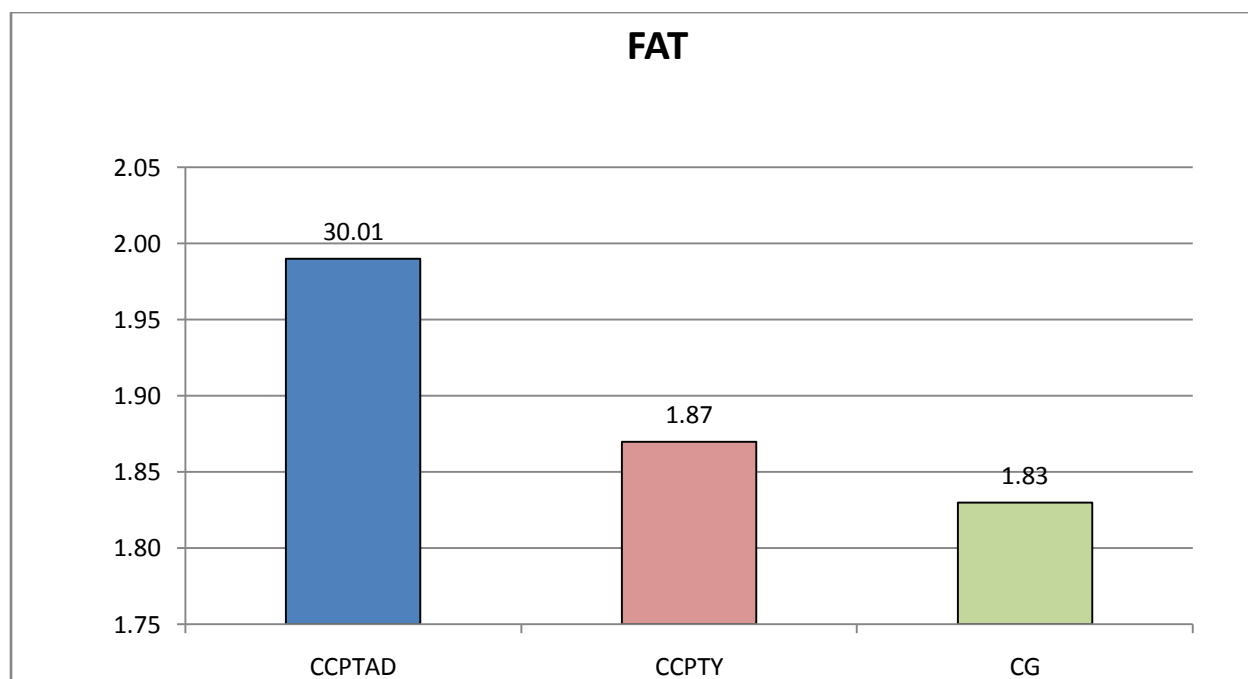
Analysis of Covariance for the Pre Test, Post Test and Adjusted Post Test Means on BMI of Experimental and Control Groups

Test	CCTPAD	CCTPYP	CG	SV	SS	df	MS	'F' ratio
Pre test Mean SD(±)	28.96 (1.21)	29.25 (0.93)	29.00 (1.35)	B.M	.755	2	.377	0.27
				W.G	58.55	42	1.39	
Post test Mean SD(±)	27.33 (1.41)	27.59 (1.09)	28.93 (1.27)	B.M	22.05	2	11.02	6.83
				W.G	67.78	42	1.61	
Adjusted Post test Mean	27.44	27.41	29.00	B.S	24.79	2	12.39	59.76
				W.S	8.50	41	.207	



Analysis of Covariance for the Pre Test, Post Test And Adjusted Post Test Means on Fat of Experimental and Control Groups

Test	CCTPAD	CCTPYP	CG	SV	SS	df	MS	'F' ratio
Pre test Mean SD(±)	36.08 (1.45)	35.12 (1.15)	35.99 (1.48)	B.M	8.407	2	4.20	2.22
				W.G	78.44	42	1.89	
Post test Mean SD(±)	30.41 (2.57)	33.84 (1.28)	36.06 (1.28)	B.M	242.85	2	121.42	37.21
				W.G	137.05	42	3.26	
Adjusted Post test Mean	30.01	34.54	35.76	B.S	271.53	2	135.76	169.71
				W.S	32.79	41	.800	



DISCUSSION ON THE FINDINGS

- The effect of core circuit training package with aerobic dance and yoga on world beaters talent test among overweight girls had a significant improvement on BMI, speed, endurance, strength, explosive power, agility and fat percentage.
- The control group did not have any significant improvement on the core circuit training package with aerobic dance and yoga on world beaters talent test among overweight girls.
- The aerobic training trains the core muscles responsible for a particular movement. The aerobic training teaches and trains the core muscles. This facilitates the overweight girls to perform a skill with perfect technique and less expenditure of energy which leads to enhanced performance and reduced risk of injury.
- The effect of core circuit training package with aerobic dance and yoga on world beaters talent test among overweight girls had a significant improvement on the selected physical fitness variables than the control group

CONCLUSIONS

- The core circuit training package with aerobic dance (CCTPAD) practice had a significant improvement on the selected components of world beaters talent test (WBTT) among the overweight girls.
- The core circuit training package with yoga practice (CCTPYP) had a significant improvement on the selected components of world beaters talent test (WBTT) among the overweight girls.
- Both the core circuit training package with aerobic dance (CCTPAD) and core circuit training package with yoga (CCTPYP) showed significant improvement than the control group.

- The core circuit training package with aerobic dance (CCTPAD) was better than the core circuit training package with yoga practices (CCTPYP) on comparing the improvement they showed during and at the end of the training period.



SELECTED EXERCISE PROGRAM AS A DETERMINANT OF INCREASING THE LEVEL OF SELF CONFIDENCE AMONG DIABETIC WOMEN

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ABSTRACT

Science and Technology have revolutionized the life style of man and the increased standard of living has made man sedentary leading to chronic non communicable diseases. The purpose of the study is to measure the influence of Yogic Practices and Brisk walking on the confidence level of the Diabetic women. For this purpose ninety women with type II diabetes were chosen randomly from various hospitals at Chennai City, Tamilnadu, India. Their age ranged between 40-45 years. They were assigned to experimental group I, experimental group II and control group each having 30 subjects. Experimental group I underwent yogic practices, experimental group II underwent brisk walking for twelve weeks and control group was not given any training. The confidence level of the women was measured through a questionnaire by Rekha Agnihorty. Recent research has revealed that like many other current personality constructs, self confidence may be multi-dimensional including there ability to use psychological skills. The statistical analysis comparing the initial and final means of self confidence due to twelve weeks of yogic practices and brisk walking in type II diabetic women showed that there was a significant difference between the groups as the obtained F value of 7.27 was greater than the required F value of 3.1. This proved that the differences between the post test means of the subjects were significant. The adjusted mean scores based on the obtained F value proved that there was a significant difference among the means due to twelve weeks of yogic practices and brisk walking on the self confidence. The means of the groups showed that yogic practices showed better result than the walking group. However there was no significant difference between the experimental groups. It was concluded that systematic exercise program is one of the determinants of increasing the self confidence among diabetic women.

KEYWORDS: *Yogic Practices, Diabetic, Brisk walking*

INTRODUCTION

The modern man is becoming submerged by a world full of concentration with large number of problems and recurrent crisis. Among these are the distortions of values, the corruption of mind, endless social problems. Drug consumption and abuses, stress, mental and physical ailment are increased in high rate (Davidson and Neal, 1990). These problems will not be solved through new technological developments. Instead, the resolution to these human problems will come only when we discover within ourselves that for which all of mankind is searching inner peace, tranquility and wisdom. This attainment is the goal of yoga, for yoga is the practical science intended to help human beings become aware of their ultimate nature (www.swamiji.com). Walking is a popular and readily accessible form of moderate intensity physical activity, suitable for almost all the sedentary population (Lee et al., 2001). Walking is definitely the easiest and most inexpensive way to remain healthy and burn off calories (Baxendale, 1995). Human walking is accomplished with a strategy called the double pendulum. During forward motion, the leg that leaves the ground swings forward from the hip. This sweep is the first pendulum. Then the leg strikes the ground with the heel and rolls through to the toe in a motion described as an inverted pendulum. The motion of the two legs is coordinated so that one foot or the other is always in contact with the ground. The process of walking recovers approximately sixty per cent of the energy used due to pendulum dynamics and ground reaction force. (Human Walking, 2010)

Diabetes Mellitus is a constitutional disease with heritable tendencies. A disorder caused by decreased production of insulin, or by decreased ability to use insulin. Insulin is a hormone produced by the pancreas that is necessary for cells to be able to use blood sugar. The medical name for diabetes, diabetes mellitus, comes with Greek and Latin roots. Diabetes comes from a Greek word that means to 'Siphon'. The most obvious sign of diabetes is excessive urination. Water passes through the body of a person with diabetes as if it were being siphoned from the mouth through the urinary system out of the body. Mellitus comes from a Latin word that means "sweet like honey". (Strukic, 1981) Diabetes mellitus refers to the group of diseases that lead to high blood glucose levels due to defects in either insulin secretion or insulin action. (Rother, 2007) Diabetes develops due to a diminished production of insulin (in type 1) or resistance to its effects (in type 2 and gestational). Both lead to hyperglycemia, which largely causes the acute signs of diabetes excessive urine production, resulting compensatory thirst and increased fluid intake, blurred vision, unexplained weight loss, lethargy, and changes in energy metabolism. Confidence in one's learning potential or ability to improve one's skill. (Robert S. Weinbergh and Deniel 5). Psychologists define self-confidence as the belief that one can successfully perform activity or desired behavior.

Statement of the Problem

The purpose of the study was to find out the impact of selected exercise programme on the psychological variable, the Self-confidence in Type II diabetic women. It was hypothesized that there would be significant improvement in self confidence due to the Yogic practices and the Brisk Walking than control group among Type II diabetic women.

Selection of subjects

For the present investigation ninety (90) women, with Type II diabetes were selected randomly from various hospital at Chennai. All the subjects were assigned to two experimental groups I & II and a control group, each group consisting of 30 subjects. Yogic practices and Brisk Walking were given to Group I and II for twelve weeks. No training was provided to group III.

Methods and Materials

Experimental group I was given Yogic practices at 6.00 am to 6.45am and experimental group II was given Brisk Walking Practices from 7.00 am to 7.45am for duration of Forty five Minutes from Monday to Friday (5 days a week) for 12 weeks. And the group III which is control group was not given any training. Initially they were tested for the level of Self Confidence. The standardized questionnaire by Rekha Agnihortry was used to measure this dependant variable, the Self Confidence. The Yogic Training, lasted for 45 minutes consisting of 5 minutes sitili.karana vyayama (loosening exercises), 9 minutes for suryanamaskar, followed by five asanas each lasting for 15 minutes (5 x 3 minutes), 8 minutes pranayama and 8 to 13 minutes relaxation. The Experimental group II were subjected to brisk walking for 45 minutes continuously without any rest. They underwent this training from Monday to Friday, five days per week. The experimental period was for 12 weeks. Proper warm up and cool down timings were given to the subjects during the experimental period. Every 4 weeks the duration of the training program was gradually increased and also the number of repetitions. The following trainings were given.

Weeks	Intensity	Duration
1 st to 4 th Week	50 – 60%	20 – 25 minutes
5 th to 8 th Week	60 – 70 %	25 – 30 minutes
8 th to 12 Week	70 – 80 %	30 – 35 minutes

Self confidence was assessed through the Agnihortry self confidence questionnaire developed by Rekha Agnihortry (1987) consisting of 52 questions. The subjects were asked to fill the questionnaire with two response alternatives viz., 'true' or 'false'. The questionnaire was translated from English to Tamil so that subjects can understand the statements to answer. For each item, a score of one is assigned for a response indicative of lack self confidence. Hence, lower the score, higher would be the level of self confidence and vice versa. The data obtained were analyzed by Analysis of Covariance (ANCOVA) to assess the significant difference among the groups between the pre test and post test on Self Confidence in order to find out the impact of selected exercise programme among diabetic women. The adjusted post test mean differences among the experimental groups were tested and since the adjusted post test result was significant the Scheffe's post hoc test was used to determine the significance of the paired means differences.

RESULTS AND DISCUSSIONS

The purpose of the study was to find out the impact of selected exercise programme on the psychological variable, the Self-confidence in Type II diabetic women. It was hypothesized that there would be significant improvement in self confidence due to the Yogic practices and the

Brisk Walking. The results on the impact of selected exercise programme on Self Confidence among type II diabetic women is presented in Table I

Table I. COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE OF SELF CONFIDENCE OF EXPERIMENTAL AND CONTROL GROUP
(Scores in Marks)

Test	Experimental Group – I (Varied Yogic Practices)	Experimental Group – II (Brisk Walking)	Control group	Source of variance	df	Sum of square	Mean square	F
Pre-test mean	21.13	21.23	20.43	Between	2	11.40	5.700	0.13
				Within	87	3758.20	43.20	
Post-test mean	28.67	26.73	21.10	Between	2	927.27	463.63	7.27
				Within	87	5549.23	63.78	
Adjusted mean	28.45	26.41	21.64	Between	2	731.92	365.96	26.13
				Within	86	1204.368	14.00	
Mean Gain	7.53	5.50	0.67					

Table value for df 2 and 87 was 3.1 Table value for df 2 and 86 was 3.103.

Table shows that the pre test mean scores of Self Confidence of Experimental group I Yogic practices was 21.13. Experimental Group II Brisk Walking was 21.23 and control group was 20.43. The post test means showed differences due to Twelve weeks of Yogic practices & Brisk Walking and mean values recorded were 28.67, 26.73 and 21.10 respectively.

The obtained F value on pre test score 0.13 was lesser than the required F value of 3.1 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The analysis of the post test scores proved that there was significant difference between the groups as the obtained F value at 7.27 was greater than the required F value at 3.1. This proved that the differences between the post test means were significant.

Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 26.13 was greater than the required F value at 3.1. This proved that there was significant difference among the means due to twelve weeks of Yogic practices & Brisk Walking on the psychological variable

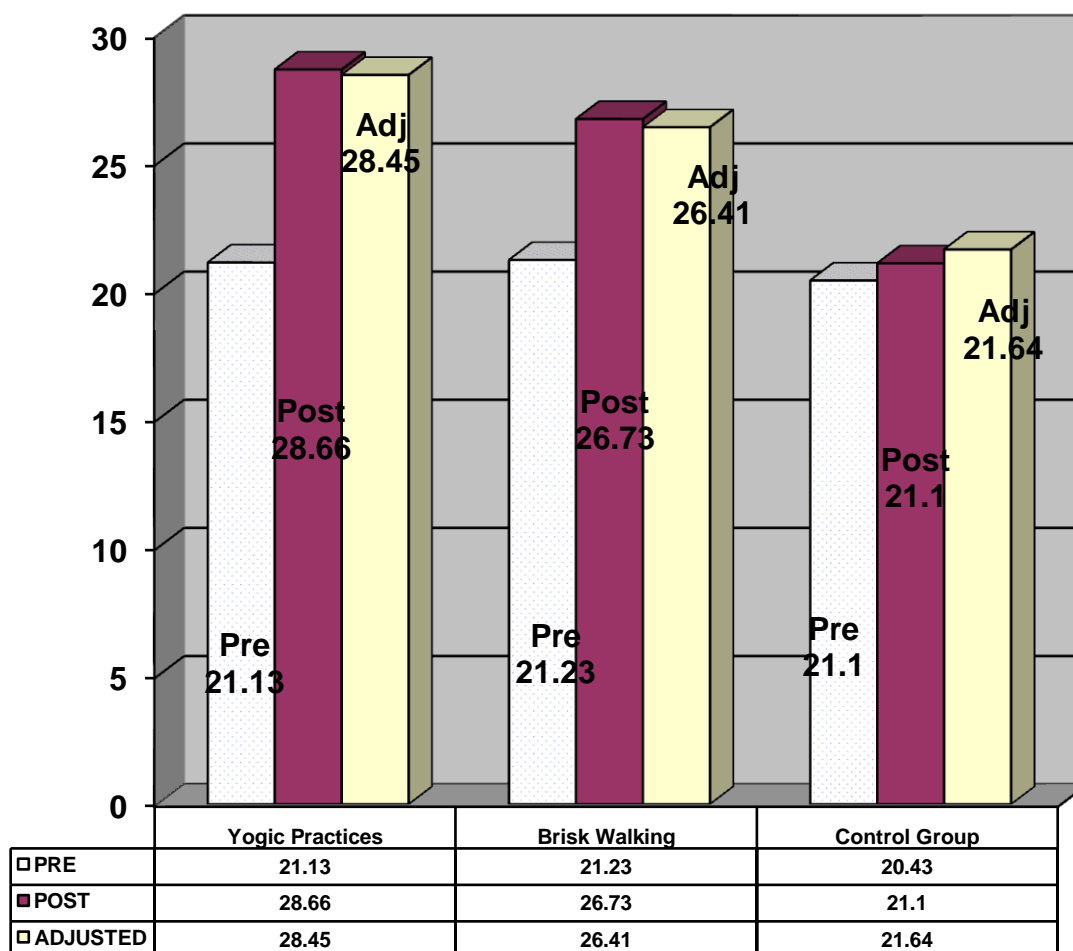
Self Confidence. Since significant improvement were recorded the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table II .

TABLE II- SCHEFFE'S POST-HOC TEST FOR SELF CONFIDENCE

Experimental Group – I (Varied Yogic Practices)	Experimental Group – II (Brisk Walking)	Control Group	Mean difference	Required C.I
28.45	26.41	-	2.04	2.41
28.45		21.64	6.81	2.41
-	26.41	21.64	4.77	2.41

Table II shows that there was significant difference between Yogic practices and control group and Brisk Walking group and control group and Yogic practices and Brisk Walking groups . The obtained adjusted mean values were presented through a bar diagram .

BAR DIAGRAM SHOWING PRE, POST AND ADJUSTED POST-TEST VALUES OF CONTROL GROUP, TWO EXPERIMENTAL GROUPS ON SELF CONFIDENCE



The results presented in table II showed that the obtained adjusted means on self confidence among Yogic practices group was 28.45 followed by Brisk Walking group with the mean value of 26.41 and control group mean value of 21.64. The difference among pre test scores Post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and F values obtained were 0.13, 7.27 and 26.13 respectively. It was found that obtained F value on pre test score was not significant at 0.05 level of confidence as the obtained value was lesser than the required table value and post test Scores was significant at 0.05 level of confidence as the value was greater than the required table F value of 3.1.

The post hoc analysis through Scheffe's confidence test proved that due to Twelve weeks treatment the Yogic practices group and Brisk Walking group showed significant improvement in self confidence than control group and the differences were significant at 0.05 level. The post

hoc analysis between the experimental groups namely Yogic practices group and Brisk Walking group proved that there was significant difference in Self Confidence accepting the research hypothesis and rejecting the null hypothesis. The result of this study on self confidence is in line with the study conducted by **Robin.,et al., S (2005)** increasing the authenticity of the results obtained .

REFERENCES

- Baxendale RH (1995), “The Lost Art of Walking”, Harbour Books, ISBN978-1-1905128-15.
- Clarke, Harrison H. and David H. Clarke, (1972) Advanced statistics, Englewood Cliffs, N.J: Prentice hall, Inc, pp.31-44.
- Davidson.G. C and Neal J.M (1990), “Abnormal Psychology”, (5th Ed.),Published by John Wiley & Sons , New York,pp1
- Lee Im, Rexrode EX,Cook NR.Manson JE and Buring JE (2001), Physical activity and coronary heart disease in women: is “no pain, no gain:passé”? Journal of the American Medical Association, 285:pp.1447-1454.
- Robert S.Weinbergh and Daniel Gould (1995), “Foundations of Sport an Exercise Psychology”, United States: Human Kinetics ,pp” 302.
- Robin Wittemoer ,Gail D’Eramo Meikus and Margaret Grey (2005)’ “Metabolic control, self – management and psyho social adjustment in women with type 2 diabetes”, Journal of Clinical Nursing., 14 (2): pp 195-203
- Rother KL (April 2007) . “Diabetes treatment –Bridging the divide” , The New England Journal of Medicine ,356 (15): pp.1499-1501.
- Strukic PJ (1981), “Basic Physiology”, New York: Spring Erviellong, Inc., pp186.
- and remaining needs.” Medscape J Med. 26;10 Suppl:S3.



“RETROSPECTION OF POST – GRADUATE SYLLABUS OF PHYSICAL EDUCATION IN THE UNIVERSITIES IN TELANGANA”

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ABSTRACT

Curriculum of any course plays an important role in the achievement of the aim and objectives of the course in general and of education in particular. The syllabus should be framed carefully so that current trends can be included to enable the beneficiary students to cope with the demand of the timely updated profession. Unfortunately the syllabuses in Physical Education not only Telangana but also in the whole country is heterogeneous. Efforts were made at both National and State level to have a common syllabus of Physical Education in all the Indian Universities offering M.P.Ed. degree, but in vein. Universities in a particular state also have different syllabuses, which is not a good sign of professional competency and progress. It was therefore the purpose of the study to study the syllabus of Physical Education at Post-Graduate level in the universities of Telangana. For this the syllabus of all the eight universities where M.P.Ed. Course is conducted were collected and analysed considering some leading institutions/universities syllabuses. The Syllabus of NET Bureau and LNIPE were also considered. An Opinionnaire was served to 40 experts including some students who have qualified the UGC NET examinations. From the analysis of the collected data it was concluded that the syllabus of Osmania University is suitable for UGC-NET examinations and each student is benefited equally irrespective of his/her group and it will be easier to clear UGC – NET examination for the M.P.Ed. Students passing from Osmania University; Considering the changes in the UGC-NET syllabus there is a need of revising the syllabus of Osmania University

periodically; Offering only one specialization out of Four Groups prevents the students to cover the NET syllabus of UGC. Practical classes should be made compulsory as it is the vital organ of the system. Current topics like Fundamentals of Computer Application, IT, Managerial Skills and Soft Skills should be included in its syllabus since it is the need of the hour. In addition subjects like Kinesiology, Kinanthropometric, Sports Physiotherapy, Sport Sociology etc. should be included in the M.P.Ed. Syllabus of Osmania University; some outdated topics in the syllabus of Osmania University which should be eliminated; and specialization in any two games including athletics must be there in every M.P.Ed. course and must be a paper of examination. Students offering Sports Medicine should be take practice lessons in Advance coaching and they should be examined. Regular practical classes should be conducted in the Sports laboratory on the topics related to Sports Medicine and Sports Psychology.

KEYWORDS: *M.P.Ed. Students, Managerial Skills, Soft Skills, Kinesiology, Sports Physiotherapy, Sports Medicine, Sports Psychology & Sociology.*

INTRODUCTION:

The curriculum of M.P.Ed. Course plays an important role in the achievement of the aim and objective of the education in general and of physical education in particular. The syllabus should be framed carefully so that current trends like managerial skills, soft skills, information technology skills can be included to enable the beneficiary students to cope with the demands of the timely updated profession.

Unfortunately the syllabuses in Physical Education not only Telangana but also in the whole country is heterogeneous. Efforts were made at both National and State level to have a common syllabus of Physical Education in all the Indian Universities offering M.P.Ed. degree, but in vein. Universities in a particular state also have different syllabuses, which is not good sign of professional competency and progress. It was therefore the purpose of the study to evaluate the syllabus of Physical Education at Post-Graduate level in the universities of Telangana.

For this the syllabus of all the eight universities where M.P.Ed. Course is conducted were collected and analysed considering some leading institutions/universities syllabuses. The syllabus of NET Bureau and LNIPE were also considered. An Opinionative was served to 40 experts including some students who have qualified the UGC NET examinations.

The opinionnaire was having 24 statements which is given in Appendix-1. The data collected in Likert form were analysed by using test. The necessary interpretation is made and given below:

Table No. – 1

**Showing Agreement/Responses In Different Five Categories To Forty Different Statements
Pertaining To Syllabus Of Osmania University:**

	S A	Cell- χ^2	A	Cell- χ^2	U	Cell- χ^2	D	Cell- χ^2	SD	Cell- χ^2	Total- χ^2
Statement-1	4	32.40	20	10.00	2	36.10	8	25.60	6	28.90	133.00
Statement-2	5	30.63	20	10.00	2	36.10	7	27.23	6	28.90	132.85
Statement-3	0	40.00	3	34.23	0	40.00	25	5.63	12	19.60	139.45
Statement-4	0	40.00	6	28.90	11	21.03	22	8.10	1	38.03	136.05
Statement-5	0	40.00	6	28.90	7	27.23	5	30.63	22	8.10	134.85
Statement-6	1 9	11.03	5	30.63	2	36.10	8	25.60	6	28.90	132.25
Statement-7	0	40.00	7	27.23	0	40.00	8	25.60	25	5.63	138.45
Statement-8	0	40.00	5	30.63	1	38.03	9	24.03	25	5.63	138.30
Statement-9	1	38.03	0	40.00	1	38.03	9	24.03	29	3.03	143.10
Statement-10	1 9	11.03	1	38.03	10	22.50	3	34.23	7	27.23	133.00
Statement-11	0	40.00	0	40.00	1	38.03	10	22.50	29	3.03	143.55
Statement-12	1	38.03	2	36.10	1	38.03	22	8.10	14	16.90	137.15
Statement-13	1	38.03	22	8.10	2	36.10	14	16.90	1	38.03	137.15
Statement-14	0	40.00	3	34.23	1	38.03	10	22.50	26	4.90	139.65
Statement-15	1	38.03	6	28.90	4	32.40	8	25.60	21	9.03	133.95
Statement-16	2	36.10	2	36.10	5	30.63	12	19.60	19	11.03	133.45
Statement-17	0	40.00	6	28.90	6	28.90	7	27.23	21	9.03	134.05
Statement-18	0	40.00	3	34.23	1	38.03	5	30.63	31	2.03	144.90
Statement-19	1	38.03	2	36.10	0	40.00	20	10.00	17	13.23	137.35
Statement-20	0	40.00	3	34.23	1	38.03	8	25.60	28	3.60	141.45
Statement-21	0	40.00	3	34.23	0	40.00	5	30.63	32	1.60	146.45
Statement-22	0	40.00	3	34.23	0	40.00	9	24.03	28	3.60	141.85
Statement-23	2	36.10	4	32.40	0	40.00	4	32.40	30	2.50	143.40
Statement-24	1	38.03	2	36.10	1	38.03	5	30.63	31	2.03h	144.80

χ^2 at 4 df and 0.05 level of significance is 9.488.

SA= Strongly Agree, A=Agree, U= Undecided, D=Disagree, SD=Strongly Disagree.

From the analysis of the data given in the above table is crystal clear that the χ^2 for all the 40 statements is greater than the required value of 9.488. Hence it was concluded that the agreement of the experts to different five categories differ significantly. The obtained frequencies of the statements are shown graphically in Figure No.

CONCLUSIONS AND RECOMMENDATIONS:

After the statistically analysis of the data it was found that:

- i. The syllabus of Osmania University is suitable for UGC-NET examinations and each student is benefited equally irrespective of his/her group and it will be easier to clear UGC-NET examination for the M.P.Ed. Students passing from Osmania University. Considering the changes in the UGC-NET syllabus there is a need of revising the syllabus of Osmania University periodically.
- ii. Offering only one specialization out of Four Groups prevents the students to cover the NET syllabus of UGC. Practical classes should be made compulsory as it is the vital organ of the system. Current topics like Fundamentals of Computer Application, IT, Managerial Skills and Soft Skills should be included in its syllabus since it is the need of the hour. In addition subjects like Kinesiology, Kin anthropometric, Sports Physiotherapy, Sports Sociology etc. should be included in the M.P.Ed. Syllabus of Osmania University. Some outdated topics in the syllabus of Osmania University which should be eliminated.
- iii. Specialization in any two games including athletics must be there in every M.P.Ed. course and must be a paper of examination. Students offering Sports Medicine should take practice lessons on Advance Coaching and they should be examined. Regular practical classes should be conducted in the Sports laboratory on the topics related to Sports Medicine and Sports Psychology.

Appendix – I

Showing The Statements Put Before The Experts For Opinion Pertaining To The Study:

- M.P.Ed. Syllabus of Osmania University covers almost all areas of UGC-NET syllabus and each student is benefited equally irrespective of his/her group.
- It will be easier to clear UGC-NET examination for the M.P.Ed. students passing from Osmania University.
- Considering the UGC-NET syllabus there is a need of revising the syllabus of Osmania University.
- M.P.Ed. Syllabus of Osmania University is comparatively more suitable than those of other universities of Telangana.
- Offering only one out of Four Groups prevents the students to cover the NET syllabus of UGC.
- M.P.Ed. Syllabus of Osmania University is an ideal syllabus which covers both theory as well as practical.
- Osmania University should update its M.P.Ed. syllabus immediately as its has not included many of the new aspects of Physical Education.
- Osmania University should seek the expertise knowledge/experiences of staff working in other universities of the State/Country.

- Osmania University should include Fundamentals of Computer Application in its syllabus since it is the need of the hour.
- Osmania University syllabus makes its students self employed as the students of Engineering & Medicine can do in case of unemployment.
- Subjects like Kinesiology, Kin anthropometric, Sports Physiotherapy, Sports Sociology etc. should be included in the M.P.Ed. Syllabus of Osmania University.
- Universities should adopt the UG-NET syllabus without any hesitation.
- M.P.Ed. Syllabus of Osmania University covers all those subjects which are necessary for an ideal teacher.
- There are some outdated topics in the syllabus of Osmania University which should be eliminated.
- Osmania University offers specialization in four groups viz. Professional Preparation, Sports Psychology, Sports Medicine and Yoga. The students can opt for any one. This prevents them to learn other three groups.
- Some portions of Unit-I in Paper-I of Professional Preparation group are repeated in its Unit-V of Paper-IV.
- The course contents of Unit-I and II of Paper-I of Sports Medicine group seems to be below standard.
- There should be a uniform syllabus of Physical Education at all India basis.
- While preparing the curriculum for M.P.Ed. proper attention should be given towards physical fitness.
- Equal weight age should be given to both theory as well as practical.
- There should be regular ground practical in every M.P.Ed. course and must be a paper of examination in Sports Skill.
- Specialization in any two games including athletics must be there in every M.P.Ed. Course and must be a paper of examination.
- Students offering Sports Medicine should take practice lessons on Advance Coaching and they should be examined.
- Regular practical classes should be conducted in the Sports laboratory on the topics related to Sports Medicine and Sports Psychology.

REFERENCES:

- **Aggarwal. J.C.** Curriculum Reforms In India, New Delhi: Anil Publishers Pvt. Ltd., 1990.
- **Asnare, A.M.**, “Analytical Study of Bachelor of Physical Education and Bachelor Education”, Unpublished Master’s Thesis, Amravati University, 1992.
- **David Kirk**, Physical Education Curriculum Study A Critical Introduction, Australia: Croom Helm Pvt., 1988.
- **Kalra, R.M.**, Curriculum Construction for Youth Development, New Delhi: Sterling Publishers, Pvt. Ltd., 1987.
- **Ravi Shankar**, Curriculum Development and Educational Technology, New Delhi: Sterling Publishers Pvt. Ltd., 1984.
- **Vashist, S.K.** Perspectives in Curriculum Development, New Delhi: Amol Publication, 1993.



ANALYSIS OF PHYSICAL FITNESS VARIABLES BETWEEN URBAN AND RURAL SCHOOL BOYS

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ABSTRACT

In the present study, an attempt has been made to compare physical fitness components namely abdominal strength and cardiovascular endurance between male students belonging to rural and urban set-ups. The study was carried out on 40 male students, with 20 rural and 20 urban and their age is range from 14 to 19 years. The Harvard Step Test and bend knee sit-ups was used to collect the required data. Independent t-test was used to analysis physical fitness variable between urban and rural school boys. The results indicated that the cardio vascular endurance and abdominal strength of rural students were significantly better ($p > .05$) than urban students.

KEYWORDS: *Physical Fitness, Urban, Rural, Cardio Vascular Endurance, Abdominal Muscular Strength*

INTRODUCTION

Physical education is an educational course taken during primary and secondary education and it provides with both theoretical and practical activity which are accompanied by physical exercises or skill development. The aim of this practical field is to produce students physical, mentally, emotionally and socially fit citizen through the medium of physical activity that have been selected with the view of realizing this outcomes.

Physical activity is an essential component of a healthy lifestyle. In combination with healthy eating, it can help prevent a range of chronic diseases, including heart disease, cancer, and stroke, the three leading causes of death, thus we can say that good fitness level have less heart disease risk than those with low fitness. Compared with inactive, people moderately or vigorously active people are less likely to suffer premature all-cause mortality; cardiovascular diseases (CVD) such as coronary heart disease (CHD), stroke, and high blood pressure; colon cancer; non-insulin dependent diabetes mellitus (NIDDM); and osteoarthritis (USDHHS, 1996). Risk factors for these diseases can begin early in life and be mitigated early in life by adopting regular physical activity habits. Physical activity helps control weight, builds lean muscle, reduces fat, and contributes to a healthy functioning cardiovascular system, hormonal regulatory system, and immune system; promotes strong bone, muscle and joint development; and decreases the risk of obesity. Research has also found that physical activity is related to improvements in mental health, helping to relieve symptoms of depression and anxiety and increase self-esteem. In addition, some studies show that physical activity is correlated with improved academic achievement.

Concept of physical fitness is as old as humankind. Throughout the history of mankind physical fitness has been considered an essential element of everyday life. The ancient people were mainly dependent upon their individual strength, vigor and vitality for physical survival. This involved mastery of some basic skill like strength, speed, endurance, agility for running, jumping, climbing and other skills employed in hunting for their livings. All-round fitness is a key to quality of life. Physical fitness is generally considered to be “the ability to perform daily tasks without fatigue”. It includes several components: cardio vascular endurance, abdominal muscular strength, flexibility, coordination, and speed.

Cardio vascular endurance

Cardiovascular endurance – the ability of the heart to provide oxygen to muscle during physical activity for a prolonged period of time”. Cardiovascular endurance is the most important aspect of fitness. It is basically how strong your heart is, which can potentially add years to your life, the heart is the most important muscle in the human body and if it is kept healthy then you can avoid numerous health problems. Another reason that Cardiovascular endurance is important is because our heart controls the oxygen flow to all our muscle _ meaning Cardiovascular health has a direct impact on our performance, both endurance and strength wise.

Abdominal muscular strength

When we exercise, many of us concentrate upon arms or legs or agility or cardiovascular workouts. But abdominal muscle are (quit literally) at the core of our bodies. They provide the stability to perform other exercise; yet many times abdominal exercises are neglected or given short shrift. We all recognize that abdominal exercise can be somewhat repetitive; however, there are methods to vary the exercises, and not only will the exercise of abdominals enhance our

appearance, but they are effective in reducing the risk of incurring back pain. A physically fit person looks better, feels better and thinks better and so lives better. Likewise, physical fitness is closely associated with good health.

Studies state that participation in physical activity during childhood can aid the development of motor abilities and lay the foundation for good health, especially cardiovascular health. Although some studies have shown that the physical fitness levels of children, in general, are not sufficient to promote optimal health, the health related benefits of physical activity are well known. For example, regular physical activity decreases the risk of health problems, such as coronary heart disease, hypertension, and obesity. Participation in physical activity and sport can also promote social well-being, as well as mental health, among children and adolescents. The results from fitness assessments can serve a variety of purposes. For example some studies revealed that, results from fitness tests can be utilized by teachers to increase the effectiveness of fitness activities that have been incorporated into the physical education program over a period of time.

METHODOLOGY

A total of 40 male school going students of 14-17 years were randomly selected as sample. The sample consisted of 20 urban and 20 rural students drawn from Kendra Vidyalaya School Leh and government higher secondary school Bogdang, no consideration was shown to subject's participation or any other characteristics or attributes. The data were collected with the assistance of Physical Education teacher of concerned school. The variables selected for the test were bend knee sit ups for abdominal strength and Harvard step test for cardiovascular endurance. Before conducting the test, the purpose of the study were explained to the students. They were given sufficient time for warming up and get ready themselves for testing.

Statistical techniques

Descriptive statistics was used to characterize the analyzed the selected physical fitness variables between urban and rural school boys. Independent 't'-test was used to analyzed abdominal strength and cardiovascular endurance variable between urban and rural school boys.

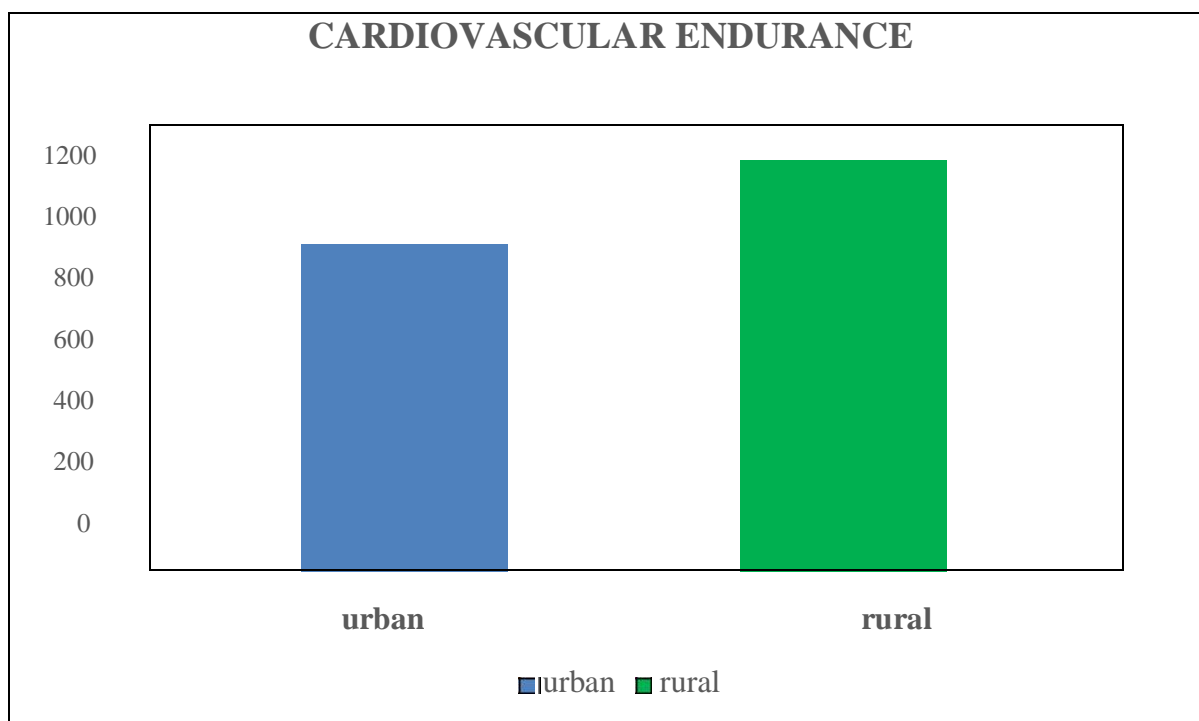
The collected data were subjected to the mean, standard deviation, standard error of mean of the difference between the mean and 't' ratio was calculated to find out the significance between the rural and urban students was tested at 0.05 level of significance.

Descriptive Statistics of the Cardio- vascular endurance (N=20)

Group	N	Mean	S.D	S.E	M.D	't'
Urban	20	872.50	227.963	50.974	225.000	3.677
Rural	20	1097.50	180.988	40.470		

Significant at 0.05 level of confidence

The table value at 0.05 levels with the 38 degrees of freedom is 2.01. It may be seen from the above table that there is a significant difference in on Cardio- vascular endurance between rural and urban school boys, since the calculated value 3.677 is higher than the table value i.e., 2.01 at 0.05 level of confidence.

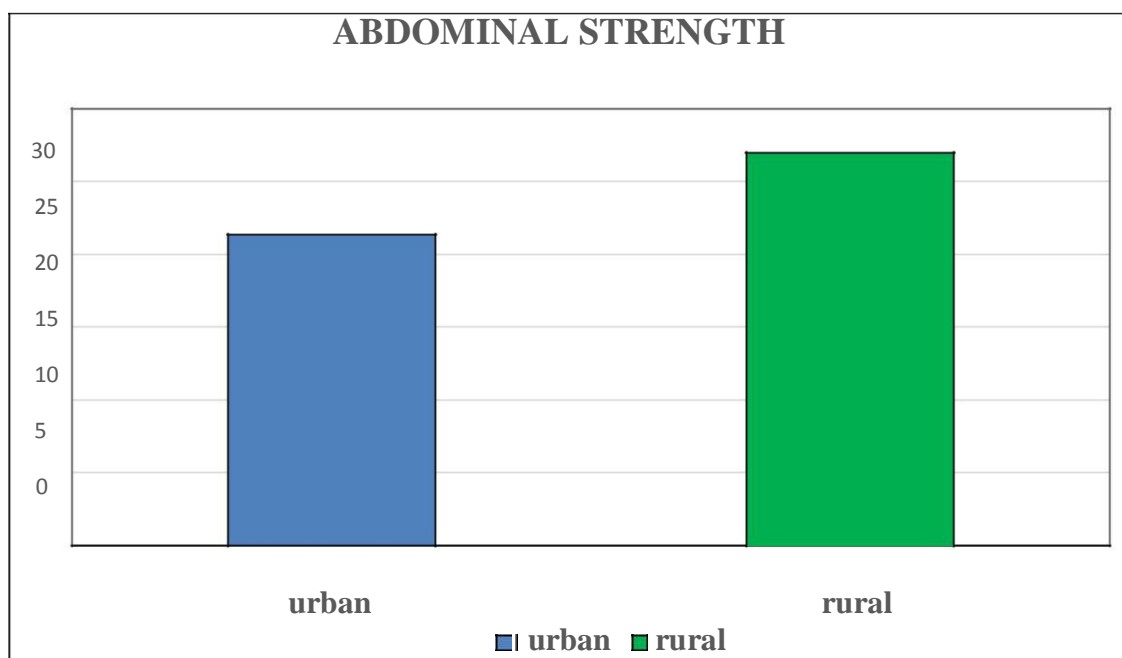


Descriptive Statistics of the Abdominal Strength (N=20)

Group	N	Mean	S.D	S.E	M.D	't'
Urban	20	21.35	2.368	.530	5.650	4.325
Rural	20	27.00	5.341	1.194		

Significant at 0.05 level of confidence

The table value at 0.05 levels with the 38 degrees of freedom is 2.01. It may be seen from the above table that there is a significant difference on abdominal strength between rural and urban school boys, since the calculated value 4.325 is higher than the table value i.e., 2.01 at 0.05 level of confidence



DISCUSSION ON FINDINGS

The results of the 't' value showed significant differences in cardio vascular endurance and abdominal strength components between rural and urban male students, where rural male students were found superior than their counterparts. These result would be due to the sedentary life style, eating habits and lack of physical activities of the urban boys who enjoys good luxuries life style and they goes to school by buses and with personal bikes. Sandhu (1983) compared rural and urban students of Amritsar district and the result were similar. Tsimeas and Tsigilis (2005) conducted a study on Greek rural students to find out "Does living in urban or rural settings effect aspects of physical fitness in children". A similar type of results were obtained in the work of Mehtap and Nihal (2005) who conducted a study on physical fitness in rural children compared with urban children in Turkey and found that children living in the urban areas were more inactive and obese than rural children. On the other hand mechanization, automation and computerization have minimized the opportunities for vigorous physical activities to cause physical exertion in urban population.

CONCLUSION

Within the limits and limitation of the study, it was concluded that rural students are significantly more fit than the urban students. Rural male students are superior to urban male students in abdominal strength and cardio vascular endurance. This shows that regular energetic activity produces physical fitness improvements. Village life style is more active in nature than the life in urban areas which produced high level of physical and functioning in rural residents.

REFERENCE

Uppal.A.K.2004. Physical Fitness and Wellness New Delhi: Friends Publications.Karmarkar.A..K 2004 Vyayam—Vidyan. Amravati. A Hanuman Vyamyam Prasarak Mandal Publication. Maite Pellicer-Chenoll, Health Education Research, Volume 30, Issue 3, 1 June 2015, Pages 436–448 Tan CheeHian, Procedia - Social and Behavioral Sciences Volume 90, 10 October 2013, Pages 847-852



INFRASTRUCTURE OF SPECIAL EDUCATION SCHOOLS: TEACHERS' VIEWPOINT

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ABSTRACT

The concept of teachers' viewpoint on infrastructure of special education schools is very suitable theme and need of the hour in today's context. India is a developing country where as per Census 2011, out of the 121 Cr populations, about 2.68 Cr persons are with disabilities which are 2.21% of the total population{Disabled persons in India--a statistical Profile}. Provide special assistance for person with disabilities, accessibility in all aspects of life, safety, controlled and fruitful learning process, we need to create favorable continuity in the surroundings and in educational provisions as well. Therefore, the precise infrastructures, such as barrier free access to the educational campus, a comfortable classroom environment and accurate safety measures are must for facilitating healthy teaching and learning process in view of inclusion. Good access also benefits others; including parents of young children in strollers; people with momentary illness of injury; old aged people; delivery people and customers with heavyweight or trolleys. {The Human Rights and Equal Opportunity Commission Act, 1986 (HREOC)} is often asked if it can certify or approve buildings and services as providing access at a level that would be comfortable with the law. In conclusion, the integration of special education needs much improvement in the field of accessibility so that the right of children with disabilities to have education without any discrimination can be given with actual dignity. Therefore, the vital development of infrastructure of special education schools should be made possible under certified standards. In this view, this study would throw light to understand clearly the need, importance and execution of good infrastructure of special education schools.

KEYWORDS: *Accessibility, Educational Provision, Infrastructure, Dignity*

INTRODUCTION

Schools are considered to be the second home, take care of all the purposes in a child's life. From the school, the children learn the importance of life style and develop a skillful behavior to continue their lives in the society. Schools help to do it all. Away from home, schools become the place for children to spend their maximum time. According to Goldsmith & Goldsmith (1998), to provide children with special needs with comfortable, safe, and controlled learning, it is important to create continuity in the environment so that they would have equal access to education like other normal students. With the awareness of integration, separating students with special needs for learning is considered unsuitable. According to Gargiulo {2006}, the place where a student receives the education problem will actually affect the attitudes, achievement, and social development. Thus basic needs, such as barrier-free facilities, comfortable classroom, and safety measures, shall be taken into account for purpose of teaching and learning.

The implementation of RTE Act is ensuring creation of the school infrastructure facility as specified in the Schedule of the RTE Act, which in turn would be the creation of Social Infrastructure. The infrastructure facilities that are to be provided as per RTE entitlements are as shown in the following table -

Components pertaining to Infrastructure Facilities as per RTE Act (2009) norms:

All-weather building

- (i) At least one class-room for every teacher An office-cum-store-cum-Head teacher's room
- (ii) Barrier- free access (Ramps, handrails)
- (iii) Separate toilets for boys and girls
- (iv) Safe and adequate drinking water facility to all children
- (v) A kitchen where mid-day meal is cooked in the school
- (vi) Play ground
- (vii) Arrangements for securing the school building by boundary wall or fencing

1. Physical &infrastructural facilities in special schools

It is the responsibility of school to provide education which contains a series of actions and events. The existing method of these activities and events depends mainly upon the availability of proper physical & infrastructural facilities in the school. It is very important for a school to create a comfortable environment for students which not only encourages for learning, but also creates a place of mental and physical welfare of every student. With the school infrastructure facilities have created a positive effect on students, to look at the school as a place for learning better knowledge. It is referred to buildings, classrooms, playground, furniture and device along with equipment for providing better education. We must have the following physical infrastructure for a good school.

1.1 School Building

First and foremost, we should select a safety and healthy location for the school building. The school building should be well-planned with all facilities required for comfortable stay of students. Classroom facilities required to be are: textured ground floor, ramp, lift or elevator facility that accommodates a wheelchair with the care taker. A school should be built with various essential facilities like well-equipped labs, resource room, halls, open fields, accurate games equipment, dormitories, art and craft workshops, playgrounds, assembly area, multimedia rooms and sanitation facilities. There should be provisions for transportation and parking of personal vehicles like scooters and bicycles / tricycles. Foot pathway to school building should be wide enough for wheel chair users. There would be tactile warning tiles for crossing, secure Street with concrete or linked tiles, nonskid surface with kerb slope supported. No obstacles or hazardous materials should be there on the roadway.

1.2 Classrooms

The Classrooms should be large, well-ventilated, proper lighting and air circulation must be maintained. The classroom should be barrier-free, wheelchair access, a comfortable and safety measure should be taken care for purpose of teaching and learning. The door of the classrooms should be with long lever handles easy to work with for closing and opening. The furniture for students should not be fixed on place. With the help of special educators, appropriate study material, proper equipment and multiple technologies, students with special needs will be shaped as responsible citizens by equipping with knowledge, wisdom and moral and human values from the classroom.

1.3 Staff room and administrative block

There should be a well-equipped staffroom, where teachers can prepare for their lessons, do modifications and cooperate with each other. This room should be spacious enough and also have lockers where they can safeguard their teaching learning materials, books and personal belongings. The school authority should also create special provisions for the administrative block. And make sure that it should be easily accessible to students, teachers and visitors.

1.4 Library

Library is an addition of a school physical infrastructure where students, staff, and often, parents of a school can acquire knowledge from the resources. The library is a necessary element of a good school. The library should be barrier-free, wheelchair accessible, light, airy, quiet, clam and neat-tidy, where books and other resources can provide a collaborative environment for learning.

1.5 Playground

The playground should be well equipped and maintained with ultimate care. Sports and games always play a vital role in health condition of a child. To the extent possible it will keep the children with disabilities always fit for life. So, definitely the school authority should provide facilities for both indoor and outdoor games. Playgrounds are not just meant for developing physical fitness and strength, but also should give an opportunity to develop social skills, thinking and problem solving skills. The playground should have ramp pathway for the children with locomotors impairments for play and developing social skills. There should be rest benches at accessible heights for resting in between play for transfer and back.

1.6 Therapy Units

In a special school set-up there must be a unit of therapy, which must include physiotherapy, occupational therapy, speech, & language therapy, music & dance therapy and behavior modification unit. Each room should be equipped with required equipment and furniture. It should be directly accessible from the space, with outward-opening doors. Therapy units should be always supportive towards health care and children's access to education.

1.7 Accessible Toilets

In a special school there must be a provision for accessible toilet designed for children with physical disabilities. The toilet must be wide enough to enter the wheelchair users easily. Accessible toilets are specially intended to meet the purpose of the Pwds without any difficulties. Common modifications include: adding a raised toilet seat, attaching a versa frame, and make sure the toilet paper is within reach and can be separated with one hand. Specially equipped hygiene rooms for changing and showering some children with severe physical or profound and multiple disabilities should be taken into consideration.

CONCLUSION

In order to cultivate interest and student enthusiasm in process of learning, the school must provide suitable and accessible infrastructure facilities to cater to the needs of all students. The school provides physical facilities such as classrooms, library, resource room, therapy units, toilets and playground with the substance of standards. So, we need to improve the quality of classroom infrastructure and other facilities in the school management of special education program wherein, continuous effort and assurance from all parties is highly required. The teachers also need to look into the skills and knowledge in approaching, guiding and managing the classroom as well as infrastructure facilities for students with special needs.

REFERENCE

1. Earthman, G.I. 2002. School Facility Conditions and Student Academic Achievement. Los Angeles: UCLA Institute for Democracy, Education, & Access.
2. Neilson, C. A., and Zimmerman, S. D. 2014. The effect of school construction on test scores, school enrollment, and home prices. *Journal of Public Economics*, 120, 18-31.
3. Theunynck, S. 2009. School Construction Strategies for Universal Primary Education in Africa: Should Communities Be Empowered to Build Their Schools? Washington, DC: The World Bank.
4. UNESCO Institute of Statistics. 2012. A Place to Learn: Lessons from Research on Learning Environments. Montreal: UNESCO Institute for Statistics.
5. UNICEF. 2009. Child Friendly Schools: Manual. New York: UNICEF.
6. WHO. Accessed 2015. The Physical School Environment: An Essential Component of a Health-Promoting School. The World Health Organization.
7. Earthman, G.I. 2002. School Facility Conditions and Student Academic Achievement. Los Angeles: UCLA Institute for Democracy, Education, & Access.
8. Neilson, C. A., and Zimmerman, S. D. 2014. The effect of school construction on test scores, school enrollment, and home prices. *Journal of Public Economics*, 120, 18-31.

9. Theunynck, S. 2009. School Construction Strategies for Universal Primary Education in Africa: Should Communities Be Empowered to Build Their Schools? Washington, DC: The World Bank.
10. www.edsys.in/com-school-infrastructure-make-any-difference-to-students/
11. <https://www.Caf.com/en/>. The importance of – having. A good-school- infrastructure.
12. <https://learning-portal.iiep.unesco.org/en/improve-learning/schools/school-conditions>.



ENHANCING HUMAN CAPITAL THROUGH SPORTS, NUTRITION AND EDUCATION – THEORIES

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ABSTRACT

Human capital is a key factor for growth, development, and competitiveness for individuals, organizations and to the nation. A common man with, the best qualities, can turn to be a person of national importance easily. In this context, sports are one such area where sports have become more competent and commercial. The sports industry sector include several different segments such as sports tourism, sporting goods, sporting garments, advertisement & sponsors, promotions and the available opportunities in sporting management and sponsorship. Human capital theory stresses on the importance of education and how it increases the productivity and efficiency of the workers and the human capability. Every effort taken to promote investment in human capital were seen to result in rapid economic growth of the society. Social sports as a return on investment reveals that sport and exercise prevent or reduce physical and mental health problems and save on health care costs. It is found evident that participation in sports improves positive behavior and develop an integral quality of belongingness to oneself and to the society. Undoubtedly, physical activity during childhood and adolescence leads to a happy, healthy and longer life. It is suggested that children and young people should build up at least 60 minutes of moderate intense physical activity every day but unfortunately, there is ample evidence that not all children and young people spend enough time for physical activities.

KEYWORDS: Competitiveness, Segments, Unfortunately, Undoubtedly

INTRODUCTION

Human capital refers to the skill and knowledge of human beings. It is the stock of competencies, interdisciplinary skills, attributes and the ability to perform labor. Such human resources that leads to productivity and economic value is human capital, bringing in both quantitative and qualitative measures around education, empowerment, and employment to create a holistic picture.

Human Capital Development

The Process of acquiring and increasing the number of person who have the skills, education and experience which are critical for the economic and political development of a country.

Need for enhancing human capital /strategies through various sector

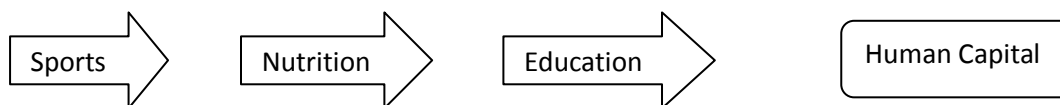
India has been placed at 103, the lowest among BRICS economies, on the Global Human Capital Index (2017), which has been topped by Norway, according to a list compiled by Geneva – bases World Economic Forum. India fared well on development of skills needed for the future with a rank of 65. The report measures 130 countries against four key human development factors likely Capacity - investment in education, deployment - accumulation of skills through work, Development – up skilling and reskilling of workers and know-how, specialized skills at work.

Improvement of Human capital through various sector

Human resources with diverse skills is the strength of the country and India's young population with rich talent pool can effectively contribute to a sustainable economic growth. Human capital is a key factor for growth, development, and competitiveness for individuals, organizations and to the nation. Learning and skills building enhances livelihood of the society and add meaning to living. Identifying skills that provide opportunities need to be studied, by which, technology and corporate innovation can foster a skilled talent pool. Educated population contributes towards positive social well being and for the development of the nation, therefore human capital needs to be closely noticed and the necessary measures need to be taken in order to increase the working population.

Productivity and Human resources are closely linked and the welfare measure for employees is the must factor for enhancing productivity which is the objective of the companies. Training, wellness, compensation, growth are the key motivating factors in scaling up the skills.

The holistic approach of enhancing human capital through sports, nutrition and Education



Influence of sports in enhancing human capital

Human capital is not obtained through storage of education alone, but it is also developed through various other ways. Many economists note that this kind of capital is intangible and its contribution in all groups at different stage gains its own expertise. In the present world where people get connected internationally, naturally, the identity of a person across the globe is quicker and faster. A common man with, the best qualities, can turn to be a person of national

importance easily. In this context, sports are one such area where sports have become more competent and commercial. Every sport event of its origin is gaining importance to that location by means of skill, competency, and uniqueness in the game and thereby attract people of other states nationally and internationally which in turn brings a better economic benefits to the community.

Sports is one of the largest industries worldwide in terms of generating employment and revenue. Organising sporting event attracts tourists internationally which promotes the ethnicity and values of the place, promotes industry of sports products and media industry. Sports entertain people of all ages and such organized international sports are a revenue to the country. Training of events is one such area where it draws more attention to children of all ages. As Rome was not built in a day, any success stories of a sportsman stand behind the untiring training taken for a longer period. Such training for youngsters to adult of all ages stands for fitness and be healthy. Coaching and training of a sport is another area for up skilling and for career opportunities.

Sports in a wider sense is resourceful to enrich our human capital as an opportunity for careers. People are the most important resources for the nation's economy.

Sports - expertise - identity - commercial- advertisement - entertainment - health - opportunities - employment - life

Increasing individual's participation in sports and exercise leads to the development of the economic policies, as engaging in sports and exercise can boost an individual's productivity by improving health and develop cognitive and non-cognitive skills - including self-discipline, stress management, and team work. Since these factors not only increase productivity but also influence individual success in the labor market resulting in substantial revenue and may thus constitute an important policy objective.

Social sports as a return on investment reveals that sport and exercise prevent or reduce physical and mental health problems and save on health care costs. It is found evident that participation in sports improves positive behavior and develop an integral quality of belongingness to oneself and to the society. It has positive effect on educational outcomes and social behavior. The identity in sports engages individuals to involve in social activities where the acceptance is natural.

Development of Sports as a profession though essential for improving human capital resources, for few, sports is taken as a prestige, as a remedy to overcome obesity, to overcome aging and be active. Undoubtedly, physical activity during childhood and adolescence leads to a happy, healthy and longer life. It is suggested that children and young people should build up at least 60 minutes of moderate intense physical activity every day but unfortunately, there is ample evidence that not all children and young people spend enough time for physical activities. Data shows that in most developing countries many children and young people are not meeting the required levels of physical activity and in turn leads to early diseases. Healthy living of all age group is essential for a productive development.

The sports industry sector include several different segments such as sports tourism, sporting goods, sporting garments, advertisement & sponsors, promotions and the available opportunities in sporting management and sponsorship. It is seen across the globe that sports as a full-fledged industry can and may contribute about 1 to 5 percent of the country's GDP.

Therefore the sporting culture has to be grown in wider prospects with various initiatives for the growth of the economy as recognized by the corporate for employment. Human capital is known as a combination of such factors as education, experience, academic studies, intelligence, energy, work habits, and initiative which influence value and marginal product of workers. As a result, human capital can simultaneously contain both concepts; that is, it can be a means of production and create a specific and endogenous value for the organization, as well. This inherently means a production for human capital.

Influence of Nutrition in enhancing human capital

Investment in human capital is associated with the economic development of the nation. Focus on nutrition and health accumulates human capital and drives to economic growth and social development. Health and Nutrition is on itself a human capital which helps in developing other forms of human capital, as healthy living increases the ability to take challenges and overcome the hurdles confidently in achieving the goals. Poor health does not drive people to challenges and reduces the productivity from the human capital.

Healthy living is determined by income and nature of work, climatic conditions, food habits, social factors, economic factors etc. which means diseases depress income and human capital.

For most people well-being is health and not income and for few to whom income is health sooner realizes health is essential for well being as no people prefer to suffer diseases.

Today the knowledge of healthy living is wide-spread with digital social interface. The consequences of bad nutrition reach every individual and it is also being considered. Such networking helps people to share on the prospects and consequences of good and bad health habits. Health knowledge is important and attraction towards packed instant food has no way reduced people's interest towards natural and naturally prepared food.

Implications of nutritious living - Every stage of life for a human is important to be healthy from childhood to adult. Being nutritious specifically in every step of the changes in growth physically, mentally, socially and on the responsibility to oneself, to others and to the society is essential.

The demography of the nations youth population is high and it is always considered as the strength of the country where the potential of the human capital is high which leads in accelerating productivity. The compelling factor of this rich youth population to be incremental in their productivity needs nutritional living.

Following nutritious health from childhood forms rich human capital. Time, health, nutrition, human capital, productivity are inseparable and closely connected for development. Sickness and ill health leads to mental agony and leads to life stress and thereby affects the progress. Nutrition and health brings happiness and a living which develops and embraces goodness and leads to a positive action and deeds. Sickness isolates persons from the group, limits socializing and facing people, income decreases and overcoming the sickness itself is a challenge.

Leading causes of deaths in India, cardiovascular disease has emerged as the top killer that has affected both urban and rural population. Cardiovascular deaths account for 24.8% of total deaths in the country. Primarily, the aged population is affected by this disorder and men are more affected than women. In rural areas, lack of proper medical facilities results in a higher number of deaths as many cases of health emergencies is not met with the medical care needed.

Patients with cardiovascular emergencies often die on the way to health care centers or hospitals as remote villages are usually located far-off from such facilities. 10.2% of the total deaths are caused due to asthma and respiratory disease in India due to exposure to allergens in the outdoor or indoor environment, smoking, genetics, and lifestyle.

Tuberculosis is an airborne disease showing 10.1% of total deaths, caused due to lack of proper nutrition often compromises the immune system of patients infected with the tuberculosis bacteria, making them more susceptible to such diseases. High rates of poverty, lack of clean living facilities, improper nutrition and lack of awareness about prevention and treatment of tuberculosis are primarily responsible for the high rates of this disease in the country.

Literacy and nutrition are closely connected and are the key determinants for better nutritional status, specifically the effective way to implement nutrition from agriculture, health, education, rural development is by improving the status of women. Devising policy interventions is essential to improve the nutritional status of the country. Nutrition is a multi sectoral issue and needs to be tackled at various levels. Nutrition affects development as much as development affects nutrition. It is therefore important to tackle the problem of nutrition both through direct nutrition interventions for specially vulnerable groups as well as through various development policy instruments which will create conditions for improved nutrition and more suc, the awareness of such policies has to be disseminated for improved human capital in every sectors.

Influence of Education in enhancing human capital

Human capital and education plays a vital role in the economic growth with enriched knowledge resources. Education is a major factor for knowledge which helps individuals to be independent, creative, participative and develop inter-personal skills leading to diverse opportunities and improve socializing constructively. For the development of any society, quality education is the key factor. Knowledge is one aspect that connects people globally. Being educated is not easier and it is not a product, it has to be embraced, nourished and disseminated for further knowledge exploration.

Knowledge in the global market is highly competitive and it improves the standard of living of any individual. For quality education, today knowledge seekers travel across the world unthinkingly..Such is the power of knowledge. The fundamentals of knowledge is always changing its face in the fast growing digital world and therefore the search for knowledge is continuous. For a nation's growth depends on the human capital and resourceful human capital eradicates poverty and build business eco system for the survival of all class of people. Human capital is concerned with the wholesome adoption of the policies of education and development. Human capital theory stresses on the importance of education and how it increases the productivity and efficiency of the workers and the human capability. Every effort taken to promote investment in human capital were seen to result in rapid economic growth of the society.

For education on its own self, if it has to survive innovation is essential. New approaches and practices and findings leads to new inventions, as knowledge is eternal. Studies have shown that improvements in education increase productivity and thereby contribute to the development of technology, in improving the human capital. Educational expenditures are treated as an investment that yields revenue.

Understanding India's age and literacy. In 1951, when first Census was conducted after Independence, the literacy rate of country was merely 18%. However, in the last Census held in 2011 India has achieved a literacy rate of around 73%. By the end of the 12th Plan period the national goal was to achieve 80 per cent literacy rate.

29.7 % estimates to population under 15 years of age, 64.9 % estimates to the age between 15 and 64 years and 5.5 % estimates to 65+ years. Of which 72.14% of adult population (aged 15 years and above) in India are able to read and write. Adult male population contributes 80.95% of literacy while female contributes to 62.84%. Youth literacy rates are 91.83% and 87.24% for males and females accordingly. The overall youth literacy rate is 89.65%. Youth literacy rate definition covers the population between the ages of 15 to 24 years.

India's northeastern state of Tripura achieved the first position in literacy with 94.65 per cent, beating Kerala. Arunachal Pradesh (66.95 per cent), is placed second-lowest in literacy in the country, just above Bihar, which recorded the least literacy of 63.82 per cent.

In states with high literacy rate, the growth of the economy accelerates according to the need of the society. Developing nations have thus realized that the basic mechanism for developing human knowledge is the education system. Thus, they invest huge sums of money on education, not only as an attempt to impart knowledge and skills to individuals, but also to impart values, ideas, attitudes and aspirations at the interest of the nations development.

Investment on development of sports, focus on the health and addressing on its issues and shouldering the responsibility of literacy to all, holistically will contribute to the growth of the human capital resources resulting in the economic development of the nation.

This article is a qualitative study to understand and provide an insight for any research. The literature review method was used by collecting study from relevant journals, books, researches, e-sources that are already made and published.

REFERENCES

<https://wol.iza.org/uploads/articles/129/pdfs/youth-sports-and-accumulation-of-human-capital.pdf>

The estimation data for section "India population literacy" is based on the latest data published by UNESCO Institute for Statistics (retrieved March 13, 2016)

Human Capital and Education: The State of the Art in the Economics of Education IZA DP No. 9885 April 2016 by Simon Burgess

Education and human capital development in the giants of Asia by Gavin Jones and Divya Ramchand

Malik, G. (2006). An examination of the relationship between health and economic growth. ICRIER.

Pradhan, R. P. (2009). Education and economic growth in India: Using error correction modeling. *International Journal of Finance and Economics*, 25, 139--147

<http://www.who.int/macrohealth/infocentre/advocacy/en/investinginhealth02052003.pdf>



A MULTI DIMENSIONAL APPROACH FOR TALENT IDENTIFICATION AND DEVELOPMENT IN SPORTS

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ABSTRACT

The talent identification and development programmes have gained popularity in sports research. There is no uniformly accepted theoretical framework to guide how the talent should be identified in current practice. The success rates of talent identification and development programmes have rarely been assessed. The validity of the current models and practices are highly debated. This article provides a review of current literature in this area with analyzing the problems associated with the identification talents for high performance in sports. A theoretical framework that is formulated from an interaction of key factors such as psycho behavioral characteristics, motor abilities, and physical characteristics considers sport talent identification and development for higher level is presented.

KEYWORDS: *Talent Identification, Sports*

INTRODUCTION

Identifying talent in athletes and developing that ability for the highest performance is the main issue of sport scientists, coaches and policy makers. The existing concepts of talent have mainly focused on genetically driven variables. The success rates of talent identification and development programmes have rarely assessed. This article provides an indication of current knowledge in this area with special focus on problems associated with the identification of gifted athletes. In conclusion, talent therefore appears to depend on genetics, environment, opportunity, encouragement, and the effect of these variables on physical and psychological traits. A theoretical framework that is formulated from an interaction of key factors such as psycho behavioral characteristics, motor abilities, and physical characteristics considers sport talent identification and development for higher level is presented.

Genetics and success

As early as the 1920s, researchers were examining the potential of anthropometric and physiological measures as discriminating factors between athletes involved in different sporting events. The traits measured was wide-ranging, from age, height, and weight to more extensive studies containing many anthropometric measurements, somato typing, and tissue analysis. Anthropometrical and physical parameters have been found to discriminate among successful athletes in different sports. However, work with preadolescent athletes (Bloomfield et al., 1985; Blanks by, Bloomfield, Ponchard and Ackl and, 1990; Regnier & Salmela, 1987) has demonstrated clearly that the identification of talented performers is not possible by anthropometrical and physical measures before the adolescent growth period due to their instability.

Fundamental movement skills

Participation in sport requires performing a wide range of different movements. Many of these movements are complex, specialized skills used in specific physical activities. These basic movements, which are common to a range of activities, are known as fundamental motor abilities. Fundamental motor abilities can be divided into three broad categories: travelling, object control and balance (Jess, 1999a). The development of these fundamental movement skills are seen as the 'building blocks' for future successful performance and involvement in more specialized sports and games.

Psychological determinants of excellence

Recent research has established mental characteristics as crucial to elite performance (McCaffrey & Orlick, 1989; Orlick & Partington, 1988). The identified psychological characteristics are commitment, quality practice, goal setting, and imagery, planning at all levels, distraction control strategies, perceptions of pressure and performance evaluation.

Skill Acquisition Determinants

There are many psychological factors would influence the athlete who have the potential to acquire skills. The development of effective talent identification processes is also dependent on factors that influence successful skills acquisition. A variety of psychological factors would appear to characterize athletes who have the potential to acquire and consolidate skills. Kunst and Florescu (1971) highlighted the different importance of psychological capacity, motor capacity and biometric qualities to determinants of performance and determinants of talent.

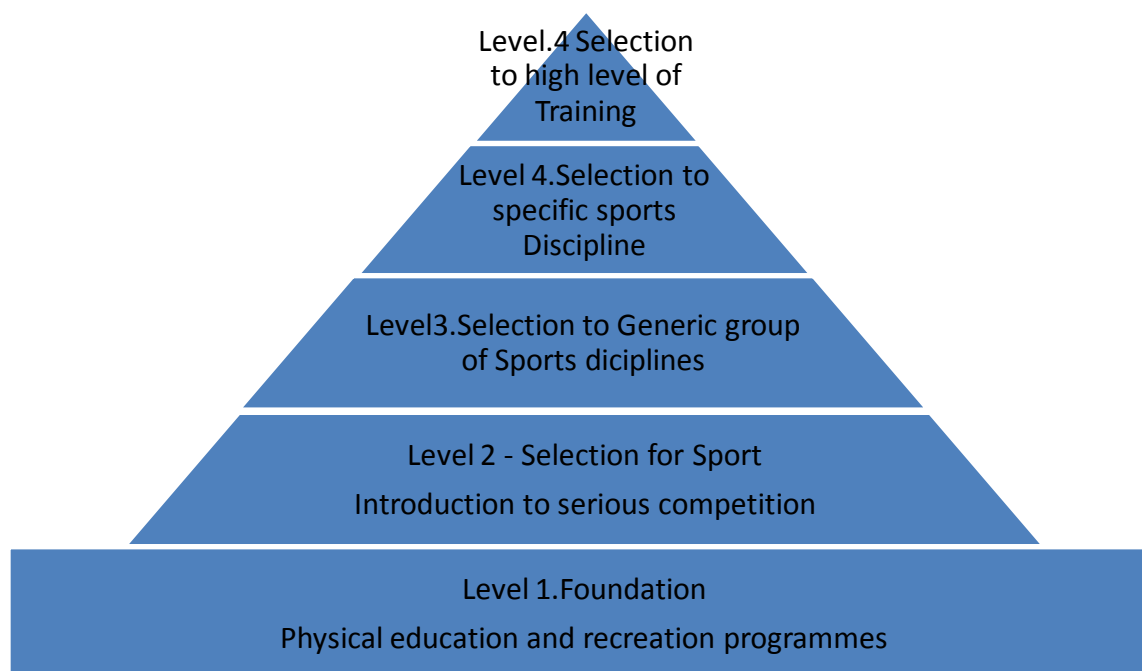
Experiential Basis of Talent Search and Sport Interactive

The assessment of physical, Physiological and anthropometrical profiles that are associated with success in different sports may justify. However, amount of additional factors need to be considered in relation to their efficacy. Though these profiles have been positively correlated with performance, the determinants of performance and potential at adolescence are likely to differ due to their unstable nature, mature values are hard to predict. It is evident that, as performance levels improve the importance of anthropometrical factors declines. This is true for team sports where factors such as effective scanning and decision-making are an integral part of Performance.

So it is concluded that considering the biological factors alone cannot assess true determinants of potential. Research has shown that the attributes that determine the progress to higher level of performance are largely behavioural in nature (Kunst & Florescu, 1971). So a sports person needs certain behavioural attention in order to acquire and perfect skills. It is evident that the performance of a sports person once they have mastered skills also influenced heavily by psychological factors (Kreiner-Phillips & Orlick, 1993). Talent identification should be a continuous process, and should not be dependent on an individual's performance during any single test, competitive event. That should be a multi-dimensional concept of talent identification focusing on not only relevant physical, physiological and psychological characteristics, but should be capable of identifying potential and developed talent.

Development of the model

The pathways to excellence are typically complex, where athletes' progress through various stages of development. Based on the research studies, five stages of development are highlighted within the Talent Identification model.



Level 1 – Foundation

Physical Education and Recreational Programmes (The Education system)

The main objective is learning basic movement skills and developing positive attitudes about physical activity. The development of basic movement and co-ordination skills promoted principally through early play experiences and physical education. At the foundation level curriculum will be developed and employed for all the students of age between 5 to 8.

Level 2 - Participation

Selection for Sport (introduction to serious competition)

Exercising one's leisure option and taking part in exercise for primarily fun, enjoyment, health and fitness reasons. Here the focus is the development and employment of psycho-behavioural curriculum. This can help the children realistically evaluate their level of competence. Activities were designed for children between the ages of age 9 and 11. Here the imagery section presents practical tasks that promote the use of imagery and highlights how imagery, if used together with practice, can help build confidence and improve performance. The psychomotor characteristics developed are 1. Teacher led goal setting 2. Performance Evaluation 3. Self-Awareness, 4. Imagery.

Level 3 - Performance .

Selection to general Group of Sports Disciplines (e.g. martial arts, ball games, etc.) Ages 12 to 15 .

A more structured sporting experience that delivers higher standards of performance through a commitment to training and competition. striving to improve recognised talent through coaching, competition and training. Level three further develops the behaviors acquired at level two. Due to the interrelated nature of the behaviours, tasks often promote two or more of the concepts at the same time. The aim is to encourage the child to begin to take responsibility for their own development. The psycho-behavioural characteristics promoted are: 1. Goal Setting 2. Commitment 3. Performance evaluation 4. Self Awareness 5. Imagery

Level 4 - Selection to Specific Sports Discipline

Level four (ages 16 and above) is a sport specific level that provides coaches with guidance on how to promote the psycho-behavioural characteristics developed at level two and three within their sport (e.g., volleyball, football). The behaviours promoted at level four are: 1. Goal Setting and Committing to Goals 2. Performance Evaluation 3. Imagery 4. Planning 5. Focus and Distraction Control 6. Perceptions of Pressure, and 7. Quality, Goal Directed, Team and Individual Practice.

Level 5 – Excellence

Selection to High Level of Training

The top of sporting performance occurring at national and international levels where the defining standard is world class. Sport specific coaches require reflecting on the behaviors of athletes in their sport when successfully using psycho behavioral characteristics within training and competition. The effective application of a psycho-behavior is likely to vary between sports and may also be dependent on the stage of development of an individual. To encourage athletes to develop this skill, a video of relevant movements as a prompt for imagery would be beneficial.

Finally, coaching behaviors that reinforce the appropriate application of imagery by the athlete are identified.

CONCLUSION

It is concluded that a theoretical framework that is formulated from an interaction of key factors such as psycho behavioral characteristics, motor abilities, and physical characteristics considers sport talent identification and development for higher level is essential. Talent identification and development should be combined processes that emphasise direction and development instead of the traditional practice of selection and elimination.

REFERENCES

- Chauveau, M. (1999, 27/28 September). The key factors to the preparation of elite athletes. Paper presented at the International Forum on Elite Sport, Sydney, Australia.
- de Garay, A., Levine, L., & Carter, J. E. (1974). Genetic and anthropological studies of Olympic athletes. New York: Academic Press.
- Durand-Bush, N. (2000). The development and maintenance of expert athletic performance: perceptions of Olympic and World champions, their parents and coaches. Unpublished Doctoral dissertation, Doctoral dissertation, University of Ottawa., Ottawa.



YOGIC PRACTICE AT DIFFERENT SEASONS FOR BETTER HEALTH AND WELL BEING

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ABSTRACT

Due to aging, one loses both flexibility and balance. Improving mobility has significant benefits for your posture, lifting form, and strength, and for reducing injuries. One of the best ways to improve your mobility, core strength, and balance is Yoga. Because there are a number of different types of yoga, which helps to deciding what type of yoga works is best for our health. It is true that doing yoga helps us for better health and well-being. But it is possible to stay healthy by doing same yogic practice in different seasons? Seasons originally had different names as well Tapas and Tapasya are the two months of the frozen season. Madhu and Madhava are the two months of the blossoming season (spring). Shukra and Shuci are the two months of the hot season (summer). Nabha and Nabhasya are the two months of the rainy season. Isha and Oorja are the two months of the mature season (autumn). Saha and Sahasya are the two months of the frost season. Understanding the qualities and nature of each seasons it is important that we change our regular training for better health and wellbeing.

KEYWORDS: Yoga, Seasons, Health, Wellbeing.

INTRODUCTION

Yoga is a healing system of theory and practice. It is a mixture of breathing exercises, physical postures, and meditation. As we age, we lose both flexibility and balance. Improving mobility has significant benefits for the posture, lifting form, and strength, and for reducing injuries. One of the best ways to improve the mobility, core strength, and balance is Yoga. Because there are a number of different types of yoga, which helps to deciding what type of yoga works is best for the health.

Types of yoga

There are a variety of styles of yoga practiced around the globe, guaranteeing something for everybody. However the experience of one style can be radically different than another. Most popular types of yoga practiced are.

- ✓ **Hatha Yoga** : force (physical practice of yoga)
- ✓ **Vinyasa** : connection (links movement with the breath)
- ✓ **Iyengar** : alignment-based style of yoga
- ✓ **Bikram** : hot rooms and sweat dripping postures
- ✓ **Ashtanga** : **Power Yoga** (movement and breath are linked)
- ✓ **Jivamukti** : physical, spiritual, and ethical practice
- ✓ **Kundalini** : develop the mind, awareness, and consciousness
- ✓ **Yin** : **Restorative yoga**
- ✓ **Anusara** : attitude, alignment and action practice
- ✓ **Viniyoga** : process of self-discovery and personal transformation
- ✓ **Sivananda** : proper exercise, proper breathing, proper relaxation, proper diet, positive thinking and meditation.

SEASONS AND YOGA

It is true that doing yoga helps for better health and well-being. Yogis believe that humans are one with nature. Living “mono-life” and choose the same foods, practices, and environments over and over again, makes the life lens and perspective will begin to narrow. The body may even begin to form allergies to foods. Not only does the body weaken, but the spirit may also suffer for not adapting to new environments or challenges on a regular basis. Hence Changes is good according to nature and season. Seasons originally had different names as well Tapas and Tapasya are the two months of the frozen season. Madhu and Madhava are the two months of the blossoming season (spring). Shukra and Shuci are the two months of the hot season (summer). Nabha and Nabhasya are the two months of the rainy season. Isha and Oorja are the two months of the mature season (autumn). Saha and Sahasya are the two months of the frost season.

YOGA PRACTICE IN WINTER

During winter, regular yoga practice helps strengthen body immunity so that it keeps the bacteria at bay. Kidney toning asana are recommended. Asana such as

1. Surya namaskar, supta vajrasana, shashakasana, marjariasana, shashank bhujangasana, vyaghrasana, trikonasana, matsyasana, all back bending, paschimottasana, ardha matsyendrasana, halasana, gomuktasana and ushtasana.
2. Practicing pranayamas (breathing exercises) helps clear chest congestion, which is so common during winter, and also helps boost immunity. Surya Bhedana (Right Nostril

Breathing). Kapalbhati Pranayama (Skull Shining Breathing Technique) also heats up the body and is good to practice in winter. Pranayama: Bhastrika, agnisara kriya, uddiyana bandha, nauli helps the lungs constrict when the air coming into the body is cool, and inhaling through the nose warms the air before it enters the lungs, caused by air passing over blood capillaries underneath the mucous membranes. Secondly, the groove-like passages of the turbinate's in the nasal airway swirl and filters air, by protecting the respiratory system from potential allergens that may irritate the lungs during winter.

Mudra: Maha Mudra

Benefits of winter yoga

1. Practicing asana (postures) in a Vinyasa (flowing form) style maintains joint mobility and increases circulation while loosening stiffness within the joints.
2. Stronger pranayama practices also benefit the lungs and strengthen the relationship between the nervous and respiratory systems – such as kapalabhati (skull shining breath) and bhastrika (bellows breath)
3. Maintaining skin hydration while increasing the texture and suppleness of the skin
4. **Yoga** may help to elevate the mood

YOGA PRACTICE IN SPRING

Spring time is a time to get moving and dry out. Moving and burn out the residual kapha that has built during the winter months. Spring is also the season for cleansing and renewing. Spring time should be stimulating and invigorating. This helps to jump-start sluggish digestion to get the lymph moving, prevent congestion and aid in the detox process. Liver asana such as pachimottasana, meru varkrasana, bhunamanasana, ardha matsyadrasana, merudandasana, utthita hasta merudandasana and ardha padma pashimottasana. Dhanurasana, Jathara Parivartanasana and matsyasana are also really great asanas for kapha. Pavanmuktasana is focused upon the digestion which is compromised in the spring time. Simhakriya and Kunjalkriya are great for removing of excess kapha.

1. **Sun Salutations:** This sequence will help pump *prana* (breath) throughout the body, filling with oxygen and leveling the inner-body zest.
2. **Backbends:** These heart-opening asana are energizing and revitalizing. They are Bridge Pose, Wheel Pose and Camel Pose.
3. **Twists:** Twisting the body helps to detoxify the organs and strengthen metabolic fire.
4. **Dynamic Forward Folds:** Poses such as Seated Forward Fold, Rabbit Pose and Standing Forward Fold help to tone the kidneys and bladder, which regulate water and emotions in the body.
5. **Wind-Removing Pose:** This pose will help to stimulate the large intestine, aiding in detoxification.

Mudra: Maha Mudra

Shatkarma: Kunjal kriya, laghoo shankhaprakshalana, nauli, agnisar dhauti, jalaneti, vastra dhauti

Pranayama: Kapalbhati, bhastrika, surya bhedana, agnisara kriya, sheetkrama

Benefits:

1. Promote circulation; strengthen metabolic fire, and dynamic forward and backbends to tonify the kidneys and urinary bladder, which regulate water in the body.
2. Filtering toxins from the external environment and food, helping to break down fats in the body

YOGA PRACTICE IN EARLY SUMMER**Asana**

During summer the body is at its weakest, exertion is at its least. As the heat and dryness is high, working with the moon and cooling asana as well as nourishing is the way to go. Restorative asana is best for summer. Suryanamaskar can still be done but is done to very less exertion. Organ focus can be on the heart and small intestines. Bhujangasana, shalabhasana, sarpasana, and shavasana with legs up (vipareeta) a wall are a wonderful way to work the heart.

Mudra: Maha Mudra, anjali mudra, viparita karani mudra, Yoni mudra.

Shatkarma: Moola shodana, lots of mula bandha, basti

Pranayama: Shitali, Shitkari, Chandrabhedana, helpsto reduce the body temperature, helps to calm the physical body and mind.

Meditation: Yoga nidra, Yam mantra focused on anahata with blue lotus, grounding.

YOGA PRACTICE IN LATE SUMMER**Asana**

Organ focus: spleen and stomach, band has; mula bandha and uddiyana. Shavasana with legs up a wall

Mudra: Ashwini mudra, mahaveda mudra, maha mudra, yoga mudra, viparita karani mudra, Yoni mudra, Closing the seven gates mudra, nasikagra mudra
Pranayama: Small amount of agnisara kriya will be beneficial but over doing it will aggravate pitta. Shitali, Shitkari.

Meditation: Trataka, Grounding.

COOLING SUMMER YOGA POSES

One of the best ways to encourage equilibrium in the body is through yoga practice. Asana such as

1. **Supported Backbends:** Try Bridge Pose with a yoga block beneath the low back.
2. **Legs up the Wall:** Remember to keep your tailbone flush against the wall and your legs straight up.
3. **Supported Shoulder Stand:** Place a blanket or towel under the shoulders, letting your neck dip off the edge.
4. **Forward Folds:** Try Seated Forward Fold or Wide-Legged Forward Fold.
5. **Floor Twists:** You can do these seated or lying on your back.
6. **Moon Salutations**

Benefits: It helps to calm the nervous system and serve the body's attempts to self-regulate.

BREATH WORK: COOLING PRANAYAMA

The following are some of the cooling pranayama (breathe work) for summer:

- **Shitali Pranayama:** This technique is done by curling the sides of the tongue towards one another and sticking the tongue out through the lips. Inhale through the rolled tongue and exhale out through the nose. Repeat 5-20 times.
- **Single-Nostril Breathing:** This technique isolates one nostril, targeting the left nostril, which is called the *Ida Nadi* ("subtle channel"), which is the body's cooling channel and is located on the lunar side of the body. Plug the right side of the nostril and breathe in and out through the left nostril for 5-20 breaths.

ASANA PRACTICE IN AUTUMN

Asana

During autumn, it is important to schedule yoga practice at the same time every day and for the same length of time. This will help to build a routine and calm the chaotic vata energy.

During this season organ focus: Lung and large intestine. Asana like *supta vajrasana*, *akarnadhanurasana*, *hasta uttanasana*, *uttitha lolasana*, *matsyasana*, *baddhapadmasana*, *sarvangasana*, *mayurasana*.

1. Twists: Half Lord of the Fishes Pose, *Noose Pose*, Revolved Triangle Pose
2. Side Stretches: Revolved Head-to-Knee Pose
3. Backbends: Bow Pose, Bridge Pose, Camel Pose
4. Warrior I Pose and Warrior II Pose
5. Sun Salutations will also warm the body during the chill of autumn

Mudra: Maha Mudra

Pranayama: *Chandrabhedana*, *Shitkara*, *Shitali*, *Kapalabhati* helps to tune the breath, body and mind, and also create balance by providing warmth and stability to the body and mind

Meditation: mindfulness meditation one of the best ways to be grounded and to find calm and stillness.

Benefits:

1. Help to build a routine and calm the chaotic vata energy
2. Yoga practice opens up and gives us physical experiences of release that naturally carry over into intellectual and emotional release.

CONCLUSION

It is concluded that doing yoga practice regularly is good for the enhancement of health, but if the seasonal yoga is practiced in the particular season it may be more useful who get health problems due to change of seasons.

REFERENCE

<https://www.yogajournal.com/poses/3-warming-pranayama-practices-perfect-winter>
www.huffingtonpost.in/dr-anil-k-rajvanshi/science-of-pranayam
yogaforhealthyaging.blogspot.com/2013/.../healthy-living-for-fall-with-ayurveda
<https://www.artofliving.org/in-en/yoga/yoga-tips-for-winter>
<https://www.yogajournal.com/yoga-101/types-of-yoga>



EFFECTS OF LOW INTENSITY PLYOMETRIC TRAINING COMBINED WITH AEROBIC TRAINING ON LEG EXPLOSIVE POWER OF SCHOOL VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the effects of low Intensity plyometric training combined with aerobic training on leg explosive power of school volleyball players. To achieve the purpose of the study, thirty school volleyball players in, JSS Public School, siddartha layout, Mysore. Were selected as subject at random and their age group range between 13to 15 years. The study was formulated as pre and post test random group design, in which thirty subject were divided into three equal groups. The experimental group-1 (n=10, LI-PT) underwent low intensity plyometric Training, experimental group-2 (n=10, LI- PT-AT) underwent low intensity plyometric training combined with aerobic training and group 3 served as control group (n=10, CG) did not undergo any specific training. In this study, two training programme were adopted as independent variable, i.e., low intensity plyometric training, and low intensity plyometric training combined with aerobic training. The leg explosive power was selected as dependent variable; it was measured by vertical jump test and recorded in centimeters. The selected two treatment group's was performed three days in a week for the period of eight weeks, as per the stipulated training program. The leg explosive power was collected before and after the training period. The collected pre and post data was critically analyzed with apt statistical tool of analysis of co-variance (ANCOVA), for observed the significant adjusted post-test mean difference of three groups with respect to each parameter. The Scheffe's post hoc test was used to find out pair-wise comparisons between groups with respect to each parameter. To test the

hypothesis 0.05 level of significant was fixed in this study. The results proved that the low intensity plyometric training combined with aerobic training produce significant improvement on leg explosive power rather than the low intensity plyometric training and control group.

KEYWORDS: 1.Plyometric Training, 2.Aerobic Training, 3.Low Intensity, 4. ANCOVA, 5. Leg Explosive Power

INTRODUCTION

The term plyometrics has had few meaning and interpretations over the years depending on whether once IS describing plyometrics classic plyometric or modern plyometrics. Plyometric exercise translates into more length as loaded or explosive eccentric (ECC) muscle action with no reversible, e.g., concentric (CON), muscle actions are used. **Zatsiorsky.V(2006)**. Aerobic metabolism plays a vital role in human performance and is basic to all sports, if for no other reason than recovery. Metabolically, the Krebs cycle and electron transport chain are the main pathways in energy production. Aerobic metabolism produces far more ATP .

METHODOLOGY:

The study was formulated as pre and post test random group design, in which thirty subject were divided into three equal groups. The experimental group-1 (n=10, LI-PT) underwent low intensity plyometric Training, experimental group-2 (n=10, LI- PT-AT) underwent low intensity plyometric training combined with aerobic training and group 3 served as control group (n=10, CG) did not undergo any specific training. In this study, two training programme were adopted as independent variable, i.e., low intensity plyometric training, and low intensity plyometric training combined with aerobic training. The leg explosive power was selected as dependent variable; it was measured by vertical jump test and recorded in centimeters. The selected two treatment group's was performed three days in a week for the period of eight weeks, as per the stipulated training program. The leg explosive power was collected before and after the training period. The collected pre and post data was critically analyzed with apt statistical tool of analysis of co-variance (ANCOVA), for observed the significant adjusted post-test mean difference of three groups with respect to each parameter. The Scheffe's post hoc test was used to find out pair-wise comparisons between groups with respect to each parameter. To test the hypothesis 0.05 level of significant was fixed in this study. The results proved that the low intensity plyometric training combined with aerobic training produce significant improvement on leg explosive power rather than the low intensity plyometric training and control group.

TABLE I
THE RESULTS OF ANALYSIS OF COVARIANCE ON LEG EXPLOSIVE POWER OF
DIFFERENT GROUPS (Scores in Centimeters)

Test Conditions		G- 1 LI-PT	G- 2 LI-PTAT	G- 3 CG	SV	SS	Df	MS	'F' Ratio
Pre test	Mean	24.3	24.1	23.9	Between	0.8	2	0.4	0.216
	S.D.	2.06	0.74	0.88	Within	49.9	27	1.848	
Post test	Mean	26.2	27.4	22.8	Between	0113.8	2	56.93	36.95*

	S.D.	1.87	0.69	0.79	Within	41.6	27	1.54	
Adjusted post test	Mean	26.03	27.4	22.96	Between	102.5	2	51.26	161.76*
					Within	8.24	26	0.317	

* Significant at .05 level of confidence. The required table's value for test the significance was 3.35 and 3.37, with the DF of 2 and 27, 2 and 26.

RESULTS OF LEG EXPLOSIVE POWER

The pre test mean and standard deviation on leg explosive power scores G1, G2, and G3 were 24.3 ± 2.06 , 24.1 ± 0.74 and 23.9 ± 0.88 respectively. The obtained pre test F value of 0.216 was lesser than the required table F value 3.35. Hence the pre test means value of low intensity plyometric training, low intensity plyometric training combined with aerobic training and control group on explosive power before start of the respective treatments were found to be insignificant at 0.05 level of confidence for the degrees of freedom 2 and 27. Thus this analysis confirmed that the random assignment of subjects into three groups were successful.

The post test mean and standard deviation on leg explosive power of G1, G2 and G3 were 26.2 ± 1.87 , 27.4 ± 0.69 and 22.8 ± 0.79 respectively. The obtained post test F value of 36.95 was higher than the required table F value of 3.37. Hence the post test means value of low intensity plyometric training, low intensity plyometric training combined with aerobic training on leg explosive power were found to be significant at 0.05 level of confidence for the degrees of freedom 2 and 27. The results proved that the selected two training interventions namely low intensity plyometric training, low intensity plyometric training combined with aerobic training was produced significant improvement rather than the control group of the sample populations.

The adjusted post test means on leg explosive power scores of G1, G2 and G3 were 26.03, 27.4 and 22.96 respectively. The obtained adjusted post test F value of 161.76 was higher than the required table F value of 3.35. Hence the adjusted post test means value of low intensity plyometric training, low intensity plyometric training combined with aerobic training on leg explosive power were found to be significant at 0.05 level of confidence for the degrees of freedom 2 and 26. The results confirm that the selected two training interventions namely low intensity plyometric training, low intensity plyometric training combined with aerobic training on leg explosive power were produced significant difference among the groups. In order to find out the superiority effects among the treatment and control groups the Scheffe's post hoc test were administered. The outcomes of the same are presented in the table I (a).

TABLE - I (a)
SCHEFFE'S POST HOC TEST MEAN DIFFERENCES ON LEG EXPLOSIVE POWER
AMONG THREE GROUPS (Scores in Centimeters)

G-1 LI-PT	G- 2 LI-PT-AT	G- 3 C G	Mean Differences	Confidence Interval Value
26.03	27.4		1.36*	0.799
26.03		22.96	3.07*	0.799
	27.4	22.96	4.43*	0.799

* Significant at .05 level of confidence.

Result of Scheffe's post hoc test on Leg Explosive power.

Table I (a) shows the paired mean differences of low intensity plyometric training, low intensity plyometric training combined with aerobic training and control group on leg explosive power. The paired wise comparisons results as follows. **First comparison: Group 1 and 2:** The pair wise mean difference of group 1 and group 2 values 1.36 was higher than the confidential interval value of 0.799. Hence the first comparison was significant. The results of this comparison clearly proved that both training have produced significantly different improvements on leg explosive power. **Second comparison: Group 1 and 3:** The pair wise mean difference of group 1 and group 3 values 3.07 was higher than the confidential interval value of 0.799. Hence the second comparison was significant. The results of this comparison clearly proved that low intensity plyometric training, have produced greater improvements on leg explosive power than the control group. **Third comparison: Group 2 and 3:** The pair wise mean difference of group 2 and group 3 values 4.43 was higher than the confidential interval value of 0.799. Hence the third comparison was significant. The results of this comparison clearly proved that low intensity plyometric training combined with aerobic training have produced greater improvements on explosive power than the control group.

DISCUSSION ON FINDINGS

The results of the present study were demonstrated positive effect of selected speed of school volleyball players. This findings support, in line with the result of the above earlier findings. **Janura, Miroslav; Cabell, Lee; Svoboda, Zdenek (2016)** conducted a study on evaluation of explosive power performance in ski jumpers and nordic combined competitive athletes: a 19-year study there was a strong positive correlation in MRIF between the left and right lower limbs for all groups of SJ and NC athletes; therefore, it was determined to be sufficient to measure the MRIF on a single limb. Application of the new training methods resulted in improved explosive power in ski jumpers even at lower-body weights. These changes are in accordance with the change in ski jump techniques. **Ahmed Fadhil Farhan (2014)** conducted a study on impact of plyometric training program on physical performance in girl's age 12 to 15 years. Thus 6-weeks performing the plyometric training program can enhance physical performance in experimental group, while generally no effect was observed on a series of performance tests in a control group of adolescent female using the usual training program. **Young, Warren, Mcdowell, Mark, Scarlett, Bentley (2001)** conducted a study on the effect of agility, plyometric, and sprint training on the speed, endurance and power of High School Soccer Players. They concluded that straight speed and agility training methods are specific and produce limited transfer to the other. These findings have implications for the design of speed and agility training and testing protocols.

CONCLUSIONS

The quality of leg explosive power of school volleyball players highly developed in the influences of low intensity plyometric training combined with aerobic training than the low intensity plyometric training and control group. Further low intensity plyometric training also produce significant development on explosive power than the control group

REFERENCES:

Ahmed Fadhil Farhan(2014) Impact of Plyometric Training Program on Physical Performance in Girls Age 12 to 15 Years. International Journal of Advanced Sport Sciences Research Vol.2 No.1, March, 39-49.

Dudley GA, Djamil R. (1985) Incompatibility of endurance- and strength-training modes of exercise. J Appl Physiol. 59(5):1446-51.

Janura, Miroslav; Cabell, Lee; Svoboda, Zdenek; (2016)evaluation of explosive power performance in ski jumpers and nordic combined competitive athletes: A 19-Year Study Journal of Strength & Conditioning Research . 30(1):71-80,

Young, Warren B.; McDowell, Mark H.; Scarlett, Bentley J (2001) The Effect of Agility, Plyometric, and Sprint Training on the Speed, Endurance and Power of High School Soccer Players Journal of Strength & Conditioning Research. 15(3):315- 319

Zatsiorsky V, Kraemer WJ. Science and Practice of Strength Training. 2nd ed. Champaign (IL): Human Kinetics; 2006. pp. 1-35.



EFFECT OF SPECIFIC DRILL TRAINING PROGRAMME ON SKILL PERFORMANCES AMONG VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of specific drill training programme on selected skill performances among volleyball players. To achieve the purpose of the study thirty higher secondary school male volleyball players from Thanthai Periyar Higher Secondary School, Karaikal Pondicherry were selected as subjects. The age of the subjects were ranged from 15-17years. They were divided into two equal groups. Each group consists of 15 subjects. Group-I was underwent to specific volleyball fitness training for five days in a week for twelve weeks, Group -II acted as control group (CG). They didn't undergo for any specific training programme than the normal routine volleyball game. The Skill performance variable namely passing, service, attacking and blocking were selected as dependent variable and they were was assessed by Brady volleyball test for passing, Service was assessed by Russell Lange volleyball test, Attacking and Blocking were assessed by judges ratings. The data was collected before and after 12 weeks of training. The data was analyzed by using analysis of covariance (ANCOVA). The level of significance was fixed at 0.05. The findings of the present study have strongly indicate that volleyball specific drill training group have significant effect on selected skill performance variables i.e., passing, service, attacking and blocking ability of high school male volleyball players.

KEYWORDS: *Specific Drill Exercise, Passing, Service, Attacking and blocking ability.*

1.Introduction

Volleyball matches are long, is a sport of constant motion but play isn't continuous so the training should consist of energy system development specific to increasing or more importantly maintaining a high level of volleyball performance. The basic pattern of movement in making an attack includes a dig, a set and a spike and they can also try to block the opponent's spike as the ball crosses the net (Reeser, 2003). So it is essential for the players to possess physical fitness and skill performance that allow them to play their roles most effectively (Sindhu, 1982). The sport specific technical skills in sports are predominant factors. Skill is an indicator of one's current level of proficiency on a given task and represents a combination of the athlete's abilities, capabilities and practices or experience with the task. Skills are classified into three categories technical, tactical and mental. Technical Skill requires the effective execution of a particular movement. Tactical Skill refers to the kind of decision making that enable athletes to gain an advantage over their opponent. Mental Skill involves the effective mobilization of the thought and feelings. Athletes need in order to remain poised and confident while executing their technical and tactical skills (Craig A, Wrisberg, 2007). Technical and tactical skills play a major role in games players' success; a player has to work on the interactions with their team-mates as well as on their individual skills (James Marshall 1996).

2. METHODOLOGY

The purpose of the study was to find out the effect of specific drill training programme on selected skill performances among volleyball players. To achieve the purpose of the study thirty higher secondary school male volleyball players from Thanthai Periyar Higher Secondary School, Karaikal Pondicherry were selected as subjects. The age of the subjects were ranged from 15-17 years. They were divided into two equal groups. Each group consists of 15 subjects. Group-I was underwent to volleyball specific drill training for five days in a week for twelve weeks, Group -II acted as control group (CG). They didn't undergo for any specific training programme. The Skill performance variable namely passing, service, attacking and blocking were selected as dependent variable and they were was assessed by Brady volleyball test for passing, Service was assessed by Russell Lange volleyball test, Attacking and Blocking were assessed by judges ratings.

3. Training Procedure

After the initial measurement the specially designed training programme named as volleyball specific trianing programme was to given to the subjects of the experimental group. Each experimental session was of 45 minutes duration with including warm up and warm down for five days in a week for 12 weeks in the morning sessions only. The package of volleyball specific drill training were as follows: set with sideways walk, set to box, blocker movement setting drill, setter concentration drill, blind blocking drill, middle blocking drill, jousting blocking drill, side-to-side blocking drill, middle attack drill, block and hit drill, hitter versus hitter, six-on-six drill, court drills passing with partners by jogging inbetween, bump pass, make a turn and pass, pass to self, do a forward roll, pass to self again, then bump to a partner, passing the ball with moving in a circle, pass- moving to left and pass, then move to the right then pass, outside in hitting, four way step close, multiple area deep hitting, power and vision hitting, make a pass to the setter and attack the ball, continous attack in all the three positions etc(Dunphy et al.,2000).

4. Statistical Procedure

The data pertaining to the variables in this study were examined by using dependent 't' test to find out significant improvement and analysis of covariance (ANCOVA) for each variables separately in order to determine the difference and tested at 0.05 level of significance.

5. Analysis of the Data

The dependent 't' test on data obtained for passing, service, attacking and blocking of the pre and post test means of experimental groups have been analyzed and presented in Table I

Table-I
Mean and Dependent 't' test of Experimental Groups and Control Group on Selected Variables

Variables	Mean	Specific drill training group	Control group
Passing	Pre test mean	34.60	32.73
	Post test mean	35.60	33.53
	't' test	2.84*	1.97
Service	Pre test mean	27.00	26.93
	Post test mean	32.80	27.46
	't' test	11.83*	1.65
Attacking	Pre test mean	6.32	5.94
	Post test mean	6.39	6.10
	't' test	3.47*	1.70
Blocking	Pre test mean	6.65	6.15
	Post test mean	7.32	6.31
	't' test	7.07*	1.36

*significant at 0.05 level confidence (14) =2.14

The analysis of covariance (ANCOVA) on data obtained for passing, service, attacking and blocking of the experimental and control group have been analyzed and it is presented in table-II

Table-II
Analysis of Covariance of Experimental Groups and Control Groups

Variables	Adjusted post test means		Source of variance	SS	df	Mean square	'F'-ratio
	Specific drill	Control group					
Passing	32.60	29.46	Between	41.82	1	41.82	23.55*
			Within	47.95	27	1.77	
Service	32.80	27.46	Between	210.27	1	210.27	93.46*

			Within	60.74	27	2.25	
Attacking	6.69	6.10	Between	887	1	887	7.10*
			Within	3.372	27	125	
Blocking	7.32	6.22	Between	6.66	1	6.66	38.53*
			Within	4.67	27	173	

*significant at 0.05 level of confidence, df (1, 27) =4.21

6. DISSCUSSIONS

Specificity is a method of training in a specific way to create a specific outcome. In many team sports, specificity may even be determined by player position. The results of the present study showed that there was a significant difference on selected skill performance variables due to twelve weeks of specific drill training. However the control group did not show any improvement on selected skill performances. The results of the study thoroughly support the results of the previous research of specific drill training on different disciplines and it is justified as follows, Skill-based conditioning games are likely to result in the greatest improvements in fitness and skill in junior elite volleyball players (Gabbett 2008). Gabbett and colleagues (2006) found that skill-based training improves spiking, setting, and passing accuracy but has little effect on the physiological and anthropometric characteristics of players. Hakkinen et al. (1996), that 4-5 weekly sessions of specific playing drills and competitive games of volleyball players significantly improved spiking and blocking skills.

7. CONCLUSIONS

Based on the results of the study, it was concluded that skill performance variables such as service, passing, attack and blocking showed significant improvement due to the package of specific volleyball drill training programme.

8. REFERENCES

1. Blanchard, K and Taylor Cheska, A (1985), "The Anthropology of Sport", South Hadley, MA: Bergin and Garvey Publishers. P.193.
2. Craig Hall A. Wrisberg, (2007) "Imagery effects on the performance of skilled and novice soccer players" Journal of Sports Sciences, 11(2) PP.95-101.
3. Dunphy, Rod Wilde (2000). Volleyball Today, Second Edition Wadsworth Thomas Learning Publisher United States Ch-2, P.No 31-35
4. Gabbett, T. J (2008). An evaluation of skill-based conditioning games. Journal of Strength and Conditioning Research, 16:236-241,.
5. Gabbett, T., Georgieff, B., Anderson, S., Cotton, B., Savovic, D., Nicholson L. (2006). Changes in skill and physical fitness following training in talent-identified volleyball players., J Strength Cond Res.:29-35.
6. Hakkinen K. (2006); Changes in physical fitness profile in female volleyball players during the competitive season. J Sport Med Phys Fitness. 33:223-232
7. James Marshall (1996) MSc, CSCS, ACSM/HFI runs Excelsior, a sports training company

8. Knapp, B. (1974) "Skill in Sport", Routledge and Kegan Paul, London., P.21
9. Reeser, J.C. (2003) Introduction: a brief history of the sport of volleyball. In: Volleyball.. Oxford: Blackwell Scientific, 1-7.
10. Sandhu, G.S. (1982) Volleyball basic and advanced. Sports people publishers of Sports Literature, Chandigarh
11. Sugukumar saha. (2008) Influence of the new competition rule on volleyball and development of techniques and tactics. Fujian Sports Science and Technology, 18-20.

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