ISSN 0975-7732

Volume 7, No. 1
HALF YEARLY
July 2012 to December 2012

# Asian Journal of Physical Education & Computer Science in Sports

*Journal Impact Factor 0.5190*

Published by :
Indian Federation of Computer Science in Sports
www.ifcss.in
Under the Auspices
International Association of Computer Science in Sports

Publisher:
Indian Federation of Computer Science in sports
www.ifcss.in
under the auspices of
International Association of Computer Science in sports
Email: rajesh2sports@yahoo.co.in

Asian Journal of Physical Education and Computer Science in sports (ISSN 0975-7732 Print) Journal published Half Yearly for the months of June, and December.

AJPECSS is refereed Journal Published by the Indian Federation of Computer Science in sports



Asian Journal of Physical Education and Computer Science in Sports is multidisciplinary peer reviewed journal, mainly publishes original research articles on Physical Education and Computer Science in Sports, including applied papers on sports sciences and sports engineering, computer and information, Sports Psychology , sports medicine etc. The Asian Journal of Physical Education and Computer Science in sports is a print international journal devoted to the promotion of physical Education and computer sciences involved in sports. It also provides an International forum for the communication and evaluation of data, methods and findings in physical education and computer science in sports. The Journal publishes original research papers and all manuscripts are peer review.

**Up Coming International conference of International Association of computer science in sports**

The 9th International Symposium on computer science in sports 2013 at Istanbul , Turkey from 19th to 22nd June 2013

# Contents

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp1-3**
**Journal Impact factor 0.5190**

# School And Tribes
# Mutual Non – Accessibility

**Srinivas. Akula**
**Principal, Janardhan Reddy College of Education.Huzurabad, Karimnagar,A.P.**

**Introduction:**

The Indian Constitution identifies for special consideration certain ethnic minority groups, traditionally referred to as tribes or tribal, as Scheduled Tribes (STs) who constitute around 8% of the total population of the country. There are at least 573 tribal groups living in different parts of the country. Most of the tribal communities have their own dialect, different form of the languages of the state where they live. There are more than 270 such languages, primarily spoken languages, which are popularly termed as Tribal Languages (Girijana bhasha)One of the distinguishing features of Scheduled Tribes is that the majority of them live in scattered habitations located in interior, remote and inaccessible deep forest and hill track areas of the country. Still now, nearly 40% percent of tribal habitations we can see in the deep forest and hill track areas.

**Understanding the Tribe:**

Schedule Tribes, the name given by the law to the people who are otherwise referred to as Tribes, Adivasis, Moolavasis, Girijans, and aboriginals. They are distinct from others' and they are very close to "Nature". They largely live in and with Nature. Their way of life and view of life is simple and primitive. They are small in number bold in Nature. They identify their group with have the self-governing and self-sufficient in their natural entity. Therefore, tribe as understood by Majumdar (1958) is "a community which has name, endogamous in nature, lives in common territory, has a common traditional culture, with a un-written language, is structurally and culturally distinctive, relatively homogenous, largely self-governing, with no specializations of functions, pervasively self-sufficient and has a shared consciousness of ethnic identify and of belonging together".

**Educational Scenario of Tribes:**

Literacy, though in itself cannot amount for education, is an important indicator of educational development. The available data on literacy from 1971 to 1991 show that literacy rate for STs has gone from a low of 11.30 in 1971 to 29.50 in 1991. Though literacy rate among tribal population increased as indicated above, the absolute numbers of illiterates were also increased over the years. Further, the gap between ST and non-ST population has also increased notably from 22.50 to 33.05 during the same period. Even today tribal literacy level falls well below the national average.Educational disparity exists not only between tribal and non-tribal population there exists inter-tribal and intra-tribal disparities also. One single all important observation with regard to tribal vis-à-vis school has been that where as their enrollment rate is far lower than any other social category; their drop out rate has been far higher than any other social category.One cannot address tribal educational problems in isolation from their existential and social problems. Therefore, here under a brief attempt is made to peep into and identify and list the existential problems of tribes, which would influence their educational progression and regression. This attempt, of course, has to begin with understanding the tribe.

This study was concluded with two issues. One is that the cognitive qualities of tribal children have to be viewed and evaluated into consideration with their ecological and cultural contexts that place very different demands on day-to-day life. Because of differences in the demands of tribal ecology, the patterning of their cognitive abilities shows considerable variation from those of the groups.

Second one is to related and more important issue is that tribal children are neither culturally inferior nor cognitively less competent than those of other groups in spite of their skills and abilities are highly developed and extremely sophisticated.

Anil Pradhan (2010). Anil concentrated on pedagogical problem of tribal education. Tribal schools are functioning like any other schools with the exception of adding residential facilities. There is no separate curriculum and activities for tribal children in these schools which will promote and raise their confidence level. Government should learn from these field experiences and redesign school programmes for rural communities and tribals respectively to build a knowledgeable society in Orissa and join hand with rest of the people from have a inclusive society with social justice. National Council of Educational Research and Training, New Delhi.(1995), The NCERT intense to educational facilities-the analysis of responses to a question whether tribal development programme was successful or not, the community leaders in Karnataka, Madhya Pradesh and Maharashtra felt that these programmes were unsuccessful. Most of the teachers and community leaders ascribe poor attendance of tribal children in school and due to economic reasons, including household duties and working on the farm, low parent motivation is also listed as a significant reason for children not attending school. There is a similarity of responses given by children, community leaders and teachers.

Deshmukh B.A. (2004), in his study on tribal culture and awareness in relation to their education. Education is harmonious development of the individual in the context of the community to which he belongs. The personality of the individual is molded to a large extent by the culture in which he is born and brought up. There is always an interaction between the environment and the individual, to develop educational awareness among the tribe is seen. It is that economic prosperity is not only the viability for education but other social factors like awareness, attitude, motivation and willingness of the people.

Problems of Tribes:

Tribal identity is at constant threat. Though there is no need to romanticize tribal identity and tribal ways, it is an imperative on part of the observer to look at tribal identity and the probable threats to it in an objective way. Tribal identify is at stake not primarily because of internal contradictions but because of external occupations and attacks. The external occupations and attacks on tribal land and people, and culture at large with the support of government policies – in the name of development- are the main reasons for tribal sorry state. Therefore tribal problems can be traced at various levels. They are:

(1) Politico – economic level.

Because of policies framed, development model embraced by the successive governments resulted in

De – forestization,

On the name of development of the tribal area, different development activities have been taken place by the state and centre government. While implementing that development activity, the forest is one of the major hindrances to the industrialists, so, for establishment of the industries they removed the forest.

Displacement of tribes:

The so called development in tribal area industries like open coal mines, irrigation projects immediate reflected on their habitations and latter on de-forestation. Finally they lost their land and should move to new places.

Tribal land alienation:

The problem of land alienation is the life existence problem for tribal people, because, they lost their right to live which a fundanmental right of the people is according to Indian constitution.

The tribal economy is basically forest based, most of tribal people's livelihood requirements depend upon the forest resources.

(2) Socio-cultural level:

Tribes are and Tribalism is basically a cultural identity. Because of the development model the Governments adopted, and because of mild internal colonization of tribes by 'other' people, tribal culture and their distinct identity is at stake.

The result is;

Slow extinction of tribal tongues;

Slow fading away of tribal Symbols;

Up-rootment of Tribes from their culture,
Marginalization, and
Identify crisis.
Understanding and Sympathetic consideration of the above is necessary in order to understand the educational problems of Tribes.
Educational problems of Tribes:

As it is seen, low enrollment, and high dropout is the most striking features of the educational problems of the tribes. Therefore, the basic educational problem of the tribal is "NON – ACCESSIBILITY" of school in its physical, and cognitive dimensions.

(1) Physical Non-accessibility of School

Tribal habitations are away from metropolis or center. Therefore, they are not easily accessible to school that is coming from outside - the center. Apart from that, tribal habitations are not populous, hence, establishing school in every habitation is not advisable from 'cost-benefit' perspective. This is the reason why, till date tribal habitations are without school. However, alternative practices in primary schooling made the school physically accessible to the tribal children, wherever cost-benefit perspective is satisfied.

This physical accessibility may ensure enrollment of the children in the school, without which even enrolling children is not possible. This physical accessibility of the school to the tribal children, at the same time, may not and cannot ensure the 'retention' of the tribal children (for that matter any children), since it is necessary condition but not sufficient condition in itself. The sufficient condition within the school is "cognitive accessibility of the school".

(2) Cognitive Non-accessibility of the School

Where as school as physical entity ensures, from its side, the enrollment of the children, the cognitive accessibility of the school again on its part ensures the retention and success of the children. Therefore, any radical reformation to make the school accessible to all the children should look at school as basically a cognitive entity.The cognitive non-accessibility of the school through its language, symbols, content, cognitive processes and attitudinal behaviour of the teacher and institution pushes the tribal students from the school, thus, massive phenomenon of drop-out. These traditional drop-outs are infact 'push-outs.' Therefore, any attempt to make schools more accessible to students, it is necessary to bring reforms in the pedagogy and culture of schooling.This all-important reform in schooling coupled with people friendly developmental approach would only solve the tribal problems in general and their educational problems in particular. With this broader perspective following measures if under taken with vigour only make school accessible to tribes.

Measures;
Establishment of more number of Ashram Schools;
Adopting Culture specific pedagogy;
Decentralization of educational management;
Encouraging community participation;
Providing space for tribal language and culture in schools texts.

**References:**


i. Anil Pradhan (2010). Education for children of tribal (indigenous people) Communities in Orissa, India. Member-Secretary, Sikshasandhan, Bhubaneswar, Odisha, India. Posted on April 30, 2010.

ii. Basu, S. K. (1986). Genetics, socio-cultural and health care among tribal groups of Jagdalpur and Konta tehsils of Bastar district, M.P. In: Anthropology Development and Nation Building. Eds A.K. Kalla and K.S. Singh, Concept Publishing Company, New Delhi, p.87.

iii. Census of India. (1991). 1 of 1992. Final Population Tools, Registrar General and Census Commissioner of India, New Delhi.68.

iv. Deshmukh B. A. (2004) Tribal Education. Published by Sonali Publications New Dehli.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp4-6**
**Journal Impact factor 0.5190**

# Comparision Of Mental Toughness Variables Among Kho-Kho And Kabaddi Players Of Guntur District

**Sudhakara Babu Mande**
**Research Scholar, University College of Phy. Edn &Sports Sciences, A.N.U. Guntur**
**Dr. P.P. Satya Paul Kumar**
**Principal, Univ. College of Phy. Edn. &Sports Sciences, Acharya Nagarjuna University.**

**Abstract:**
The purpose of the study was to compare the mental toughness variables of the Kho-Kho and Kabaddi players ie., self confidence, negative energy, attention control, visualization and imaginary control, motivation, positive energy and altitude control. This study consists of (50) Male subjects were selected under two categories Kho-Kho and Kabaddi based on their Age levels from16 and 23 years.. Kho-kho– Group & kabaddi– Group Initially those male athletes were studied for their the mental toughness in Relation to their athletic performance by using a Questionnaire deals with-. Attention Control. Self Confidence Negative Energy, Visual &Imagery Control, Motivation Level, Positive Energy. Attitude Control

## INTRODUCTION

Every nation wants to show its supremacy by challenging other nations in sports. This challenge stimulates, inspires and motivates all the nations to sweat and strive for excellence through grater strength, endurance, flexibility, speed and coordination in skills in sports world. There are numerous factors like physiological, psychological, mechanical, anthropometrical and technical preparation to build up the athletes for higher level of competitive sports. Mental toughness is defined as an unshakeable perseverance and conviction towards some goals despite pressure or adversity It is 'winning the contest with yourself… the ultimate challenge" Mental toughness is the ability to consistently sustain one's Ideal performance state during adversities in competition. Mental toughness is learnt, not inherited. The ultimate measure of mental toughness is consistency mental toughness is the ability to consistently sustain one's optimum performance state during adversities of the game. Adversities are the true test of ones "nerves" consistency is the ultimate yardstick of a champion performing with the Maximum potential is the core of the mental toughness.

## STATEMENT OF THE PROBLEM:

The purpose of the study was to compare the mental toughness variables of the Kho-Kho and Kabaddi players i.e., self confidence, negative energy, attention control, visualization and imaginary control, motivation, positive energy and altitude control.

## DELIMITATIONS:

For the purpose of the study 25male Kabaddi players and 25 male Kho-Kho players were selected, those who were selected for special training by the sports Authority of Andhra Pradesh for Kho-Kho and Kabaddi Academies of Guntur District. The subject's age ranged between 16 and 23 years. The psychological variables selected for this study are self confidence, negative energy, attention control, visualization and imaginary control, motivation, positive energy, and attitude control.

## LIMITATIONS:

The difference that exists among the subjects due to varied socio-cultural, economical and religions factors were also not considered. The general mood, and understanding of the questionnaires at the time of responding to the questionnaires may effect the answer and this was considered as limitation. The accuracy and reliability of the subject's responses were considered s limitation.

## METHOD AND PROCEDURE OF THE STUDY

### SELECTION OF SAMPLE:

Since the primary purpose of the study was comparison of mental toughness variables among the kho- kho and Kabaddi players.25 male Kabaddi players and 25 male Kho-Kho players were selected as subjects from Guntur District.The subject were talented Kho-Kho and Kabaddi players selected for special training. The selected subjects age ranged from 16 to 23 years. The subjects were in constant touch with Kho-Kho and Kabaddi and were receiving training regularly. The subjects were regular participants in different levels of Kho-Kho and Kabaddi competitions.The purpose of study was to compare mental toughness of the kho-kho and kabaddi players. To attain, then Kho-kho and Kabaddi players where selected from the sports academies of Andhra Pradesh as the status of the mental toughness of Kho-Kho and Kabaddi players was assed and compared experimental design that involved in the study is static group design.

### DATA COLLECTION:

The necessary data was collected by administering standardized test. The description of questionnaire, administration of questionnaire and scoring the mental toughness of players was assessed by standardized inventory (Questionnaire) constructed by James E. Loehr. The questionnaire contain seven categories as self confidence negative energy attention control, visualization and imagery control, motivation level, positive energy and attitude control.

### PROCEDURE OF THE STUDY:

Before the test was administrated to the subjects. The investigator with regard to the purpose of the study and method of answering were well explained systematically. The investigator distributed questionnaire to the subjects both in Telugu and English for their response. Each and every question was read out and explained so that subjects could easily understand the same. The subjects answered while the investigator clarified all the doubts of subjects whenever asked for. The questionnaire also contains brief instruction to subjects as given under.

To help you get a clear idea of your mental strengths and weakness relative to the seven variables just reviewed place on ( □ ) tick mark in one of the five spaces for each of the items in choices are almost always, often, some times, seldom and almost never. Select which ever one best fits your interpretation of the items as it relates to the game. Your response is simply an estimate. Be as open and honest as you can with yourself and respond to each item, as it pertains to you in the right here and on text. Only one opinion for each item is permitted. The subject studied the instructions and answered the statement reflecting their opinion by on his choosen answer. The duly answered questionnaires were collected back and scored as per the methods of respective scales.

The inventory consists of 42 items which are related to self confidence, negative energy, attention control, visual and imagery control, motivation level, positive energy, and attitude control. The inventory was scored with help of scoring. Key the rating scale with five different angles has been given to subjects to choose the response are put tick mark ( □ ) on his choosen answer. The item number 1, 8, 15, 22, 29, 36 measures self confidence item number 2, 9, 16, 23, 30, 37 measures negative energy. The item number 3, 10, 17, 24, 31, 38 measures attention control. The item number 4, 11, 18, 25, 32, 39 measures visual and imagery control, item number 5, 12, 19, 26, 33, 40 measures motivation level, item number 6,13, 20, 27, 34, 41 measures positive energy. And item number 7, 14, 21, 28, 35, 42 measures attitude control.

The inventory consists of direct and indirect questions. Direct questions score according to existing procedure (ie 1,2,3,4,5) and indirect questions score in reverse order (ie, 5,4,3,2,1).

**ANALYSIS OF INTERPRETATION AND RESULTS OF THE STUDY**:

The data collected on mental toughness of Kho-Kho and kabaddi players were analysed statistically to identify significantly differences, if any by applying independent't' test. The level of confidence was set at .05 level, which was considered appropriate for this study. The analyses of the data reveal that there was no significant difference between Kho-Kho and Kabaddi players in mental toughness. In the self confidence and attitude control Kho-Kho players were significantly better than Kabaddi players. In the remaining five variables Negative energy, Visualization imaginary control, Attention Control, Motivation Level, Positive Energy there was no significant difference between Kho-Kho and Kabaddi players among all the variables in attention control Kabaddi players are better than Kho-Kho players but not up to the significant level.

Investigator found there is no significantly difference between Kho-Kho and Kabaddi players on selected mental toughness variables. However investigator found difference in some of the variables between Kho-Kho and Kabaddi players, but there are not at significant level. According to the data Kho – Kho players have more self confidence and attitude control compare with Kabaddi players whear as kabaddi players have more attention control than Kho-Kho layers the investigator felt that since the Kho-Kho game doesn't involves more aggression and it involves more rules and regulation than Kabaddi may be a reason for better attitude control than kabaddi.

In psychological aspects self confidence is more essential for every players, but it may very player to player and event to event and it also depend lot of psychic factors. In kabaddi the playing area is lesser than Kho-Kho field. And when raider enters into opponent court all seven players will be alert in order to face the raiders attack. Raider will be more attentive to face the attack of anties, more over challenge takes places face to face between anti and raider, where as Kho-Kho when attacker, attacking defender the remaining players on the field or less attentive. More over in Kho-Kho attack take from behind. So this may be a reason for pure attention control in the Kho-Kho players than Kabaddi players.

Finally researcher would like to advice coaches, physical trainers to concentrate more on attention control through standard means and methods.

**FINDINGS OF THE STUDY:**

The results of study felicitate to the following conclusions.

There was no significant difference Kho-Kho and Kabaddi players in mental toughness.

Kho-kho players were significantly better than kabaddi players in self confidence and in attitude control.

There was no significant difference between kho-kho and kabaddi players in negative energy, visualization imaginary control, Attention control, Motivation Level and Positive energy.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp7-8**
**Journal Impact factor 0.5190**

# Performance Of Athletes Leg Motion

**Yadaiah B and Krishna Murthy P**
**Government High School, Kachiguda, Hyderabad**
**Z.P.H. School, Nemmani, Nalgonda District. A.P. India**

**ABSTRACT :**
40 male athletes of age between 19 to 25 years from Government College of Physical Education, Hyderabad were considered as subjects. Their anthropometric measurements and speed were measured. Standard anthropometric kit was used to measure the anthropometric measurements of athletes. The analyses of t-tests were computed to find out the significant difference between anthropometric measurements and kinematic parameters of athletes. Results & Discussion: Angular momentum was showing a high correlation with power (0.496) followed by weight (0.331) and height (0.331), however, the speed (0.209) did not yield any significant association. Angular velocity was showing a high correlation with speed (0.816) followed by height (0.528) and weight (0.528), however, the power (0.470) shown a moderate significance. Angular momentum was showing a high correlation with speed (0.774) followed by height (0.544), however, the power (0.567) shown a moderate significance. Conclusion: The interrelationship between speed and power of running has shown a significantly positive association in relation to their kinematic parameters. The kinematic parameters have shown a greater influence on the leg of the athlete which was finally given a cylindrical shape of the leg which is always appropriate in generating the leg motion of the athlete.
KEY WORDS : Equilibrium, Motion, Angular momentum, Angular velocity, Kinematic parameters

**INTRODUCTION :**
Motion requires some force to produce it.The location of the point of application of force to an object determines the type of motion resulting.Most human motions are rotator.The articulations of a segamented object determine the type of motion which can take place.The type of support given any object determines the type of motion which can take place.
Motion is usually thought of as an observable change of position. This definition limits motion to that which is perceived by the eye and thereby fails to be all-inclusive. There are certain movements which proceed to slowly that the changing position is not perceived. Likewise, motion in space without a point of reference may not be perceived readily. At the other extreme, motion may take place so rapidly that detail or even the motion itself is not clear. For example, the propeller blade of an airplane turns so rapidly that one sees only the blurred circle, not the moving blade. For observational purposes, fast movement is often reduced to slow-motion film or other pictorial records.Since motion is of change in position it must be a term definiting change relative to something else. For example, the fingers flex on the palm, the elbow flexes on the upper arm. The pedestrian moves slowly with respect to the sidewalk, but the runner moves quickly around the track. This introduces a qualitative variation in the movement that may be beyond the observable range at both extremes.
Bradshaw E.J. Maulder P.S. Keogh J.W. (2007) study quantified biological movement variability on the start and early acceleration phase of sprinting. Ten male athletes aged 17-23 years (100-m personal best: 10.87+/-0.36s) performed four 10-m sprints. Two 250-Hz cameras recorded the sagittal plane action to obtain the two-dimensional kinematics of the block start and initial strides from subsequent manually digitized APAS motion analysis. Infra-red timing lights (80Hz) were used to measure the 10-m sprinting times. The coefficient of variation (CV%) calculation was adjusted to separate biological movement variability (BCV%) from estimates of variability induced by technological error (SEM%)for each individual sprinter and measure. Pearson's product – moment correlation and linear regression analysis were used to establish relationships between

measures of BCV% and 10-m sprint start performance (best 10-m time) or 10-m sprint start performance consistency (10-m time BCV%) using SPSS version 12.0 Measurement error markedly inflated traditional measures of movement variability (CV%) by upto 72%. Variability in taks outcome measures was considerably lower than that observed in joint rotation velocities. Consistent generation of high horizontal velocity out of the blocks led to more stable and faster starting strides.

**METHODOLOGY :**

Sample : 40 male athletes of Government College of Physical Education, Hyderabad, were considered as subjects. All subjects of the age between 19 to 25 years. Their anthropometric measurements and speed were measured. Tools : Standard anthropometric kit was used to measure the anthropometric measurements of athletes.Data Collection Procedure : The investigator collected the data separately for anthropometric measurements. The subjects were measured with two categories namely. (i) anthropometric measurements and (ii) kinematical parameters and fitness test (100m speed) was administered. The data was collected accurately for the total sample selected. The data collection procedure was completed in six months period. The video analysis was taken during the measurement of anthropometric measurement and conducting the tests for kinematic parameters.Statistical Techniques Used : The data collected in this study was subjected to statistical analysis with appropriate use of SPSS package. The descriptive statistics were taken into consideration standard deviations, mean ranks and correlation. The analysis of t-tests were computed to find out the significant difference between anthropometric measurements and kinematic parameters of athletes

**RESULTS & DISCUSSION :**

Angular momentum was showing a high correlation with power (0.496) followed by weight (0.331) and height (0.331), however, the speed (0.209) did not yield any significant association. Angular velocity was showing a high correlation with speed (0.816) followed by height (0.528) and weight (0.528), however, the power (0.470) shown a moderate significance. Angular momentum was showing a high correlation with speed (0.774) followed by height (0.544) and weight (0.544), however the power (0.567) shown a moderate significance.

**CONCLUSION :**

Motion is the prime element in most sports. It is, therefore, essential to know the laws that govern or describe motion if the coach or athlete is to obtain from the motion the most efficient and effective results that may be developed. In order to know how to move most effectively, one must know the why of the movement.An applied to athletic activities, this has significance in the integration of the movements of various parts of the body in the execution of techniques and in the economy of effort. Direction, of course, is either vertical or horizontal or at an angle with the vertical or horizontal. To understand the real effect of direction of motion in the outcome of an effort, an understanding of vectors (which involves trigonometric functions) is necessary.Keeping in view the importance of leg motion in enhancing sports performance an attempt has been made by the investigator to probe the influence of kinematic parameters with regards to leg motion.The interrelationship between speed and power of running has shown a significantly positive association in relation to their kinematic parameters. The kinematic parameters have shown a greater influence on the leg of the athlete which was finally given a cylindrical shape of the leg which is always appropriate in generating the leg motion of the athlete.

**BIBLIOGRAPHY :**


Beatic P, Isaacson K, Riddle Dl., and Rothstcin JM (1990), “Validity of derived measurements of leg-length differences obtained by use of a tape measure”. Phys Ther. 70(3):150-7.

Ferris DP, Liang K, Farley CT (1999), “Runners adjust leg stiffness for their first step on a new running surface”. J.Biomech., 32(8):787-94

Kim YW, Lee SH, Kim DL, Do YS, Lee BB (2006), “Risk factors for leg length discrepancy in patients with congenital vascular malformation”. J Vasc Surg. 44(3) : 545-53.

Nisson. J., THorstensson, A and Halbertsma.J. (1985), “Changes in leg movements and muscle activity with speed of locomotion and mode of progression in humans”. Acta Physiol Scand, 123(4) : 457-75.

Young RS, Andrew PD, Cummings GS., “Effect of simulating leg length inequality on pelvic torsion and trunk mobility”, Gait Posture, 11 (3) : 217-23

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp9-10**
**Journal Impact factor 0.5190**

# Alternative Career Paths in Physical Education, Fitness and Exercise.

**Dr.R.M.Hiremath.**
**Asst.Prof.In Physical Education**
**Basaveshwar Science College,.Dist-Bagalkot State-Karnataka.**

## Introduction

During the past three decades, alternative professional preparation and certification programmers have expanded within the field of physical education. Societal trends; the media demographics have dictated these changes. The Indians are increasingly becoming interested in maintaining health and fitness. Even the term "physical education", has gone through a transformation. The physical education today includes exercises and sport sciences', kinesiology, health promotion and human performance and sport fitness and leisure time activities and studies. The contemporary profession examines the scenario with various factors which suggests the increase in the scope of career opportunities for physical education professionals.

## Development of career paths

Prior to the 1999s, physical educational professions in India (elsewhere perhaps prior to 1970s) were primarily engaged in the traditional roles of physical education teachers and/or coach. we recall with gratitude that in 1970 ,Kenneth H.cooper introduced the aerobics way to the general public ,addressed the benefits of exercise as a lifetime activity .Jackie Sorenson (aerobic dance) and Jim fix (running) were also physical activity pioneers in the early 1970s and helped to further that idea . Within the next few years, jobs began to emerge In health cubs and corporate fitness facilities and in India the similar trend appeared after 1990 though there were some professionals employed in similar jobs even in late sixty.

I recall some professional friends passed from U.C.P.E in early seventies took up jobs with hotel industry which in those days was not the usual practice.

The concept of wellness is entering slowly

Though the concrete data of Andean scenario is not available but the observations and little surveys gave distinct picture that the growth of fitness and programs have resulted in additional jobs for exercise and sport professionals as exercise specialists, corporate fitness directors, wellness consultants. a need for additional physical education professionals in these alternative career is being created.

## Media and professional growth

The world media also had profound influence on the broadening of physical education career opportunities. With the advent of satellite capabilities and the increase in cable television stations such as DD Sports, ESPN, STAR sports, STAR cricket, NEO prime TEN sports, NEO sports, TEN sports, TEN action, local cable networks and dish networks. The media has become major factor in shaping and molding Indian's increased acceptance of exercise and physical activity. The media has given the public an entirely new perspective on exercise and physical activity in terms of acceptability and job possibilities.

Emergence of professional preparation and certification programs

As job opportunities are expanding, professional knowledge is increasing, and the equipments area also becoming becoming more sophisticated, there is greater need for specialists who can put theory into practice. The ability to draw knowledge from strong scientific foundations continues to be paramount as students prepare for careers in physical education, exercise and sport.

The courses such as anatomy and physiology, exercise physiology, kinesiology, sports medicine and other courses in the study of human movement have provided these scientific foundations. In addition, the professionals began acquiring specialization in a specific aspect of exercise and

sport such as cardiac rehabilitation and sports marketing , though this is just the beginning in India but in western part of the globe this has come up to considerable level.
Due to the variety of academic programs available , in 1988 the national association for sport and physical education (NASPE),an association of the American alliance for health , physical education , recreation and dance (AAHPERD) ,developed specific academic standards for students preparing for careers in exercise and sport. these standards provide students "with entry level skills and knowledge to competently function in a wide range of fitness employment opportunities ".in addition to the standards for programs preparing undergraduate students for careers in physical education and fitness, many agencies have compiled a listing of academic programs in exercise and sport.Along with college and university based professional preparation programs, many professional organizations now provide exercise and sport credentialing opportunities.Thought: what is our professional responsibility?
As far as I am concerned, seldom is the opportunity for change so desperately needed.
Members of the emerging profession must ask themselves," Who are we, and what is our purpose?" and, infact, seldom have so many good college teachers failed to acknowledge the cultural change before them. This fact alone is a significant loss in confidence in those who profess to nurse and /or build the curricula of job opportunities through their teaching. Yet despite the hardships of our students when they graduate, those who enjoy tenure continue to do so while their students have a hard time in finding a job to secure finances. Today's professors are faced with the challenge of not just shared values and education but the question of careers, too. Whether well like it or not, the current system is not working. The caveat here is critical: college teachers must come to understand that professional programs of study are grounded in ethical reasoning, moral concerns and values that reflect upon the students and the profession. Why?" a code of ethics and social issues; it communicates to employees (members) what the institute (organization) stands for"

**Physical education-academic discipline ?**

Is it academic discipline or should we dare calling it so? Or can it be confidently and succinctly be called or called or labeled as academic discipline. Wait a minute and before jumping on to conclusion please think twice and do bit of introspection.
I have been pondering over the issue for well over a decade and some how believe that if the society feels physical education is nothing more than some games and physical activities for recreating and fun, then I am inclined to believe that the society may not be entirely incorrect. Well! Does it mean I accept what the society believes, no! i don't belive so because I personally and candidly feel that the noble profession is a serious academic scientific discipline with variety of connotations and physical activities are just one segment of the whole profession but amazingly either owing to ignorance or sheer misunderstanding most of the professionals have accepted it as activities only .Physical education derives information from various scientific disciplines (anatomy, physiology, physiotherapy, kinesiology, physics, sociology, psychology and many more like that which makes it more complex. Physical education: theory and practicalStudents learning physics also work in lab to learn various physics elements through exposure to practical's; we have practical classes in biology and chemistry.I wonder if we can do without practical classes In engineering or medical field but never heard if any one called engineering or medical science as practical's only then why this massage has been sent to our society that physical education is nothing more than activities and shockingly some professionals called it as activated oriented and this reduces the significance of theoretical part. The Germans say "there is no practice without theory "and if it has substance, which I believe has, then how come we have reduced our profession to only activities. The tallest building and even the smallest one before construction was planned on piece of paper, a theoretical plan.

Theory provides the base and deep understanding and without it we would be groping in dark. We keep complaining that the profession hasn't been placed at par with other subjects and lets us not be hypocrite and agree that indeed it is true and I have reasons to believe that it would continue to be so till we realize and recognize it as one of the regular and vital subject and place it on academic front. So I personally believe we need to change the attitude and understanding about the role of this noble profession and unless we succeed in doing so there is not even iota of chance to see it at par with other subjects and command same respect.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp11-13**
**Journal Impact factor 0.5190**

# The Effects Of Walking And Jogging Programme On Muscular Endurance And Flexibility Among University Women Students

***Miss. M.Latha And **Dr .P. V. Shelvam**
***Ph.D Research Scholar,Dept.of Physical Edn and Sport Sciences, Annamalai University**
**** Professor, Department of Physical Education and Sport Sciences, Annamalai University**

## ABSTRACT
The purpose of the study was to find out the effects of walking and jogging on selected physical fitness components. To achieve this purpose of the study, sixty overweight women studying in various faculties of Annamalai University, Annamalainagar, Tamilnadu, India, during the academic year 2010-2012 were randomly selected as subjects and their age ranged from 18 to 25 years. They were divided into three equal groups. Each group consisted of 20 subjects. Group I underwent walking, group II underwent jogging, and Group III acted as control who did not participate in any training. The experimental groups underwent their respective training programme for three days per week for twelve weeks. Among the physical fitness variables, the following variables such as muscular endurance (Bent-knee sit-ups) and flexibility (Sit and Reach Test) were selected as criterion variables. The data were collected at prior and immediately after the training programme for each criterion variables. Analysis of covariance (ANCOVA) was applied to analyze the data. Since three groups were selected, whenever the 'F' ratio for adjusted post test was found to be significant, scheffe's test was used as post hoc test to determine which of the paired means difference was significant. In all the cases, 0.05 significance level was used to test this significance. The results of the present study has revealed that there was a significant difference among the walking group, jogging group, and control group on muscular endurance and flexibility. Joggingwas better than walking to increase muscular endurance.

## INTRODUCTION
Physical is relating to body. It may relate to any one or all of the bodily characteristics. It may be physical strength, physical endurance, physical fitness, physical appearance or physical health.A well directed programme of physical education leads to healthful living, social efficacy, good physical health, and worth use of leisure time. The authors share their exhilarating and intoxicating encounter, and life – long friendship with fitness.People who are overweight, very inactive, or who are over 35 may encounter orthopedic problems of the legs when they begin a program of jogging. For this reason a regulated program of walking geared to gradual increase in distance and vigour is one of the most suitable ways for some people to begin a fitness program. Further more previous ligament or joint problems may be aggravated again if the activity is too strenuous at the start. So, if you are a person who has been very inactive, you should consider the following suggestions for your physical fitness program.

A few years ago we tested an obese student while he walked on the tread mill at a speed of 3.4 mph. His heart-rate response to this work load was abnormally high for this task, over 160 beats per minute. Also, because of his overweight condition, he was expending over 15 calories per minute, which is a relatively high caloric cost for walking so, this young man walking was a very strenuous task and it provided a sufficient work load at the start of his training program. The purpose then, is to provide an exercise stress by brisk walking. The rate of one's adjustment to the walking after a few workouts will determine the readiness to proceed to a jog-walk-program. Thus, the following suggestions are for people who are in very poor physical condition because of prior inactivity or an overweight condition.[1]

## METHODOLOGY
The purpose of the study was to find out the effects of walking and jogging on muscular endurance and flexibility among university women students. To achieve this purpose of the study, sixty overweight women studying in various faculties of Annamalai University,

Annamalainagar, Tamilnadu, India, during the academic year 2010-2012 were randomly selected as subjects and their age ranged from 18 to 25 years. They were divided into three equal groups. Each group consisted of 20 subjects. Group I underwent walking, group II underwent jogging, and Group III acted as control who did not participate any training. The experimental groups underwent their respective training programme for three days per week for twelve weeks. Among the physical fitness variables, the following variables such as muscular endurance (Bent-knee Sit-ups), and flexibility (Sit and Reach Test) were selected as criterion variables. The data were collected at prior and immediately after the training programme for each criterion variables. Analysis of covariance (ANCOVA) was applied for analyze the data. Since three groups were selected, whenever the 'F' ratio for adjusted posttest was found to be significant, scheffe's test was used as post hoc test to determine which of the paired means difference was significant. In all the cases, 0.05 level was used to test this significance.

## RESULT

Table I
ANALYSIS OF COVARIANCE ON MUSCULAR ENDURANCE AND FLEXIBILITY OF WALKING JOGGING AND CONTROL GROUPS (ADJUSTED POST TEST)

| TEST | WALKING GROUP | JOGGING GROUP | CONTROL GROUP | SOV | SS | DF | MS | 'F' ratio |
|---|---|---|---|---|---|---|---|---|
| Muscular Endurance | | | | | | | | |
| Adjusted Mean | 17.43 | 19.78 | 10.54 | Between | 849.71 | 2 | 424.86 | 94.91 |
| | | | | Within | 250.69 | 56 | 4.48 | |
| Flexibility | | | | | | | | |
| Adjusted Mean | 18.08 | 18.17 | 10.37 | Between | 588.29 | 2 | 294.15 | 68.01 |
| | | | | Within | 242.19 | 56 | 4.33 | |

Significant at .05 level of confidence
(The table value for significance at .05 level with df 2 and 57 and 2 and 56 are 2.78 and 2.79 respectively).

**Table II**
SCHEFFE'S TEST FOR DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEAN ON MUSCULAR ENDURANCE AND FLEXIBILITY.

| Muscular Endurance | | | | |
|---|---|---|---|---|
| WALKING GROUP | JOGGING GROUP | CONTROL GROUP | MS | CI |
| 17.43 | 19.78 | - | 2.35 | 1.68 |
| 17.43 | - | 10.54 | 6.89 | 1.68 |
| - | 19.78 | 10.54 | 9.24 | 1.68 |
| Flexibility | | | | |
| 18.08 | 18.17 | - | 0.09 | 1.65 |
| 18.08 | - | 10.37 | 7.71 | 1.65 |
| - | 18.17 | 10.37 | 7.8 | 1.65 |

From the results it was clear that, walking and jogging, significantly improves the muscular endurance and flexibility. To find out the paired mean difference Scheffe's post hoc test was used. The result of post hoc test shows that jogging was better than walking and control to improve muscular endurance and flexibility. However walking improves muscular endurance and flexibility than control group.

## DISCUSSION

It is important to maintain good form and posture while you walk. Keeping your head up your pelvis back and your abdomen tight will improve your respiration and blood circulation. Many people exhibit, poor posture while walking, poor posture makes unbalance and forces the muscles in your head and body to strain to keep your balance. In addition to increasing fatigue, poor walking habits may result in ship splints, lower back pain, neck and shoulder aches.

The jog – walk – jog technique conditioning is the simplest method for starting a program for developing physical fitness.[2]

Physical fitness is the capability of the heart, blood vessels, lungs and muscles to function at optional efficiency, which means the most favorable health needed for the enthusiastic and pleasurable participation in daily tasks and recreation activities.

Majority opinion holds that physical fitness should be considered as one aspect of total fitness which has several components, it is electoral, emotional, and social, as well as physiological, improvement in total fitness which leads to more effective living.

Mathews explains that the term physical fitness is somewhat exact in its meaning, indicating to us specific components, we might measure, to reflect a person's fitness which include muscular strength, muscular endurance, muscular flexibility cardiovascular (or) cardio respiratory fitness and neuro – muscular coordination.

The benefits of physical fitness are numerous the person who is physically fit has greater amount of strength, stamina and improved sense. Well developed muscles, safeguard bones, internal organs and joints keeping improved limb and cardio-respiratory function.

It is necessary for every individual to be physically fit to perform their work with ease, and to take part, in various activities effectively. Everyone should be fit enough to participate in physical activities to develop the different physical fitness components.[3]

Doctors recommend walking to most patients from the obese to the ones with cardiac conditions. That is because most of us. Indians, do not know swimming. Its only drawback is that it requires more time to get the required aerobic effect. But that is a small price to pay for good health. The advantage is you can insert it into your daily routine. For example, you can walk from the railway or bus station to your home every evening or the reverse in the morning.

## CONCLUSION

Hence it was concluded that walking and jogging exercise may improve muscular endurance and flexibility of overweight college women.

## REFERENCES

Ajmer singh, et al., "Essentials of physical education," (New Delhi:Kalyan Publishers, 2003). pp.9 - 24

"Scott K. powers and Edward T. Howley, Exercise Physiology Theory and Application to Fitness and Performance (2nd edn). (Madison: WCS Brown & Benchmark publishers, 1994), 338-339.

Charles A. Bucher and William F.Prentice, "Fitness college and life," (Toranto: C.V. Moby Company, 1985),P.27.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp14-18**
**Journal Impact factor 0.5190**

# Biomechanics Of Sprinting

**Jayaraman.S, Athletics Coach, Pondicherry University, Puducherry**

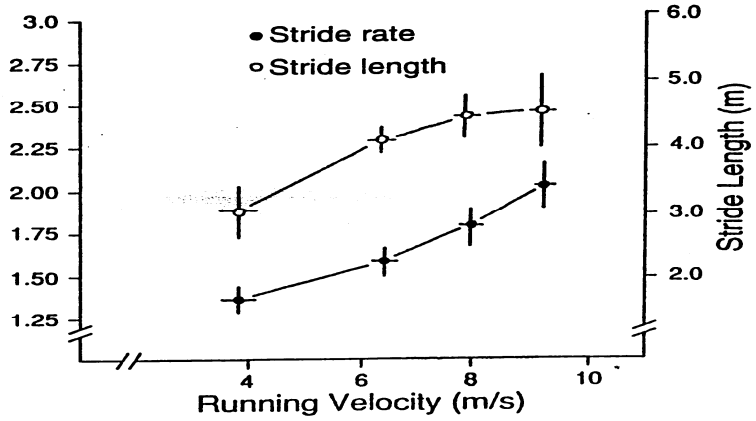
**ABSTRACT**
Now a days, sports and games become more and more advanced and heavy competitive in nature in all type of sports. It happens due to the advances in technology and its application in each and every sequence. The demand and rectifications are nullified through technological advancement and taken in to the next level. Upgrading the knowledge and application of this subject is very vast and taken sports in the peak level. Science applies in sports products such as shoes, equipments, Balls, Terrains , scoring system, photo finishing system, and enhancing the performance. The goal of sprinting is to reach and maintain high top speeds to cover a set distance in the shortest possible time. In order to achieve these high velocities, it has been found that sprinters have to apply a large amount of force onto the ground to achieve the desired acceleration rather than taking more rapid steps.Good technique is also characterized by the minimization of breaking forces, effective arm, leg and Torso movements and high level of coordination of the whole body movements. According to the British Amateur Athletic Board's Director of Coaching, Frank W.Dick, in his book sprints and relays, the most depressing piece of coaching news is that "Sprinters are born not made". Though speed cannot be trained but could be developed and improved with the knowledge and support of Bio mechanics.

**Keywords:** Velocity, running technique, stride length, stride frequency, ground reaction force

**Introduction:**
The primary responsible for the sprinting is to maximize running velocity which results from the propulsion of the body forward. Running velocity is determined by stride length and stride frequency. To run faster an athlete must increase one or both of these while maintaining an optimal relation between the two. The objective of the technique throughout the race is to direct the optimum force into the ground (in order to optimize the stride length) in the shortest period of time (in order to keep the time period required for each stride short making it possible to increase stride frequency). Good technique is also characterized by the minimization of breaking forces, effective arm, leg and Torso movements and high level of coordination of the whole body movements.Starting Mechanics: Starting is the most important phase in sprinting. Sometimes it may decide the winner of the race. On your mark and set positions are vital in sprinting .The proper angles have to be maintained till an athlete push off from the blocks. The main aim of start is to create optimally large horizontal component of accelerating forces in the shortest possible time and to maintain the frequency of the applied force after leaving the block. Crouch start allows the runner through proper position of the body in set position to respond most quickly to the gun and start the race. The start however, must not be thought of as a separate part of the while race. It is an integral part of the total race and consequently is not distinct from the entire sprint event. "The important thing is to reach top speed as quickly and smoothly as possible and this can be done if the rhythm of the stride begins actually in the starting blocks" The bio mechanical principles applied when an athlete is in on your mark position. The product of the force (F) and the time (t) is known as the impulse of force. Impulse = F x T
A useful relationship, impulse – momentum relationship, can be obtained by substitution as follows: F=ma... m=mass, a=average acceleration however, a = (vf-vi) / t
Vf= Final velocity Vi= Initial velocity
Therefore, F=m (vf-vi) t Or F = (mvf-mvi) t Hence, Ft = mvf-mvi

This equation states that the impulse of the force is equal to the change in momentum that it produces. When an athlete is in the starting blocks his / her initial momentum is zero (mvi=O). In addition the mass of the athlete is constant and because of this the velocity of the athlete on leaving the blocks is directly proportional to the magnitude of the impulse exerted on the blocks but opposite in direction. The greater the impulse exerted the greater the velocity of the athlete.

Fig. 1 Stride frequency and Stride length

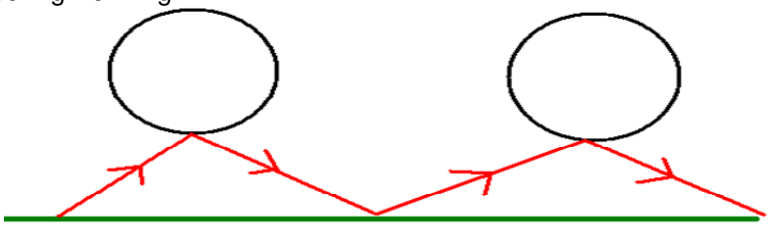



As running speed increases, both stride rate and length become higher. Initially, at relatively low speeds, the changes are proportionally greater in length than in rate. Near maximum speed, however, rate increases more than length. The explanation for this is in terms of energy efficiency. In energy terms, it is more efficient to increase speed by taking longer paces rather than taking them more rapidly.

Energy during running (The bouncing ball model)

Contrast this with the rolling lemon model for walking. Here, KE and PE are both high at the top of the "bounces" (equivalent to the middle of the flight phase).During ground contact, KE and PE are lower, and energy is stored in elastic tissues. So for running, we have to consider interconversion between *three* different forms of energy i.e. PE, KE and Elastic energy

Fig .2 Energy during Running



**Bio mechanical principles**

Running movement has two main phases i.e., supporting and non supporting phase. Supporting phase can be divided into

i. Planting or touch down ii. Amortization or shock absorption iii. Get away or shock absorption

Planting or touch down

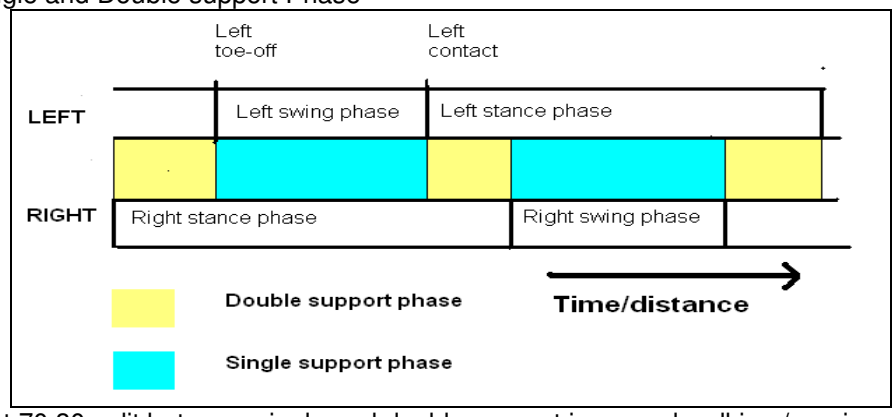
When a foot strike the ground is known as planting. At this point skilled sprinters attempt to prevent a breaking action and exert to restore the horizontal velocity of the moving body's mass. The folded leg (other leg) rotates forward and maintains flexion until toes pass the supporting leg knee. The better sprinter plant the foot in front of the body's projected center of mass by about 20-40 cm. This gives the leg more distance to apply effort as it propels the body's C.G. forward while having the knee slightly flexed and stabilized. This action during following rotation of the supporting leg over the ground gives the body more distance to travel horizontally.This makes a runner more capable to better utilize the mechanical advantage of effort applied over the longer and sprinting speed. To benefit from this action the sprinter has to concentrate on strength

improvement in gluteus hamstring (knee flexor and hip extension region) and quadriceps muscle (knee extensor region).

Amortization or shock absorption

This phase starts from the movement when foot contacts the ground and ends when the movement of body's center of mass downward is stopped. This phase is characterized by 140 to 150 flexion in the knee and 80 -85 flexion in the ankle. Both angles provide optional condition for quick drive. The athlete generate more force from the double support phase

Fig. 3 Single and Double support Phase




About 70:30 split between single and double support in normal walking /running

Get away or shock absorption

It starts from the vertical movement to leaving ground. In this phase sprinter develops maximum push off force by extension of ankle, knee and hip joint. Thus the driving leg is a almost straightened and body C.G get possible horizontal. It is very important phase running and if it is performed technically correct the sprinter has chance to gain maximum horizontal velocity.

**Ground reaction force**

Action force

It is a push exerted on ground by foot and results from the sum of the following Body weight and impact force of foot on ground (at foot strike only) and "pushing force" from contraction of extensor muscles (towards end of stance phase).

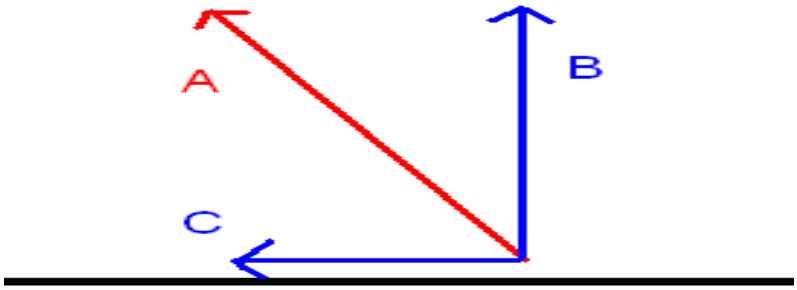
Reaction force and time

It is a push exerted by ground on foot, as a consequence of Newton's 3rd Law. Equal magnitude, opposite direction, same point of application as action force. If line of the reaction force does not pass through a joint, it will produce a torque about that joint.

Reaction time can be divided into two Premotor time (the time from the gun until the onset of EMG activity in skeletal muscle) and Motor time (delay between the onset of electrical activity and force production by the muscle).Payne and Blader (1971) described an average Reaction time of about 0.09 seconds from the sound of the gun and the first rise by the force trace - this time was considerably faster than reaction times of the same athletes obtained by conventional methods. Various conclusions have been made regarding reaction times, they include:

i. In all sprint events, reaction times of best athletes is less than 200m/sec.
ii. In the same events, reaction times of females are greater than those of males.
iii. Reaction times grow in proportion to the length of the race.
iv. Reaction time plays only a very small part in the overall race performance.

Fig. 4 Resolving the GRF into vertical and horizontal components




“A” represents the GRF at the moment of foot strike .It is made up of a horizontal component (C) and a vertical component (B). In terms of force vectors, we can write : A = B + C

Arm action

Contrary to the findings of Mann et al (1981) arm action plays a vital role in both stabilizing the torso and vertical propulsion. Regarding torso stabilization, arm swing serves to counterbalance the rotational momentum created by leg swing, as suggested by Hinrichs et al (1987) .In short, the athlete would have a hard time controlling the rotation of their trunk without arm swing. In fact, it can contribute up to 10% of of the total vertical propulsive forces that a sprinter can apply to the ground. The reason for this is that, unlike the forward-backward motion, both arms are synchronized in their upward-downward movement. As a result, there is no cancellation of forces. Efficient sprinters have an arm swing that originates from the shoulder and has a flexion and extension action that is of the same magnitude of the flexion and extension occurring at the ipsilateral shoulder and hip.

Non Supporting or Air Born

It starts from the toe coming of the supporting area to end when the other touches the ground. After the foot clears the ground, the leg kick back and high knee lift with flexion at the hip, knee and ankle joints. The flexed joint shortens the whole lower limb complex reducing its moment of inertia about the hip joint. This permits maximum angular velocity.As the driving foot leaves the ground and begins the non supporting phase heal is pulled to the butt. As the high knee action begins and the lower leg advances through in a swinging phase. The foot becomes ‘cooked’ or dorsiflexed, which decreases the moment of inertia while increasing angular velocity. It should be noted that the recovery foot is pulled through above the driving knee. A loose quad will allow this to happen, which will ultimately increase the angular velocity of the whole lower leg.Synchronization of the arms and legs are critical to prevent rotation, which in turn result in a loss of balance and timing. The hands should be slightly open and exerted forward to the height of the shoulders and backward to the hip or just slightly behind it. The arm punch forward must stop at the same time the driving leg reaches full extension. Any change in a technique is a change, all upper body rotations must be minimized to keep the shoulder square and running tall in a straight line. At no time do the arms and legs visibly stop moving.During the support and driving phases the athlete exerts vertical and horizontal force against the ground. The equal and opposite reactions that these evoke tend to accelerate the athlete in the direction in which they act. The power drive of the foot will promote a resultant force between the vertical lift of the centre of mass and the horizontal drive of the hip flexors through the legs with the assistance of a vigorous arm drive.

Leaning forward

Slightly leaning forward and running gets an advantage of propelling our body to move further faster and quicker. Simply speaking, in Bolt's running he uses rotation of the body around the point of support under the action of gravitational torque, which in essence is a free falling of the body forward. The key running pose, favourable for performing falling forward and allowing us to integrate all participating forces into one system moving a runner forward, is the Running Pose at mid stance or vertical position. Bolt's calculated average angle in 100m with the time 9.58 seconds was 18.5 degrees with the average step frequency (cadence) 4.28 steps per second (257 steps per minute), and Gay's, with the time 9.71 seconds – 18.4 degrees, and step frequency (cadence) 4.68 steps per second (281 steps per minute).

**Conclusion:**

Proper running form (Bio mechanics) is important to minimize the wasted energy expenditure. With good running bio mechanic, athletes will generate the most speed with the least amount of physical effort. Unless athletes have major bio mechanical faults. Good form will develop unconsciously through repeated practices. The body adopts a running style which is most beneficial to the individual athlete. According to the British Amateur Athletic Board's Director of Coaching, Frank W.Dick, in his book sprints and relays, the most depressing piece of coaching news is that "Sprinters are born not made". Though speed cannot be trained but could be developed and improved with the knowledge and support of Bio mechanics.

**References:**

1. Gerhardt Schmolinsky "Track and Field"Sportverlag Berlin, First edition, 1977, pp134-136
2. Jess Jarver "Sprints and Relays" Tafnews Press, fifth edition 2000 p-23
3. Thomas E.Larkin and et al "Track and Field Coaching Manual"LA84 Foundation, p -210
4.Ken Doherty " Track and Field Omni Book" fifth edition 2007 pp 36-37

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp19-21**
**Journal Impact factor 0.5190**

# Efficacy Of Physical, Mental And Asana Exercises On Physical And Psychological Variables Of Mild Mental Disorders

**Dr.G.VINOD KUMAR**
**Associate Professor, Dept. of Physical Education and Sports, Pondicherry University**

## ABSTRACT
The purpose of the study is to find out the efficacy of physical, mental and asana exercises training of mild mental disorders. For the purpose of the study the fifteen (15male) mild mentally disorder children were taken as subjects from a special school of Karunalaya for the children at Veerapandipatinam, Tiruchendur,Tamilnadu, India, their age between 10 to 15 years. To find out the significant improvement by through physical, mental and asana exercises the physical variables such as muscular strength (MS) and stability (SB) and psychological variables such as intelligent quotient (IQ) and self-concept (SC) were selected. The subjects were undergone training daily morning from Monday to Friday between 7.00am to 8.00am for nine weeks at the special school. The physical exercises taught to the subjects were stretching exercise, circle ball passing, shuttle run, clock wise and anticlockwise run, the mental exercises were meditation, finding the objects, Listening music, toy games, dancing (watching) and the asana exercises were ardha halasanam, shalabanana, patchimothaasana, janu sirasasana, padha hasthasana, trikonasasna, vakrasana, sarvangasana. The selected tests for muscular strength sit ups test (bent knee) and stability was tested with stroke stand test. The intelligent quotient Wechsler IQ test and the self-concept Student Self-Concept Scale (SSCS) questionnaire were used. The obtained data were statistically analyzed with dependent 't' test. The analysis of the data revealed that the muscular strength, stability, intelligent quotient and self-concept was 6.41, 5.15, 3.28 and 8.79 (significant at .05, table value 1.761) since, the obtained 't' ratio value of all criterion variables were greater than the table value. It was concluded that the efficacy of physical, mental and asana exercises had significantly improved MS, SB, IQ and SC on mild mental disorder children.
**Key words:** Muscular Strength (MS), Stability (SB), Intelligent Quotient (IQ), Self-concept (SC)

## INTRODUCTION
Children with mental disorder differ least from non-disorder children in their physical and motor characteristics. Although most children with mental retardation exhibit develop mental motor delays these seem to be related more for the cognitive factors of attention and comprehension rather than to physiological or motor deficits. As a group of children with mental retardation walk and talk are slightly shorter and usually are more susceptible to physical problems and illnesses than other children. In comparative studies children with mental disorder consistently score lower than non-disorder children on measured of strength endurance, agility, balance, running speed, flexibility and reaction time. Regardless of their intellectual capacity, MR people have a wide range of athletic ability. Some mentally retarded people are well coordinated; some highly intelligent people are clumsy. Mentally retarded people may have greater success in individual and dual sports than in team sports. Competition is often highly motivating, and this statement has been approved by the Council on Child and Adolescent Health. The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed.Variations, taking into account individual circumstances, may be appropriate.Mental retardation based on IQ testing, mildly retarded people are those whose fall in the 50 – 69 IQ range, these people have often been referred to as the educable mentally retarded (MR).

## METHODOLOGY

### Selection of Subjects

The fifteen mild mentally disorder children were taken as a subject for this study, their age between the age group 10 to 15 years. Subject pool was taken from a special school of Karunalaya for the children at Veerapandipatinam, Tiruchendur, Tamilnadu, India.

### Selection of Variables

To find out the significant improvement by through physical, mental and asana exercises the physical variables and psychological variables were selected. The physical variables are muscular strength (MS) and stability (SB) and psychological variables are intelligent quotient (IQ) and self-concept (SC).

### Training Programme

The subjects were undergone training daily morning from Monday to Friday between 7.00am to 8.00am for nine weeks at the special residential school. The total training period was nine weeks. The subjects were well explained and clearly demonstrated all the activities by the investigator. The mirror method was used for practicing all the physical, mental and asana activities. The physical exercises taught to the subjects were stretching exercise, circle ball passing, shuttle run, clock wise and anticlockwise run, the mental exercises were meditation, finding the objects, listening music, toy games, dancing (watching) and the asana exercises were ardha halasanam, shalabanana, patchimothaasana, janu sirasasana, padha hasthasana, trikonasasna, vakrasana, sarvangasana. All the participants were tested two days before and immediately after the nine weeks of experimental period on the selected dependent variables.

### Test Administration

The present study was to find out the efficacy of physical, mental and asana exercises training of mild mental disorders. From the availability and feasibility of literature, the following standardized tests were used to collect relevant data on the selected variables and they are presented in the following table.

Selection of Test

| S.No | Dependent variables | Test |
|---|---|---|
| 1. | Muscular strength | Sit ups (bent knee) |
| 2. | Stability | Stroke stand test |
| 3. | IQ | IQ test |
| 4. | Self-concept | Self-concept Questionnaire |

### Collection Of Data

The pre-test data were collected two days before the training programme and the post-test data were collected two days after the training programme. In both the cases the data were collected in single day of the same time and same climatic conditions.

### Statistical Procedure

The fifteen mild mentally disorder children were taken as a subject for this study. The obtained data from the experimental group before and after the nine weeks of training period were statistically analyzed with **dependent 't'-test.**

## ANALYSIS OF DATA

The analysis of dependent 't'-test on the data obtained for physical variables of muscular strength (MS) and stability (SB) and psychological variables of intelligent quotient (IQ) and self-concept (SC) of the pre-test and post-test means have been analyzed and presented in the below table.

Table:PRE AND POST TESTS MEAN, STANDARD DEVIATION AND DEPENDENT 'T' VALUE ON PHYSICAL AND PSYCHOLOGICAL VARIABLES

| VARIABLES | MEAN/SD | | MD | 't' value |
|---|---|---|---|---|
| | Pre-test Mean+SD | Post-test Mean+SD | | |
| Muscular Strength (In Numbers) | 3.60 ± 1.40 | 7.13 ± 3.12 | 3.53 | 6.41* |
| Stability (In seconds) | 9.53 ± 6.39 | 11.63 ± 5.87 | 4.31 | 5.15* |
| Intelligent Quotient (In Point) | 56.13 ± 12.10 | 58.00 ± 13.69 | 1.86 | 3.28* |
| Self-Concept (In Points) | 115.66 ± 12.10 | 130.80 ± 12.49 | 15.13 | 8.79* |

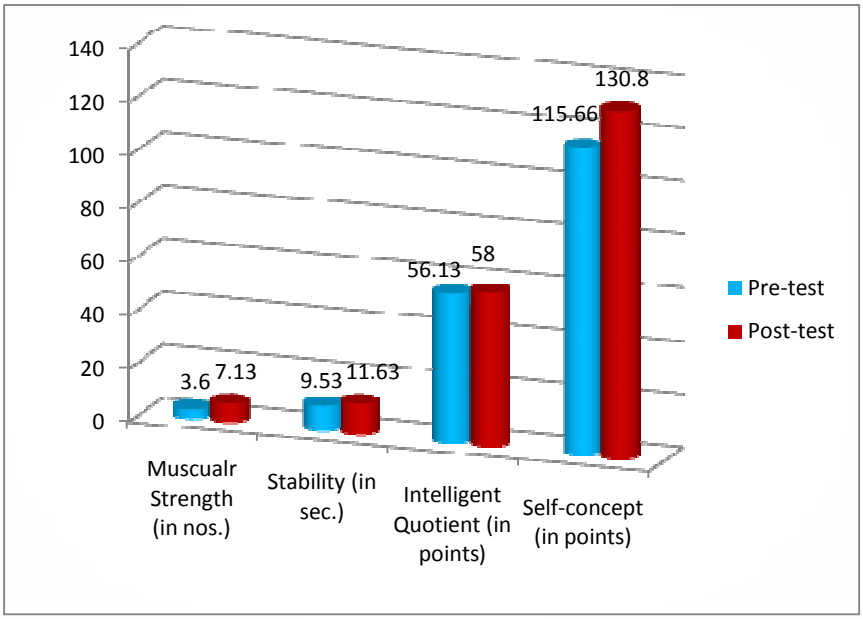
*Significant at .05 level of confidence.

(Table value required for significance at 0.05 level for 't' test with df 14 is 1.761)

## Results and Discussions

The table shows that the obtained dependent 't'-ratio values of muscular strength, stability, intelligent quotient and self-concept were 6.41, 5.15, 3.28 and 8.79 respectively. The table value required for significant difference with df 14 at .05 level is 1.761. Since, the obtained 't'-ratio values of all variables were greater than the table value 1.761, it is understood that muscular strength (MS), stability (SB), intelligent quotient (IQ) and self-concept (SC) had significantly improved by the physical, mental and asana exercises training.

PRE-TEST AND POST-TEST MEAN VALUES OF PHYSICAL, MENTAL AND ASANA EXERCISEs TRAINING ON VARIABLES




## Conclusions

1. The effect of physical, mental and asana exercises had significantly improved physical variables such as muscular strength (MS) and stability (SB) on mild mental disorder children.
2. The effect of physical, mental and asana exercises had significantly improved psychological variables such as intelligent quotient (IQ) and self-concept (SC) on mild mental disorder children.

## References


Brent L Hawkins, et al., (2012), "The influence of a yoga exercise program for young adults with intellectual disabilities, International Journal of Yoga", 5(2):151-6. DOI:10.4103/0973-6131.98244

Angelopoulou, N., et al., (2000), "Bone Mineral Density and Muscle Strength in Young Men with Mental Retardation (with and without Down syndrome)", *Calcif Tissue Int*., 66(3), PP.176-80.

Daniel M. Landers Arizon, (1996), "The Influence of Exercise on Mental Health", *Research Digest*, 2(12).

Eli Carmeli (October 2004), "Can Physical Training have an Effect on Well-being in Adults with Mild Intellectual Disability?", *Behavior Modification*, 4(3), PP.337-354.

He Paul G. Dyment, et.al., (1987), "Mental Retardation and Intellectual Capacity", *Pediatrics*, 80(3).

Lin, J.D., et al., (2010), "Physical Activity and Its Determinants among Adolescents with Intellectual Disabilities", *Res Dev Disabil*., 31(1), PP.263-9.

Alyson Ross, (2010), "The Health Benefits of Yoga and Exercise: A Review of Comparison Studies", The Journal of Alternative and Complementary Medicine, Volume 16, Number 1, pp. 3–12

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp22-25**
**Journal Impact factor 0.5190**

# Effect of Nine Weeks Resistance Training program on Physical Fitness Variables – A study

**Mr.D.BALAMURUGAN**
**Director of Physical Education**
**SVS College of Engineering, Coimbatore**

**Abstract**
The purpose of the present study was to find out the effect of nine weeks resistance training program on physical training program on physical fitness variables. For this purpose twenty men students from SVS College of Engineering, Coimbatore, Tamilnadu with age group of 18 to 22 years, were selects as subjects. They were divided into two groups, each group consisted of ten subjects, in which group – I underwent resistance training, group – II acted as control which did not participate any special training, except their regular curricular activities. The training period for this study was three days in a week for nine weeks. Prior to and after the training period, the subjects were tested for speed, back strength and abdominal strength. The selection criterion variables, such as speed, back strength and abdominal strength. The dependent't' test and analysis of covariance (ANCOVA) was applied as statistical tool. In all cases .05 level was fixed as significance. It was concluded from the results of the study that the training groups had improved on back strength, and had no significant improvement on the speed and abdominal strength.

**Introduction**
Training is not recent discovery in ancient times, people systematically trained for military and Olympic endeavors. Today athletes prepare themselves for a goal through training. Physical training is one of the most important ingredients in training to achieve high performance. The objectives of physical training are to increase the athlete's physiological potential and to develop bio-motor abilities to the highest standards (Tudor O. Bompa, 1999). A program of resistance training develops strength. The basis of all gains in any type of fitness endeavor is the over load principle, which means providing a greater stress or load on the body. For the greatest gain muscular strength and power, the level of resistance should be at or near maximal (IRM) as the competitive season nears. Prior to this, training should approach maximal resistance sin a gradual, progressive, organized manner. Resistance, strength and weight training all have become popular form of recreation as well as method of condition athletes. The term strength, weight and resistance training are all terms which have been used to describe a type of exercise which require s the body's musculature to move (or attempt to move) against some type of opposing force presented by various types of equipment. We use the term resistance training in order to encompass a wide range of training modalities rather than weight training, which really refers to a performance characteristic of muscle function and will be defined as the maximal force a muscle or muscle group can generate at a specified velocity. Resistance training is fast becoming the most popular exercise in the world today. Moderate intensity resistance training has been shown in order to confer health benefits such as favorite changes in body composition and blood lipids (fat) related to heart disease. Moderate resistance training may also help to prevent and treat some type of lower pain and other conditions such as arthritis and osteoporosis.
Speed is a key component of physical fitness which is very important for athlete for high level of performance in competition. Speed is performance pre requisite to do motor actions under given conditions in minimum of time. Speed is the quickness of movement of limb, whether this is the legs of runner or the arm of the short putter. Speed is an integral part of every part of every sport and can be expressed as any one of or combination of, the following: maximum speed, elastic strength, speed endurance. The definition of a speed from a scientific standpoint is simply distance/time, but this is rather simplistic view of speed.

A more accurate definition of speed is this: speed 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.The benefits of abdominal strength and endurance are similar to strength and endurance in other skeletal muscles. Greater abdominal strength increases the amount of force that your abdominal contractions can generate against resistance. Flexing your abs repetitively or sustaining abdominal contractions for longer periods of time requires greater abdominal endurance. The unique benefits of abdominal strength and endurance derive from the function of this muscle group.Leg strength is possibly the most neglected and undervalued component of physical fitness. Lack of leg strength can be a cause of poor performance and inefficient technique can be a possible underlying cause for many of the strain and tear type muscle injuries found in sports. (Rex Hazeldine, 1985).

**Methodology**

The purpose of the study was to find out the effects of nine weeks resistance training program on speed, Back strength and abdominal strength. For this purpose, twenty men students from SVS College of Engineering, Coimbatore, Tamilnadu with age group of 18 to 22 years, were selects as subjects. The selected subjects were divided in to two groups. Group I underwent resistance training and group two acted as a control group. The training period for this study was three days in a week for nine weeks. For every training program there would be a change in various structure and systems in human body. So, the researcher consulted with the experts, then selected the following variables as criterion variables: 1.Speed, 2. Abdominal Strength and 3. Back Strength. The selected criterion variables such as, speed, abdominal strength and back strength, were tested by using and administering, 50 m run, sit-ups and leg dynamometer.

**Analysis Of The Data**

The obtained data from the experimental group and control group before and after the experimental group were statistically analyzed with dependent't' test and analysis of covariance (ANOVA) was applied. The level of confidence was fixed at0.05 level for all the cases to test the hypothesis.

Table I

The summery of mean and dependent't'test for the pre and post test on back strength of experimental and control groups

| Experimental Group | | Control Group |
|---|---|---|
| Pre test Mean | 23.10 | 23.10 |
| Post test mean | 27.80 | 22.45 |
| 't' test | 3.30* | 0.47 |

* Significant at 0.05 level of confidence.

Table II

Analysis of covariance on back strength of experimental group and control group

| Adjusted post test mean | | Source variance | Sum of squares | Degrees of freedom | Mean squares | 'F' ratio |
|---|---|---|---|---|---|---|
| Experimental group | Control group | Between<br>With in | 102.76<br>230.35 | 1<br>17 | 102.76<br>13.55 | 7.58* |
| 27.45 | 22.80 | | | | | |

* Significant at 0.05 level of confidence.

Table III
The summery of mean and dependent‘t’test for the pre and post test on abdominal strength of experimental and control groups

| | Experimental Group | Control Group |
|---|---|---|
| Pre test Mean | 39.60 | 41.60 |
| Post test mean | 42.80 | 41.60 |
| ‘t’ test | 1.04 | 0.00 |

Table IV
Analysis of covariance on abdominal strength of experimental group and control group

| Adjusted post test mean | | Source variance | Sum of squares | Degrees of freedom | Mean squares | ‘F’ ratio |
|---|---|---|---|---|---|---|
| Experimental group | Control group | Between<br>With in | 22.32<br>772.99 | 1<br>17 | 22.32<br>45.47 | 0.49 |
| 43.27 | 41.20 | | | | | |

Table V
The summery of mean and dependent‘t’test for the pre and post test on speed of experimental and control groups

| | Experimental Group | Control Group |
|---|---|---|
| Pre test Mean | 7.43 | 7.06 |
| Post test mean | 7.15 | 7.38 |
| ‘t’ test | 1.68 | 0.552 |

Table VI
Analysis of covariance on speed of experimental group and control group

| Adjusted post test mean | | Source variance | Sum of squares | Degrees of freedom | Mean squares | ‘F’ ratio |
|---|---|---|---|---|---|---|
| Experimental group | Control group | Between<br>With in | 0.37<br>6.70 | 1<br>17 | 0.367<br>0.394 | 0.930 |
| 7.19 | 7.24 | | | | | |

**Results**

From the table I the dependent‘t’ test values between the pre and post means of experimental group and control group were 3.30 and 0.47 respectively. Since the obtained‘t’ test of experimental group and control group is greater than the table value 2.62 with df 9 at 0.05 level of confidence. It is concluded that experimental group had no significant improvement in the performance of back strength. However, control group has no significant improvement in the performance of back strength. From the table II the adjusted post test mean values of back strength for experimental group and control group are 27.45 and 22.80 respectively. The obtained F- ratio of 7.58 for adjusted post test mean is greater than the table value4.45 for df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is significant difference among the post test means of experimental group on the development of back strength. From the table III the dependent‘t’ test values between the pre and post test means of experimental group and control group were 1.04 and0.00 respectively.

Since the obtained‘t’ test value of experimental group is lesser than the table value 2.62 with df 9 at 0.05 level of confidence. It is concluded that experimental group had no significant improvement in the performance of abdominal strength. However, control group has no significant

improvement in the performance of abdominal strength. From the table IV, the adjusted post test means of experimental group and control group are 43.27 and 41.20 respectively. The obtained F-ratio of 0.49 for adjusted post test mean is less than the table value 4.45 for df 1 and 17 required for significance at 0.05 level of confident. The results of the study indicate there is no significant difference among the adjusted post test means of experimental group and control group on the development of abdominal strength. From the table V the dependent't' test values between the pre and post means of experimental group and control group were 1.68 and 0.552 respectively. Since the obtained't' test of experimental group and control group is greater than the table value 2.62 with df 9 at 0.05 level of confidence. It is concluded that experimental group had no significant improvement in the performance of back strength. However, control group has no significant improvement in the performance of speed. From the table VI the adjusted post test mean values of speed for experimental group and control group are 7.19 and 7.24 respectively. The obtained F- ratio of 0.93 for adjusted post test mean is greater than the table value4.45 for df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is significant difference among the post test means of experimental group on the development of speed.

## Conclusions

From the analyses of the data, the following conclusion were drawn

It was concluded from the results of the study, the back strength has improved significantly after the respective training program.

It was also concluded from the results of the study, that there was no significant improvement on speed and abdominal strength after the respective training program.

## References


Tudor O. Bompa, Periodization : Theory and Methodology of Training, (4th ed.,), (Champaign,Illinois: Human Kinetics Publishers, 1999), p.54.

2. Donald K. Mathews, Measurement in Physical Education, (Philadelphia: W.B. Saunders Co., 1978), p. 128.

3. Vladimir M.Zatsiorsky, Science and Practical of Strength Training, (Champaign, Illinois: Human Kinetics Publishers, 1995), p.79.

4. Harahayal Singh, Sports Training and General theory methods (Patiala:NIS Publications,(1984),p-1

5. Weinberg, R., & Gould, D. (2001). Fundamentals of Sport and Exercise Psychology (Trad. Maria CristinaMonteiro). 2nd Ed. Poa: Artmed Editora.

6. Anita Bean, The Complete Guide to Strength Training, London: A and C Black Publishers Ltd. (1997).

7. Hooks, Gene, Application of Weight Training to Athletics, Engle Wood Cliffs: New Jersey, Prentice Hall. Inc. (1962).

Echer, Tom, "Improving Sprinting Speed Through Strength Training", Athletic Journal, Vol. 65, (April, 1975).

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp26-30**
**Journal Impact factor 0.5190**

# Effect Of Plyometric Training And Speed Agility And Quickness (Saq) Training On Speed And Agility Of Male Handball Players

***Mr. BujjiBabu M. and **Dr. P. Johnson**
***Research Scholar**
****Assistant Professor, University College of Physical Education & Sports Sciences**
**Acharya Nagarjuna University, Guntur, Andhra Pradesh**

**Abstract**
The purpose of this study was to investigate the effect of plyometric (PLYO) training and SAQ training for six week on speed and agility of male handball players. To achieve the purpose 30 male handball players were selected randomly from SAI SportsTrainingCentre Sarurnagar, Hyderabad, Andhra Pradesh. The selected subjects were assigned into 3 groups: PLYO training (n=10), SAQ training group (n=10) and control (CON) group (n=10). Speed and agility was selected as criterion variable and tested by 30 meters sprint and T-test. The duration of the training prescribed in this study was six weeks that has been carried out during preparatory phase. Pretest and posttest data were measured on the handball field. The data was analyzed by applying analysis of covariance (ANCOVA). The result of the study showed that the adjusted posttest mean is significant on speed [$F$ (2, 26) = 3.592, $p < 0.05$] and agility [$F$(2, 26) = 46.88, $p < 0.05$]. Further, it is found that SAQ training significantly improved the speed and agility of handball players compared to PLYO and CON group. In SAQ training group 2.02 and 7.17 percentage of improvement were noticed on speed and agility of male handball players.
Keywords: *SAQ training, speed, power, agility, handball*.

## Introduction

Handball was introduced by Berlin Physical Education School in 1919 from then it is rapidly gaining more and more popularity and became an official Olympic Sport in 1972. These many years brought numerous modifications in rules, playing style and training format of this game. Modern handball is a fast and strenuous body contact sport, characterized by incredible athletic performances by athletes. In fact, modern handball players are able to perform many different moves, jumps, running, change of directions and technical movements in very short time and with an order determined by the tactical situation.Team handball is a complex flashing game, which requires players to have well developed aerobic and anaerobic capacities (Delamarce, *et al*., 1987). Motor ability, sprinting, jumping, flexibility and throwing velocity represent physical activities that are considered as important aspects of the game and contribute to the high performance of the team. Successful performance requires explosive power of the legs and arms, sprint velocity and kinesthetic feeling in ball control (Sibila, 1997). On the other hand, for a modern model of a handball player, the pronounced longitudinal dimensions such as stature, arm span, hand spread and length are necessary (Sibila, 1997; Srhoj, *et al*., 2002; Skoufas, *et al*., 2003). Such an anthropometric profile plays a supportive role in helping athletes perform under actual competitive conditions (Srhoj, *et al*., 2002). Longer upper extremities contribute to maximizing throwing velocity (Fleising, *et al*., 1999) and longer hand spread and length influence specific motor abilities such as dribble, passing, catching and ball throwing (Skoufas, *et al*., 2003). Concerning functional and fitness properties, high level male and female adult players develop maximal oxygen uptake between 55-60 $ml \cdot kg^{-1} \cdot min^{-1}$ and 46-55 $ml \cdot kg^{-1} \cdot min^{-1}$, 30-m sprint between 3.8-4.4 sec and 4.4-5.5 sec and standing long jump between 280-300cm and 165-230cm respectively (Kotzamanidis, *et al*., 1999; Rogulj, *et al*., 2005; Gorostiaga, *et al*., 2004). At last, the throwing velocity from a standing position for international level handball players ranges between 20-24 $m \cdot sec^{-1}$ and 16-23 $m \cdot sec^{-1}$ (Gorostiaga, *et al*., 2004, Granados, *et al*., 2007; Hoff and Almåsbakk, 1995).Research has also identified aerobic and anaerobic capacity, running speed, and agility as factors which differentiate proficiency levels in players of repeated sprint

sports such as rugby, soccer, handball and hockey. Training to develop these variables should therefore also be considered during the training year. The purpose of this study was to investigate the effect of PLYO and SAQ training for six week on speed and agility of male handball players.

**Material and Methods**

*Subjects and variables*

In this study 30 male handball players were selected randomly, from SAI SportsTriningCentere Sarurnagar, Hyderabad Andhra Pradesh. These selected subjects were assigned into 3 groups: PLYO training (n=10), SAQ training group (n=10) and control (CON) group (n=10). Speed and agility was selected as criterion variable and tested by 30 meters sprint and T-test. The selected subjects mean age: 22.18±2.32years; weight: 70.90±8.22kg; height: 176±3.07cm and BMI: 22.90±3.47kg/$m^2$. All subjects were instructed to refrain from participation in any other form of training during the testing and training period that might improve their speed and agility. All subjects were nonsmokers and none ergogenic aid or medication users known to affect speed during the study. The variables and tests selected for the study are presented in table 1.

Table 1: Variables and tests

| No | Variables | Tests/Measures |
|---|---|---|
| 1 | Speed (sec) | 30 meters |
| 2 | Agility (sec) | T – Test |

*Experimental Design*

In this study pretest – posttest randomized group design (Thomas, *et al*., 2005) was used, which consists of control group and experimental groups. PLYO and SAQ training was given to respective group for six weeks and its effects on speed and agility of handball players was studied. Equal numbers (ten) of subjects were assigned randomly to all the groups. Experimental groups were exposed to training with a set of drills selected for specific purpose.

*Protocol*

Plyometric training was performed twice a week for the period of six weeks in outdoor handball court. This training was performed under the direction of handball coach. The training program was based on recommendations of intensity and volume from Piper and Erdmann (1998), using similar drills, sets, and repetitions (see table 2). From a physiological and psychological standpoint, four to six weeks of high intensity power training is an optimal length of time for the CNS to be stressed without excessive strain or fatigue (Adams *et al*., 1992). It is the belief of some sports physiologists that neuromuscular adaptations contributing to explosive power occur early in the power cycle of the periodization phase of training (Adams *et al*., 1992). Plyometrics were only performed twice per week to allow for sufficient recovery between workouts as recommended by researchers (Adams *et al*., 1992). Training volume ranged from 90 foot contacts to 140 foot contacts per session while the intensity of the exercises increased for five weeks before tapering off during week six as recommended by Piper and Erdmann (1998) and used previously in another study (Miller *et al*., 2002). The intensity of training was tapered so that fatigue would not be a factor during post-testing. The plyometric training group trained at the same time of day, two days a week, throughout the study. During the training, all subjects were under direct supervision and were instructed on how to perform each exercise.

SAQ training was performed thrice a week for the period of six weeks in outdoor handball court. This training was performed under the direction of handball coach. SAQ training sessions lasted for one hour which includes 15 min of general warm-up and 30 to 45 min of prescribed exercise. The training commenced with one week of general physical conditioning for the SAQ training group, so that the subjects were ready physically and mentally to take on specific load administrated to them for the purpose of the study. After one week of conditioning the SAQ training was administrated, which include speed, agility, and quickness drills respectively for three days in a week i.e. (Monday, Wednesday, and Friday). The SAQ training schedule followed was different for each week (see Table 3). These SAQ training drills and specific warm-up exercises were selected from book Training for speed, agility and quickness (Brown, *et al*., 2000). Speed, agility and quickness drills cover the complete spectrum of biomotor skills, from basic and low intensity to complex and high intensity. The CON group was not allowed to take part in the specific experimental training programme expect they had daily general warming up and had their normal activities.

**Statistical Technique**:The data was analysed by applying analysis of covariance (ANCOVA). When adjusted posttest F is significant, Scheffé S post hoc test was applied to know the difference among the groups.

Table 2: Six-week program for PLYO Training Schedule

| Training Week | Training Volume (foot contacts) | Plyometric Drill | Sets × Reps | Training Intensity |
|---|---|---|---|---|
| Week 1 | 90 | Side to side ankle hops | 2×15 | Low |
| | | Standing jump and reach | 2×15 | Low |
| | | Front cone hops | 5×6 | Low |
| Week 2 | 120 | Side to side ankle hops | 2×15 | Low |
| | | Standing long jump | 5×6 | Low |
| | | Lateral jump over barrier | 2×15 | Medium |
| | | Double leg hops | 5×6 | Medium |
| Week 3 | 120 | Side to side ankle hops | 2×12 | Low |
| | | Standing long jump | 4×6 | Low |
| | | Lateral jump over barrier | 2×12 | Medium |
| | | Double leg hops | 3×8 | Medium |
| | | Lateral cone hops | 2×12 | Medium |
| Week 4 | 140 | Diagonal cone hops | 4×8 | Low |
| | | Standing long jump with lateral sprint | 4×8 | Medium |
| | | Lateral cone hops | 2×12 | Medium |
| | | Single leg bounding | 4×7 | High |
| | | Lateral jump single leg | 4×6 | High |
| Week 5 | 140 | Diagonal cone hops | 2×7 | Low |
| | | Standing long jump with lateral sprint | 4×7 | Medium |
| | | Lateral cone hops | 4×7 | Medium |
| | | Cone hops with 180 degree turn | 4×7 | Medium |
| | | Single leg bounding | 4×7 | High |
| | | Lateral jump single leg | 2×7 | High |
| Week 6 | 120 | Diagonal cone hops | 2×12 | Low |
| | | Hexagon drill | 2×12 | Low |
| | | Cone hops with change of direction sprint | 4×6 | Medium |
| | | Double leg hops | 3×8 | Medium |
| | | Lateral jump single leg | 4×6 | High |

Table 3: Six-week program for SAQ Training Schedule

| Needs | Week 1 (Drills) Volume: 1 sets/ 12 rep Work rest ratio: 1:3 | Week 2 (Drills) Volume: 2 sets/ 12 rep Work rest ratio: 1:3 | Week 3 (Drills) Volume: 3 sets/ 12 rep Work rest ratio: 1:3 |
|---|---|---|---|
| Speed | "A" March Walk | "A" Skip for Distance | "A" Skip for Height |
| | "A" Form Runs (V) | Partner-resisted starts | Bullet Belts |
| Agility | 20-Yard shuttle | Lateral 20-Yard shuttle (V) | T-Drill |
| | MB Wall Chest Passes | MB Overhead throw | MB Wall Scoop Toss |
| Quickness | Repeated Vertical jumps | Standing long jump | Triple Jump |
| Needs | Week 4(Drills) Volume: 1 sets/ 12 rep Work rest ratio: 1:3 | Week 5 (Drills) Volume: 2 sets/ 12 rep Work rest ratio: 1:4 | Week 6 (Drills) Volume: 3 sets/ 12 rep Work rest ratio: 1:4 |
| Speed, agility & quickness | Squirm | X-Pattern multi-skill | Z-Pattern cuts |
| | Hexagon drills | 5-Dots drill | 21 Drills |
| Speed & Quickness | Quick feet | Hop Scotch drill to catch a pass (v) | One leg hop to dribble and jump shot(v) |
| | Repeated vertical jumps (V) | Vertical jump to sprint | Sprint to vertical jump |
| Agility & Quickness | Tap Drills | MB One handed tap drills with partner | Mirror lateral shuffle/pass |
| | Standup from 4 points to 20-yard shuttle | Standup from sitting position to Z-pattern run | Standup from lying position to T-drill |

## Results

Table 4 clearly shows that pretest on speed and agility showed no significant difference among PLYO, SAQ and CON groups. The posttest for agility showed significant difference among the groups, however, no difference is elicited in speed. In PLYO and SAQ training group showed 1.42% and 2.02% of improvement in speed, similarly in agility 0.24% and 7.17% from pre-to-post test. The main effect adjusted posttest mean showed significant impact on speed [$F$ (2, 26) = 3.592, $p < 0.05$] and agility [$F$(2, 26) = 46.88, $p < 0.05$] indicating that there is a significant difference among the groups. The Scheffé S post hoc test was applied to know the difference among the groups.

Table 4: Analysis of covariance for two groups before and after SAQ training effect on selected biomotor ability

| Variables | Testing conditions | SOV | Sum of squares | Degrees of freedom | Mean-Square | Value (F) |
|---|---|---|---|---|---|---|
| Speed | Pre | Between | 0.001 | 2 | 0.001 | 0.991 |
| | | Within | 2.136 | 27 | 0.079 | |
| | Post | Between | 0.030 | 2 | 0.015 | 0.249 |
| | | Within | 1.646 | 27 | 0.061 | |
| | Adjusted post test | Between | 0.032 | 2 | 0.016 | 3.592* |
| | | Within | 0.115 | 26 | 0.004 | |
| Agility | Pre | Between | 0.222 | 2 | 0.111 | 1.62 |
| | | Within | 1.849 | 27 | 0.068 | |
| | Post | Between | 3.211 | 2 | 1.605 | 16.31* |
| | | Within | 2.657 | 27 | 0.098 | |
| | Adjusted post test | Between | 4.265 | 2 | 2.132 | 46.88* |
| | | Within | 1.183 | 26 | 0.045 | |

*Significant at 0.05 level of confidence

It is clear from table 5, the Scheffé S post hoc test showed significant difference between SAQ and CON group on speed and on agility difference between SAQ-PLYO and SAQ-CON group is elicited. Thus, it is concluded that six weeks of SAQ training is better to improve speed and agility of handball players.

Table 5: Scheffé S test for difference between paired means on speed

| Variable | SAQ | PLYO | CON | MD | CI |
|---|---|---|---|---|---|
| Speed | 4.827 | 4.840 | | 0.013 | 0.072 |
| | 4.827 | | 4.901 | 0.074* | 0.072 |
| | | 4.840 | 4.901 | 0.061 | 0.072 |
| Agility | 11.28 | 12.11 | | 0.83* | 0.233 |
| | 11.28 | | 12.12 | 0.84* | 0.233 |
| | | 12.11 | 12.12 | 0.01 | 0.233 |

*Significant at 0.05 level of Confidence

## Discussion

Coaches around the world require athletes who are faster, quicker and more powerful which makes difference between winners and losers. The level of competition among the collegiate level continues to increase. The coaches formulate and implement various training methods to maximize player's performance. Speed, agility, and quickness are some of the most significant, and visible, components of handball success. An improvement in the ability to react quickly, apply significant force rapidly in the appropriate direction, and to redirect that force if needed is the ultimate goal of a program to improve speed, agility, and quickness.

The SAQ training group showed improvements on speed and agility. The performance on speed and agility of SAQ training group improved by 2.02% and 7.17% respectively from pre-to-post test. This finding is in agreement with the studies of Young, McLean, and Ardagna, (1995); Delecluse, (1997); Young, James, and Montgomery, (2002); Castello and Kreis (1993). SAQ training resulted in neuromuscular adaptation, increased strength and power can result in the reduction of contact time with the surface and the production of higher forces at faster rates (Young, James, and Montgomery, 2002). Increase in power could provide a partial explanation for the observed increase in speed. Hence, it has been shown that muscular strength is related to sprinting performance (Young, McLean, and Ardagna, 1995). In general, speed performance can be optimized by effective training programmes that enhance both neural and muscular characteristics (Delecluse, 1997).

.

## Conclusion

Significant training enhancements and adaptations were experienced on speed and agility of handball players by the SAQ group in comparison with PLYO and control group. SAQ training is better to improve speed and agility of handball players. This outcome suggests that this form of training might be a beneficial inclusion in the physical conditioning programs of trained players performing invasion games. However, additional studies are required with elite populations and with different training regimes.

## References


Adams, K., O'Shea, J.P., O'Shea, K.L. and Climstein, M. (1992) The effects of six weeks of squat, plyometrics, and squat plyometric training on power production. *Journal of Applied Sports Science Research,* 6, 36-41.

Alricsson, M., K. Harms-Ringdahl, and S. Werner. (2001). Reliability of sports related functional tests with emphasis on speed and agility in young athletes. *Scandinavian Journal of Medicine and Science in Sports.* 11:229-232.

Asadi, A., and Arazi, H. (2012). Effects of high-intensity plyometric training on dynamic balance, agility, vertical jump and sprint performance in young male basketball players. *Journal of Sport and Health Research,* 4(1): 35-44.

Bal, B.S., Kaur, P.J., Singh, D. (2011). Effects of a short term plyometric training program of agility in young basketball players. *Brazilian Journal of Biomotricity*, 5(4): 271-278.

Benito-Martínez E, Lara-Sánchez AJ, Berdejo-del-Fresno D, Martínez-López EJ. (2011). Effects of combined electrostimulation and plyometric training on vertical jump and speed tests. *J. Hum. Sport Exerc*, 6(4): 603-615.

Brown, L.E., Ferrigno, V.A., and Santana, J.C. (2000). *Training for Speed, Agility and Quickness.* Human Kinetics Publications, Champaign, IL, USA.

Castello, F., and Kreis, E.J.(1993). *Sports Agility*. Nashville, TN: Taylor Sports.

Delamarce P, Gratas A, Beillot J, Dassonville J, Rochcongar P, Lessard Y. (1987). Extent of lactic anaerobic metabolism in handballers. *Int J Sports Med*, 8: 55-9.

Delecluse, C. (1997). Influence of strength training on sprint running performance: current findings and implications for training. *Sports Medicine,* 24(3): 147–156.

Ebben, W.P. (2002). Complex training: A brief review, *Journal of Sports Science and Medicine*, 1(2): 42-46.

Fleising G, Barrentine S, Zheng N, Escamilla R, Andrews J. (1999). Kinematic and kinetic comparison of baseball pitching among various level of development. *J Biomech,* 32: 1371-5.

Gorostiaga EM, Granados C, Ibáñez J, Izquierdo M. (2004). Differences in physical fitness and throwing velocity among elite and amateur male handball players. *Int J Sports Med*, 25: 1-8.

Granados C, Izquierdo M, Ibáñez J, Bonnabau H, Gorostiaga EM. (2007). Differences in physical fitness and throwing velocity among elite and amateur female handball players. *Int J Sports Med*, 28: 860-7.

Hoff J, Almåsbakk B. (1995). The effects of maximum strength training on throwing velocity and muscle strength in female team-handball players. *J Strength Cond Res*, 9(4): 255-8.

Kotzamanidis C, Chatzokotoulas K, Giannakos A. (1999). Optimisation of the training plan of the handball game. *Handball EHF Periodical*, 2: 49-55.

Lehnert, M., Lamrova, I., and Elfmark, M. (2009). Changes in speed and strength in female volleyball players during and after a plyometric training program. *Acta Univ. Palacki. Olomuc, Gymn*, 39(1): 59-66.

Lim, J.H., Wee, E.H., Chan, K.Q., & Ler, H.Y. (2012). Effect of plyometric training on the agility of students enrolled in required college badminton programme. *International Journal of Applied Sports Sciences,* 24(1): 18-24.

Miller, M.G., Berry, D.C., Bullard, S. and Gilders, R. (2002) Comparisons of land-based and aquaticbased plyometric programs during an 8-week training period. *Journal of Sports Rehabilitation,* 11, 269-283.

Miller, M.G.; Herniman, J.J.; Ricard, M.D.; Cheatham, C.C. & Michael, T.J. (2006). The effects of a six-week plyometric training programme on agility. *Journal of Sports Science and Medicine*, (5): 459-465.

Piper, T.J. and Erdmann, L.D. (1998) A 4 step plyometric program. *Strength and Conditioning,* 20(6), 72-73.

Rimmer, E. & Sleivert, G. (2000). Effects of a plyometrics intervention programme on sprint performance. *Journal of strength and conditioning research,* 14(3): 295–301.

Robinson, B.M. and Owens, B. (2004) Five-week program to increase agility, speed, and power in the preparation phase of a yearly training plan. *Strength and Conditioning,* 26(5), 30-35.

Rogulj N, Srhoj V, Nazor M, Srhoj L, Čavala M. (2005). Some anthropologic characteristics of elite female handball players at different playing positions. *Coll Antropol,* 29(2): 705-9.

Shallaby, H.K. (2010). The Effect of Plyometric Exercises Use on the Physical and Skillful Performance of Basketball Players. *World Journal of Sport Sciences,* 3 (4): 316-324.

Sibila M. (1997). Initial and further selection of children gifted for handball on the basis of some chosen morphological and motor parameters. *Handball EHF Periodical,* 1: 7-17.

Skoufas D, Kotzamanidis C, Hatzikotoylas K, Bebetsos G, Patikas D. (2003). The relationship between the anthropometric variables and throwing performance in handball. *J Hum Mov Sci,* 45: 469- 84.

Srhoj V, Marinović M, Rogulj N. (2002). Position specific morphological characteristics of top-level male handball players. *Coll Antropol,* 1: 219-27.

Thomas Jerry R., Nelson Jack K., and Silverman Stephen J. (2005). *Research Methods in Physical Activity*. USA.

Young W. B., James R., Montgomery I. (2002). Is muscle power related to running speed with changes of direction? *The Journal of Sports Medicine and Physical Fitness,* 42(3): 282-8.

Young, W.B., McDowell, M.H. and Scarlett, B.J. (2001) Specificity of spring and agility training methods. *Journal of Strength and Conditioning Research,* 15, 315-319.

Young, W.B., McLean, B. and Ardagna, J. (1995). Relationship between strength qualities and sprinting performance. *Journal of Sports Medicine and Physical Fitness,* 35, 13–19.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp31-33**
**Journal Impact factor 0.5190**

# Attitude Towards Sports Of Rural Living Peoples – A Survey

**Dr. S. CHIDAMBARA RAJA**
**Associate Professor, Dept of Physical Edn. and Sports Sciences, Annamalai University.**

## ABSTRACT
The purpose of the study was to find out the attitude towards sports of rural living people. To achieve this purpose, 200 male and 200 female subjects were randomly selected as subjects from four villages in Chidambaram Taluk, Tamilnadu, so that a standard programme for rural participation in sports can be planned in future. The instrument used for this research project were interviewed schedules and questionnaires which were prepared carefully to obtain the responses from the subjects selected from the different parts of Chidambaram Taluk, Tamilnadu. The questionnaire was prepared taking into consideration the multifarious aspect of the study. The questionnaire contained 26 questions. The following procedures were adopted for the questionnaire development:1. pre-pilot study phase, 2. Pooling of statement, 3. Selection of statements, 4. Pilot study phase(Jury opinion), 5. Rewriting and 6. Finalization phase. The reliability was established using test and re-test method. The reliability of the whole test for all the statement is found by using the Spearman-Brown Prophecy formula. Seven hundred questionnaire forms were given to different parts of rural areas around Chidambaram Taluk and requested their wholehearted cooperation for the same. The selected subjects were tested on selected criterion variables and One Way Analysis of Variance (One way ANOVA) was used to find out the significant differences if any, among the male and female peoples for each variable separately. The result of the study was shown that there was no significant difference occurred between the rural living male and female on sports attitude.

## INTRODUCTION
"Our effort is to see that sports becomes a means for shaping the character of our youth. Through sports they must learn to excel as individuals. They must also learn to play together as a team. We must see that sports are for Sport's sake and not for winning or losing. Our endeavor should be to build healthy bodies through sports and make ourselves fitness-conscious."
Prime Minister Rajiv Gandhi,Children's Day, 14 November 1985.
A sport consists of a physical activity or skill carried out with a recreational purpose: for competition, for self-enjoyment, to attain excellence, for the development of a skill, or some combination of these. During the era of the Rig - Veda, Ramayana and Mahabharata, men of a certain stature were expected to be well - versed in chariot - racing, archery, military stratagems, swimming, wrestling and hunting. Excavations at Harappa and Mohenjodaro confirm that during the Indus valley civilization (2500 - 1550 B.C) the weapons involved in war and hunting exercises included the bow and arrow, the dagger, the axe and the mace.
India has a tradition of sports and physical fitness. In recognition of the importance of sports, a separate department was set up in 1982, prior to the commencement of the 9th Asian Games. Subsequently, the first ever National Sports Policy was announced in 1984. The Ministry of Human Resource Development was set up in 1985, with the objective of integrating efforts for development of human potential in the areas of Education, Women & Child Development, Arts and culture, Youth Affairs & Sports through its constituent departments.
The Sports Authority of India (SAI) was established in 1984 as a registered society in pursuance of a Government of India resolution. Its main objectives include the effective and optimum utilisation of various sports facilities and all matters pertaining to sports promotion and sports management.

Sports and Education are an integral part of the learning process. Therefore, it becomes necessary to include them in the evaluation of individual performance. To have a result oriented co-ordination; the school improvement programme will be enforced by taking up action in the following areas: -

• Introduction of sports and games in the daily school timetable as a compulsory activity in both Government & Public Schools/ Colleges/ Universities.
• Providing services of Coaches for training.
• Providing all basic infrastructures for sports and games including equipment and other materials needed.
• Encouraging evening sports activities for students & teachers.
• Creation of Sports environment in every educational institute.
• The department shall endeavour to include sports as a subject from the middle level school.
• Encouraging the rural youth in sports participation.
• Raising the teams by various Boards/ Corporations and NGOs.

Although the Central and the State Governments have implemented several schemes to provide rural sports infrastructure, their reach and range has been limited owing to the constraint of resources for such a vast country. Another major constraint is the gross inadequacy of trained sportspersons who can coach the local villagers to take to sports and games in any meaningful manner.

The scheme of Rural Sports Programme was launched in 1970-71 and is being operated by SAI. The scheme lays emphasis on arranging tournaments in rural areas and at the block, district, state and national levels. The countrywide programme of Rural Sports tournament has been launched by the Central Government since 1970-71 with the twin object of involving a major segment of our youth in rural areas into the main stream of country's sports activities and also to spot and nurture sports talent.

Under the scheme, nodal Voluntary Sports Clubs/Sports Centres, on recommendation of the State Govts, are given one time grant upto Rs. 30,000/ for purchase of consumable and non consumable sports equipment. In case of tribal blocks, assistance upto Rs.45,000/ is given. This is followed by a grant of Rs. 5,000/ per annum for subsequent two years.

**Statement of the Problem**

The purpose of this study was to find the attitude towards the sports of rural living male and female.

**Materials and Methods**

To achieve this purpose, 200 male and 200 female subjects were randomly selected as subjects from four villages in Chidambaram Taluk, so that a standard programme for rural participation in sports can be planned in future. The instrument used for this research project were interviewed schedules and questionnaires which were prepared carefully to obtain the responses from the subjects selected from the different parts of Chidambaram Taluk. The questionnaire was prepared taking into consideration the multifarious aspect of the study. The questionnaire contained 26 questions. The following procedures were adopted for the questioner development:1. pre-pilot study phase, 2. Pooling of statement, 3. Selection of statements, 4. Pilot study phase (Jury opinion), 5. Rewriting and 6. Finalization phase. The reliability was established using test and re-test method. The reliability of the whole test for all the statement is found by using the Spearman-Brown Prophecy formula. Seven hundred questionnaire forms were given to different parts of rural areas around Chidambaram taluk and requested their wholehearted cooperation for the same. The selected subjects were tested on selected criterion variables and One Way Analysis of Variance (One way ANOVA) was used to find out the significant differences if any, among the male and female peoples for each variable separately.

**Analysis of the Data**

The data collected from the male and female of the rural areas of Chidambaram Taluk towards sports attitude were analysed and presented in Table - I.

Table - I
ANALYSIS OF VARIANCE ON SPORTS ATTITUDE
OF RURAL LIVING MALE AND FEMALE

| | Male | Female | SOV | Sum of Square | df | Mean Square | 'F' Ratio |
|---|---|---|---|---|---|---|---|
| Mean | 132.92 | 131.96 | **B:** | 12.01 | 1 | 12.01 | 0.008 |
| S.D | 39.54 | 39.70 | **W:** | 78492.81 | 50 | 1569.86 | |

(The required table value for significant at 0.05 level of confidence with df 1 and 398 is 3.86).

## Results

Table - I showed that the pre-test and post-test mean and standard deviation values of male and females on sports attitude were 132.92 ± 39.54 and 131.96 ± 39.70 respectively. The obtained 'F' ratio value of 0.008 was lesser than the required table value 3.86 for significant at .05 level of confidence with df 1 and 398. The results of study showed that there was no significant difference that exists between male and female of attitude towards sports in rural areas. It may be concluded from the results of the study that there was no significant difference exists between males and female of rural areas on sports attitudes. But the male rural people having a slight advantage of sports attitude towards than the female people.

## Conclusions

Based on the results of the findings of the study it was concluded that there was no significant difference occur between the rural living male and female on sports attitude.

## References:


www.tn.gov.in Policy Note 2005 - 06, Youth Welfare and Sports Development Department, Tamil Nadu India.html

P.S. Shankar, ***IBH New medical oxford***, (New Delhi: IBH publishing Co-Pvt Ltd., 2000), 487.

John W. Best and James V. Kahn, ***Research in Education***, (New Delhi: Prentice-Hall of India Pvt. Ltd., 1986), p. 118

Carter V. Good and Godagles E. Seates, ***Method of Research***, (New York: Application Century Craft Inc, 1954), p.569.

AAHPER, ***Research Method Applied To Physical Education***, (Washington, 1949), pp.253 - 540

P.M. Joseph, ***Organisation of Physical Education***, (Kandivali Old student's Association, T.I.P.E., 1956), p.57.

J.P. Thomas, ***Organisation of Physical Education***, (Madras: Gnanodays Press. 1967) p.65.

Sujan Sing, ***Organisation and Administration of Physical Education***, (Jodhpur: Jain Brothers, 1963), p.18.

Harry A. Scott and Richard B. West Kaemper, ***Form Programme to Facilities in Physical Education***, (New York: Harper and Brothers Publishers, 1963) p.26.

Jesse Ferting Williams, Clifford Lee Brownwell and Elman Louis Vernier, ***The Administration of Health Education and Physical Education***, (Philadelphia: W.B. Saunders Company, 1958), p.277.

Torsten Husen and T. Neville P:ostle Waite, ***The International Encyclopedia of Education***, (New York: Pergamon Press 1989), p.188.

Henry E. Ganett, ***Statistics in Psychology and Education***, (Bombay: Vakils Feffer and Simons Private Ltd., 1969 ) , p.355.

J.C. Nunnally, ***Psychometrics***, (New York: McGraw Hill Book Company, 1978), p.92.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp34-35**
**Journal Impact factor 0.5190**

# Survey of Methods of Teaching Physical Education in High Schools of Tumkur district.

*** Dr. K.G. Eshwer Naik**
**Physical Education Director**
**Government first Grade College**
**Bagepalli, Karnataka**

**** Sri. Srinivas**
**Asst.professor**
**K.S.W.U. Bijapur**

**A b s t r a c t**
For the overall development of a child, along with academics, which develop his mind, a child should participate in physical activities such as sports and exercises as well. Although, researches in the field have shown that physical education should be made mandatory in schools as it develops positivity, improves the attitude and fitness of the students, yet, due to various constraints, many schools are not really able to implement this. Lack of funds, increased emphasis on academics to up the scores in order to avail government funding; there are various reasons behind this policy of the schools for not making physical education compulsory.The aim of this study is to examine the methods of teaching followed while teaching Physical Education in High Schools of Tumkur district. The sample comprised of 125 teachers teaching Physical Education and 146 students. A Questionnaire was prepared by investigator to collect the data from the teachers . The survey shows many teachers follow Command Method while teaching Physical Education in High Schools of Tumkur district.

**Introduction**

Physical education is an integral part of the total education of every child in kindergarten through high school. Quality physical education programs are needed to increase the physical competence, health-related fitness, self-responsibility and enjoyment of physical activity for all students so that they can be physically active for a lifetime. Physical education programs can only provide these benefits if they are well-planned and well-implemented. Here's what quality physical education programs can do for students. According to the National Association for Sport and Physical Education**. Improved physical fitness**. Improves children's muscular strength, flexibility, muscular endurance, body composition and cardiovascular endurance.

**Skill development**: Develops motor skills, which allow for safe, successful and satisfying participation in physical activities.

**Regular, healthful physical activity**:Provides a wide-range of developmentally appropriate activities for all children.

**Self-discipline**:Facilitates development of student responsibility for health and fitness.

**Strengthened peer relationships**: Physical education can be a major force in helping a child socialize with others successfully and provides opportunities to learn positive people skills. Especially during late childhood and adolescence, being able to participate in dances, games and sports is an important part of peer culture.

**Improved self-confidence and self-esteem**:Physical education instills a stronger sense of self-worth in children based on their mastery of skills and concepts in physical activity. They can become more confident, assertive, independent and self-controlled.

**Experience setting goals:**Gives children the opportunity to set and strive for personal, achievable goals.The aim of this study is to examine the methods of teaching followed while teaching Physical Education in High Schools of Tumkur district. The sample comprised of 125 teachers teaching Physical Education and 146 students. A Questionnaire was prepared by investigator to collect the data from the teachers The survey shows many teachers follow Command Method while teaching Physical Education in High Schools of Tumkur district.

**Objectives of the Study**

1) To find out the Opinion of the Teachers towards teaching of Physical Education in High Schools of Tumkur district.

2) To find out the Opinion of the students towards learning of Physical Education in High Schools of Tumkur district.

3) To find out the Methods of Teaching followed in teaching of Physical Education in High Schools of Tumkur district.

**Tools Used for the Study;**

A Questionnaire was constructed by the investigator to collect the information regarding the opinion of teachers and students towards teaching and learning of Physical Education in High Schools of Tumkur district. Information was collected regarding Methods of Teaching of Physical Education in High Schools of Tumkur district.

Sample for the Study;

The Sample for the study consisted of 125 teachers teaching of Physical Education in High Schools of Tumkur district.146 students studying in various High Schools of Tumkur district were randomly selected by the investigator.

Statistical Treatment and Analysis of Data

The Opinion scores of teachers and students were arranged into frequency distribution and their Means and Standard Deviation were worked out and is given in Table-1

| Groups | N | M | SD |
|---|---|---|---|
| TEACHERS | 125 | 76.92 | 10.37 |
| STUDENTS | 146 | 79.12 | 13.28 |

91.2% OF teachers and 91.1% students have favorable Opinion towards teaching and learning of Physical Education in High Schools of Tumkur district.

These findings satisfy the first two objectives of the study

Data Regarding Methods of Teaching ;

The Data was arranged in tabulation form given in Table -2

Information was collected regarding Methods of Teaching of Physical Education in High Schools of Tumkur district.These collected is in the form of Qualitative nature.

| No OF TEACHERS | Method of Teaching |
|---|---|
| 102 | Command Method |
| 29 | Imitation Method |
| 15 | Explanation Method |

The data given in Table -2 clearly shows that 102 teachers of total sample follow the Command Method, where as 29 teachers of total sample follow Imitation Method and 15 teachers follow Explanation Method while teaching of Physical Education in High Schools of Tumkur district

**Suggestion of the Study;**

For TeachersTeachers should attend various Refresher Courses, Seminars and Workshops to update the recent trends in Pedagogy of Physical Education.Teachers should facilitate the teaching of Physical Education instead of lecturing the content.

For Students: Students should learn the practical aspect of and Physical Education enjoy in their life.Students should upgrade their knowledge regarding Physical Education to lead a successful life in the society.

**Conclusion:**Physical education which is commonly a part of the curriculum at school level includes training in the development and care of the human body and maintaining physical fitness. Physical education is also about sharpening overall cognitive abilities and motor skills via athletics, exercise and various other physical activities like martial arts and dance.

For molding better citizens teachers have to play a pivotal role, teachers shape the future of tomorrow in the classroom today .The only way to make the teaching and learning of Physical Education effective is to shift the focus from theory centric approach to practical centric approach of Pedagogy. Thus Teachers have to change their Pedagogy according to the needs of the 21$^{st}$ century learners.

**References**

High-quality health and physical education programs help students succeed in life By Charlotte Kelso

***The Importance of Physical Education*** *by* ***Elena*** on October 20, 2011

http://www.health.state.mn.us/divs/hpcd/chp/cdrr/physicalactivity/docspdfs/fa

http://www.pearljournal.org/importance-of-physical-education-in-schools.html

Taras, H. (2005). Physical activity and student performance at school. Journal of School Health, 75, 214-218.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp36-40**
**Journal Impact factor 0.5190**

# Analysis Of Current Status Of Computer Literacy And Its Application Used By Physical Education Teachers In Education Department, Karaikal District, Puducherry State

**Dr. R. SAVARIRAJAN**
**Director of Physical Education**
**Arignar Anna Government Arts & Science College,**
**Karaikal – 609 602**
**Puducherry State**

**ABSTRACT :**

The application of computers used in sports and physical education field and of current official work and research activities in this field. Although the computer has potential in the physical education curricular, current use is minimal when it is compared to the other disciplines. Maximum computer applications can help for enhancement of physical education. Physical education teachers has so much official work, formation of various games and sports team with other official work i.e. to attend various tournaments as team manager, coach, umpire and referee or in-charge of coaching camp of games and sports at school level. There is only one post of physical education teacher in many higher secondary and high schools. So the physical education teacher is busy in his routine work. As per Govt. rules, every teaching staff of higher secondary and high school must involve in research activities, social work and extension work or community development work. Computer is the best friend of physical education teacher when he used maximum applications in his daily routine official work, research and teaching or coaching. Today the world has become so compact and fast due to communication by using computer and mobile facilities.

The aim of this research paper is to search current status of how many physical education teachers in higher secondary and high schools in Education Department, Karaikal, Puducherry State used maximum applications of computer in their daily routine official work. We have prepared a questionnaire which contains 10 questions for survey method. The mode of answer is yes / no. Span of time is very less therefore telephonic survey method is used for data collection. We have selected 50 physical education teachers from different schools for sample study particularly telephonic survey based questionnaire. These fifty physical education teachers are selected from urban and rural area among schools of karaikal district.

After the data collection by telephonic survey about knowledge and used of computer we have prepared graphical analysis. As per current research shown that there is much less use of computer applications in daily routine work and latest information about each ones up-gradation of subject by physical education teacher. So many physical education teachers are agreed about the importance of computer application in physical education field is must for enhancement.

Keyword: Computer – Physical Education Teacher – Education Department – Karaikal – Puducherry State

## Introduction :

In the modern digital era of Information technology, emergence of computer, access to electronic media, advanced telecommunication systems, audio visual technology, multimedia have created new possibilities to deal with collection, organization and dissemination of vast amount of digital information. Major role of computer applications is used in official work, E-resources in research and up-gradation of knowledge in any disciplines. Technology impacts health, physical education, recreation and official work, educators in the areas of research, coaching skills, classroom teaching and distance education. While the overall effect is not fully assessable, the use of technology in so many different aspects of the profession makes it

important to more clearly recognize and appreciate its current and potential role. Computer and Internet connections are becoming widely available in schools, colleges and universities.

Karaikal is a small coastal enclave of territory which was formerly part of French India. Together with the other former French enclaves of Pondicherry, Yanam, and Mahé, Karaikal forms the Union Territory of Pondicherry. Karaikal is bounded on the North and South by Nagapattinam district of Tamil Nadu state, on the west by Tiruvarur district (also belonging to Tamil Nadu), and on the East by the Bay of Bengal. The enclave is located 132 km south of the city of Pondicherry, 158 km east of Trichy and is known for its rich cultural heritage. Karaikal town about 20 km. north of Nagappattinam and 12 km.south of Tarangambadi is the regional headquarters. Karaikal region is made up of Karaikal municipality and the Communes of Nedungadu, ,Kottucherry, ,Neravy, ,Thirunallar, ,Tirumalairayanpattinam (known as T.R Pattinam). There is only one post of physical education teacher in many schools. So the physical education teacher is busy in his routine work. As per Govt. rules, every teaching staff of higher secondary and high school must involve in research activities, social work and extension work or community development work. Computer is the best friend of physical education teacher when he used maximum applications in his daily routine official work, research and teaching or coaching. Today, the world is so compact and fast due to communication by using computer and mobile facilities. Current research shown that now in modern era, there is a wide scope for physical education. Every physical education teacher in higher secondary and high schools must be aware about the computer applications.

Physical educationists have to develop their knowledge and skills in order to use computers as teaching tool, support and guide students to use these technologies for learning, coaching and research. The aim of this study is to find out how often physical education teachers use computer and related software for educational purposes and how computer applications help them to solve their problems.

**Purpose of the Study :**

Aim of this research paper os to search current status of how many physical education teachers in Education Department, Karaikal, Puducherry State used maximum applications of computer in their daily routine official work and their opinion about computer applications used for the enhancement of physical education.

**Methodology :**

Among 60 schools in Education Department, Karaikal we have selected 50 physical education teachers for sample study by telephonic survey based on questionnaire. These 50 physical education teachers are selected from urban and rural area schools. We have prepared a questionnaire of 10 questions for telephonic survey method. The mode of answer is yes / no. Span of time is very less therefore telephonic survey method is used for data collection.
The questionnaire is as follows.

**Questionnaire**

State whether you are Computer Literate?
Have you completed any computer course?
Are you using computer for official work?
Are you surfing Internet?
According to you can computer help physical education for enhancement?
Do you know about sports engineering?
Do you own a laptop?
Are you satisfied with research review & study material of physical education on Internet?
Is sports skill coaching by computer beneficial for players?
Are you member of any authorized online journal for access?

**Result :**

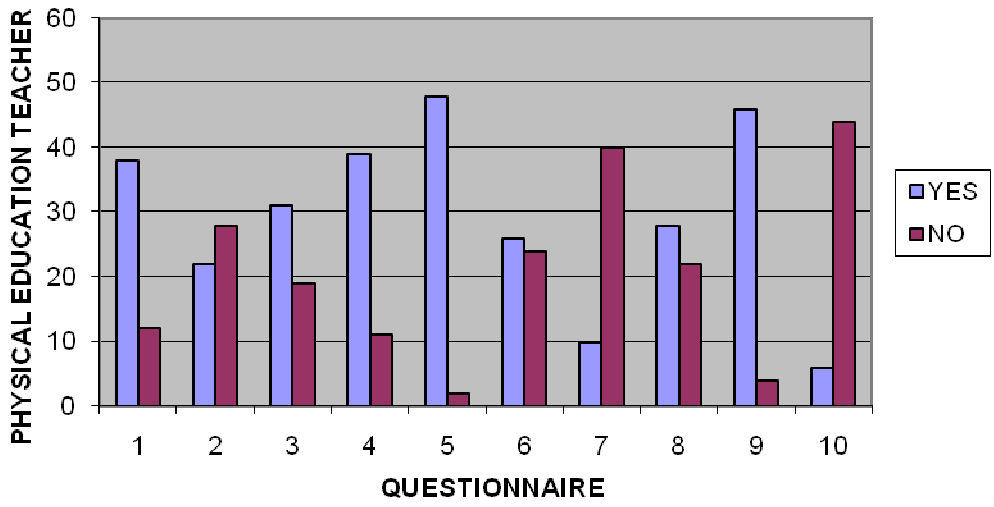
We have used data collection sheet to notify the answer received by telephonic talk. On this basis we have prepared data collection sheet as follows.

**Data Collection Sheet**

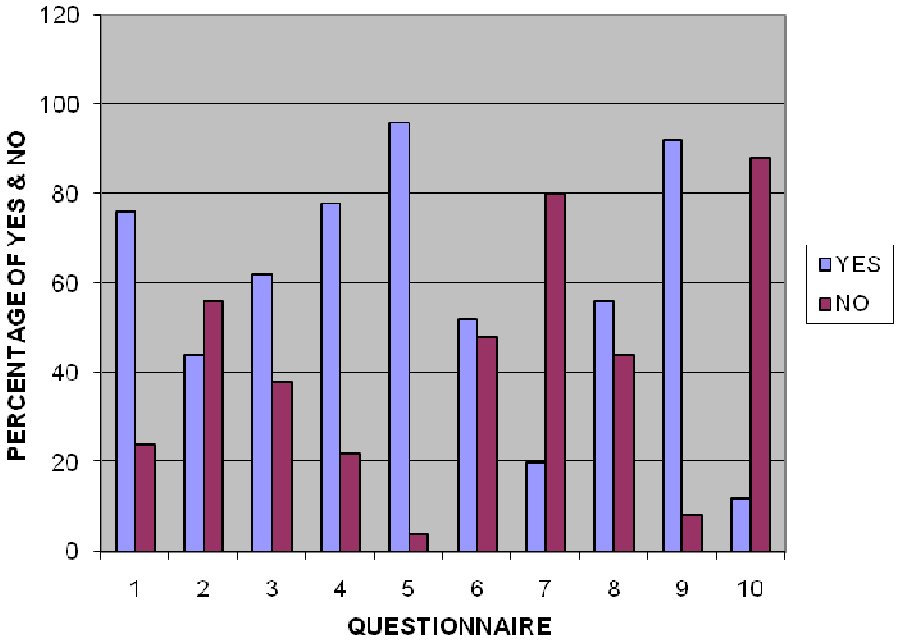
| Que | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PET | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 4 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 5 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 6 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 7 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| 8 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 9 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 10 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 11 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 12 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |
| 13 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 14 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 15 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 16 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 17 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 18 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 19 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 20 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 21 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 22 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 23 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 24 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| Que | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | |
| PET | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| 25 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 26 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 27 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 28 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 29 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 30 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 31 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| 32 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 33 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 34 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 35 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 36 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 37 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 38 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 39 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| 40 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 41 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 42 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 43 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 44 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 45 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 46 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 47 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 48 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 49 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 50 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| Total | 38 | 12 | 22 | 28 | 31 | 19 | 39 | 11 | 48 | 2 | 26 | 24 | 10 | 40 | 28 | 22 | 46 | 4 | 6 | 44 |

We have used code words 1 for “Yes” and 0 for “No”

Graphical representation is shown as below.
Bar Chart of Answers




Percentage of Physical Education Teachers those who have given answers “Yes” and “No” in favour of Computer Applications



**Conclusion :**

Based on the data collection

76% Physical Education Teachers are literate in computer out of them 56% have not completed any computer course.

62% Physical Education Teachers are using computer for their official work.

78% Physical Education Teachers are surfing Internet.

Maximum means 96% Physical Education Teachers are agreed that computer helps in physical education for enhancement.

Average Physical Education Teachers are aware about sports engineering.

Only 20% Physical Education Teachers are having their own laptop.

56% Physical Education Teachers are satisfied with research review & study material of physical education in Internet.

Maximum means 92% Physical Education Teachers are agreed that in sports skill coaching by computer is beneficial for players.

Only 12% Physical Education Teachers are the members of online journals for access.

At the time of research we have communicated the importance of computer applications among the physical education teachers and we have found that maximum of them are agreed with us and remaining wants to learn computer and its applications in their routine work or research work. They all agreed for the maximum use of computer applications for enhancement of physical education.

**Reference :**

Jinhai Sun, The Establishment of Sports Systems Engineering (SSE) as a Discipline 1, ISSN 1750-9823 (print) International Journal of Sports Science and Engineering Vol. 1 (2007) No.1, pp.67-72.

McLean, Daniel D., Use of Computer-based Technology in Health, Physical Education, Recreation, and Dance, ERIC Digest, Washington DC, 1996.

Patel Bharat Z., Impact of information and communication technology on physical education and sport, India Federation Computer Science in Sports, Volume 3, No.1 Half Yearly July 2010 to December 2010.

WWW.sgbau.ac.in

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp41-44**
**Journal Impact factor 0.5190**

# How Physical Activity Promotes Academic Achievement and a Healthy Lifestyle at Early Childhood Education and Adverse Chemical factors

**Sree Kalicharan M.A(Economics)Osmania University,Hyderabad-500007**
**G.Srinu(Ph.D) Research scholar,Department of Public Administration,Osmania University,Hyderabad.**
**B.Raviverma M.Sc. (Chemistry)Suryapet, Nalgonda District, Andhra Pradesh**.

## Introduction

Children must develop basic academic skills to have success in a modern world where technological advances progress at exponential rates. Once students have a solid foundation in reading, writing and mathematics they can use these skills to acquire advanced knowledge in these and any other academic pursuit. Technology has brought the modern world many advantages, but also many challenges. Where it has allowed a greater degree of independence, it has also resulted, somewhat paradoxically, in producing almost as much dependence. For example, the growth in economic output world-wide is the result in mechanization, but the progress that has increased nearly everyone's standard of living has also resulted in an epidemic of sedentariness.

A recent study indicated that taking time away from traditional educational pursuits during the school day to spend an hour devoted to physical activity will not adversely influence performance of traditional educational skills (Carlson et al., 2008). Other studies showed that the incorporation of physical activity classes actually enhanced academic performance in traditional academic programs (Chomitz, et al., 2009, Tomporowski, Davis, Miller & Naglieri, 2008). Students who participate in physical activity programs in school are less likely to experience the adverse health complications resulting from degenerative diseases (Rennie, Johnson & Jebb, 2005). It is interesting, therefore, that the health of the body and the training of the mind should be linked to lifestyles measures such as regular physical activity. The purpose of this paper is to show just that.

## Prevalence of Obesity in Children and deficiency of malnutrition

Throughout most of the developed and developing world, obesity in children has been increasing rapidly (Lobstein , Baur & Uauy, 2004). This trend can be observed in Europe (Jackson-Leach, & Lobstein, 2006) and in the United States (CDC, 2002). Within the United States, the percentage of children who are overweight has doubled in the 6–11 year old age group and almost tripled in the 12–19 year old age group (CDC, 2002). In England the prevalence of was 14% in 2–10 year olds and 25% in 11 to 15 year olds (Reilly, 2006). Obesity, defined as a body mass index greater than 30, results from more calories consumed than expended. To develop obesity this imbalance has to last for months, or more likely years (Reilly, 2007).

Obesity in children is a simple process that results from excess food intake in relation to caloric expenditure. However, the reasons why children do not burn a sufficient number of calories, and the reasons for children consuming excess calories is complex. Similar to the adult population, children's physical activity levels are reduced as modern technology replaces the traditional forms of entertainment which in previous generations tended to fall more towards the physical end of the spectrum, especially for the lower socioeconomic classes. The end result is a sedentary lifestyle and a pattern of creeping weight gain that escalates towards obesity.

Children are also bombarded with paper advertisements and television commercials that promote the consumption of high fat foods with limited nutritional value. The solution to this problem is a reduction of high caloric foods such as foods containing a high concentration of fat and simple sugar and the reduction of sweetened drinks including fruit juices sweetened with sugar (Rielly,

2007). Children should also be encouraged to increase their physical activity (Rennie, Johnson& Jebb, 2005).

**Consequences of Childhood Obesity through Adverse Chemical factors**

Obesity in childhood creates both short-term complications (conditions that develop in childhood) and long-term complications (conditions that develop in adulthood). Short-term complications arising from obesity include: orthopedic problems particularly in the foot and hip joint, asthma, psychosocial alienation, abnormal blood lipid profile, hypertension, type 2 diabetes (once thought to only afflict the adult population), liver disease, and cancer (Rielly, 2007). The long-term consequences of childhood obesity are an increased risk of premature death resulting from numerous diseases (CDC, 2002).

**Influence of Physical Inactivity on Academic Performance**

In addition to the adverse physiological effects of obesity which is partly attributed to physical inactivity, research studies have also demonstrated that physical inactivity adversely influences academic performance (Chomitz, et al., 2009, Tomporowski, Davis, Miller & Naglieri, 2008). Students who are physically active perform better academically than inactive students. The relationship between physical activity and academic performance may be explained by both physiological and psychological mechanisms. Animal studies have demonstrated that physical activity stimulates neural development (Studenski, et al., 2006) and higher capillary volume (Kramer et al., 2002). Hillman, Castelli and Buck (2007) investigated the relationship between physical activity and cognitive function by comparing high- and low-fit preadolescent children (mean age = 9.6 yr). Their findings suggest that physical fitness was positively associated with neuroelectric indices of attention and working memory. Taras (2005) also demonstrated that students who are physically active demonstrate greater attention during class than sedentary students. From a psychological perspective, physically active individuals report higher levels of self-esteem and lower levels of anxiety, which have both been associated with improved academic achievement (Flook, Repetti, & Ullman, 2005).

Cross-sectional studies have demonstrated a positive relationship between physical activity and academic performance. One study demonstrated that students who passed all components of the *Fitnessgram* had higher academic performance measured by the standardized Illinois State Achievement Test. This relationship was demonstrated in third- and fifth- grade students (Castelli, Hillman, Buck & Erwin, 2007). A study conducted by the California Department of Education (2005) evaluated the performance of over one million children on standardized tests of physical fitness, including variables such as aerobic fitness, body composition, muscular strength and muscular flexibility to the California Standards Test, which includes indices of language arts and mathematics proficiency. KPhysical fitness scores of children in fifth-, seventh-, and ninthgrade were positively correlated with measures of academic achievement. This correlation was stronger in girls and students with higher socio-economic status. However, a significant positive relationship was also demonstrated between physical fitness and academic performance in male students and in students with lower socio-economic status.

A meta-analysis conducted on 16 experimental designs reported a positive relationship between physical activity and cognitive function in school-aged children (Sibley & Etnier, 2003). This study demonstrated that physical activity was positively related to various components of cognitive function such as: perceptual skills, academic achievement, verbal skills, mathematic skills, memory, and academic readiness. This study demonstrates that physical activity improves general cognitive function which has greater universal application than improvement in one specific skill such as mathematic performance. This study implies that physical activity improves the decision making process which that may lead to an improved overall quality of life.

There is limited causational research between the role physical activity plays in increasing academic performance in early childhood education settings. Davis et al. (2007) investigated the influence of physical activity in the form of moderate aerobic exercise on cognitive function. Examples of physical activities performed during physical activity sessions included activities such running games, tag games, jump rope and modified basketball and soccer. The emphasis was on exercise intensity (the goal was to perform activities that produced heart rates 150 bpm), enjoyment and safety, not competition nor the enhancement of skills. Heart rates were monitored

during activity with a Polar pulse monitor. Nearly every child achieved this goal nearly every day. Ninety-four sedentary, overweight, but otherwise healthy children (mean age 9.6 years) were randomized to a 20 minute/day treatment, a 40 minute/day treatment, or control condition. Exercise sessions were 5 days per week for 15 weeks. The exercise sessions were conducted after school during a school semester at a location off campus. The
Cognitive Assessment System, a standardized test of cognitive processes was administered individually before and following intervention. Analysis of covariance was used to examine differences in posttest scores of various cognitive scales among groups (20 min, 40 min, control) controlling for cohort and pretest scores. Group comparisons demonstrated that the control group had lower posttest cognitive scores than the 40 min/day treatment. There was no difference in posttest cognitive scores between the control group and the 20 minute/day treatment. The results of this study indicate that physical activity in the form of moderate intensity aerobics, performed for 40minutes per day may be a simple method of enhancing children's mental functioning central to cognitive development.

One criticism of the study conducted by Davis et al. (2007) was that since the physical activity program was conducted after school, the physical activity program did not reduce the academic education programs devoted to traditional academic disciplines (i.e., history, mathematics, English, and science). A study by Carlson et al. (2008) demonstrated that when a physical education class was incorporated into the academic curriculum there was not a reduction in academic performance in traditional academic programs even though class time devoted to these areas was taken away because of the introduction of the physical education class.

**Prevalence of Physical Activity (Physical Education) in Elementary Education Programs**
Healthy People 2010 goals advocate requiring schools to mandate daily physical education. However, legislative programs such as "No Child Left Behind Act of 2001" have placed pressure on school systems to increase academic performance. The majority of school systems have responded to these apparently conflicting pressures by reducing school time devoted to physical education. Currently only about 3.8% of schools require daily physical education classes in early childhood education programs (Lee, Burgeson, Fulton & Spain, 2007).

**Strategies for Increasing Physical Activity in Early Childhood Educational Programs**
Research has found that children are not meeting daily physical activity recommendations (Dowda et al., 2004). Research has further demonstrated that children are becoming sedentary during a significant portion of the time they spend in childcare settings (Finn & Specker, 2000). Inactivity during preschool may place children at an increased risk for being overweight which could lead to obesity and place children at risk for developing all of the chronic diseases associated with this condition (Trost et al., 2003). Research has shown that physical activity behavioral patterns are established early in life (Jago et al., 2005). The time to proactively influence an active lifestyle in children is during early education. If children start life with sedentary behaviors, they are likely to continue this pattern and to experience many adverse health consequences referenced in this paper. In addition to the physiological effects of inactivity, studies have demonstrated that physical activity plays an important role in the cognitive development of children.
Therefore it is essential that physical activity becomes an essential part of a child's life early in age (Moore et al., 2003). When students are at the age of early childhood education, children are not interested in competition or learning specific skills to improve performance. Therefore, the goal of physical activity programs should focus on caloric expenditure through games that require activity such as running and jumping. Simple games with limited rules require no specific skills. Examples include tag and modified sports such as Frisbee football and soccer are recommended (Davis et al., 2007). Physical activity classes
should be offered daily, and the aerobic exercise should last 40 minutes (Davis et al., 2007).

## Conclusions

Based on the articles reviewed in this paper, the incorporation of physical activity into an early childhood education program would have many beneficial effects. A physical activity program would help with the growing problem of childhood obesity and all the diseases associated with this condition. When a physical education class is incorporated into the academic curriculum there is not a reduction in academic performance in traditional academic programs though class time devoted to traditional academics is reduced because of the introduction of the physical education class. The research studies reviewed in this paper indicate that when physical activity is incorporated into an early education program, physical activity can reduce the growing incidence of childhood obesity and all the diseases associated with this condition. Physical activity also has been demonstrated to promote mental functioning central to cognitive development. When considering the beneficial effects of physical activity it appears apparent that early childhood educational programs should incorporate physical activity into their academic curriculum.

## References


California Department of Education (2005). A study of the relationship between physical fitness and academic achievement in California using 2004 test results.

Carlson SA, Fulton JE, Lee SM, Maynard LM, Brown DR, Kohl HW, & Dietz WH, (2008). Physical education and academic achievement in elementary school:

Castelli DM, Hillman CH, Buck SM & Erwin HE, (2007). Physical fitness and academic
Centers for Disease Control and Prevention, (2002). National diabetes fact sheet: general
Chomitz VR, Slining MM, McGowan RJ, Mitchell SE, Dawson GF, & Hacher KA, (2009).

Davis CL, Tomporowski, CA, Boyle JL, Walter JL, Miller PH, Naglieri JA, & Gregoski, M. (2007). *Research Quarterly for Exercise and Sport*, 78: 510-519.

Dowda M, Pate RR, Trost SG, Joao M, Almeida CA, & Sirard JR, (2004). Influences of
preschool policies and practices on children's physical activity, *Journal of Community*
Finn KJ, & Specker B, (2000). Comparison of actiwatch activity monitor and children's activity

Flook L, Repetti RL, & Ullman JB, (2005). Classroom social experiences as predictors.
Hillman CH, Castelli DM, & Buck SM, (2005).Aerobic fitness and neurocoginitive function in healthy preadolescent children, *Medicine and Science in Sports and Exercise*, 37: 1967-

Jackson-Leach R, Lobstein T, (2006). Estimated burden of pediatric obesity and co-morbidities in Europe: Part 1. The increase in prevalence of childhood obesity in Europe is itself increasing. *International Journal of Pediatric Obesity*, 1: 26-32.

Jago R, Baranowski T, Thompson D, Baranoski J, & Greaves KA, (2005). Sedentary behavior,n not TV viewing, predicts p hysical activity among 3- to 7- year-old children. *Pediatric*

Kramer AF, Colcombe S, Erickson K, et al, (2002). *Journal of Monocular Neuroscience*, 19:

Lee, S, Burgeson LS, Fulton J, & Spain C., (2007). Physical education and physical activity: results from the School Health Policies and Programs Study of 2006. *Journal of School Health*, 77: 435-463.

Lobstein T, Baur L, and Uaury R, (2004). Obesity in children and young people; a crisis in public health, *Obesity Review,* 5: (Suppl. 1)4-85.
Moore LL, Di Gao AS, Bradlee ML, Cupples LA, Sundarajan-Ramamurti A, Proctor MH, et al., (2003). Does early physical activity predict body fat change throughout childhood.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp45-46**
**Journal Impact factor 0.5190**

# Indian sports and Politics a History

**G. Kamalakar, Research Scholar**
**Dept of Political Science Osmania University Hyderabad**

**Abstract**
India has hosted and co-hosted several international sporting events, such events include the 1951 Asian Games and the 1982 Asian Games, the 1987 Cricket World Cup and 1996 Cricket World Cup, the 2003 Afro-Asian Games, the 2010 Hockey World Cup, the 2010 Commonwealth Games, and the2011 Cricket World Cup. Major international sporting events annually held in India include the Chennai Open, Mumbai Marathon, Delhi Half Marathon, and the Indian Masters. India also hosted its first Indian Grand Prix at the Buddh International Circuit, an Indian motor racing circuit in Greater Noida, Uttar Pradesh in India. Cricket has a long history in India, having been introduced in the country during the British rule. It is the most popular sport by a wide margin in India and is often considered as an unofficial religion in India.
Key words: *Indian, history, politics, sports,*

**Introduction**
It is played on local, national, and international levels and enjoys consistent support from people in most parts of India. Its development has been closely tied up with the history of the country, mirroring many of the political and cultural developments around issues such as caste, gender, religion, and nationality. The Indian cricket team played its first official match (a Test) in 1932 against England and its performance since then has generally been mixed, sometimes enjoying stupendous success and sometimes suffering outright failure. The highest profile rival of the Indian cricket team is the Pakistani cricket team, though in recent times it has gained other rivals like Australia, South and England.
Field hockey is considered the national sport in India, and the country has won eight Olympic gold medals in field hockey, though cricket is the most popular sport. Recent RTI revealed that India has no national game. After the 1982 Asian Games hosted in New Delhi, the capital city (New Delhi) now has modern sports facilities, and similar facilities are also being developed in other parts of the country. Besides sports and games included in the international sporting agenda, there are many which have developed indigenously and continue to be popular.
A wide variety of sports is played throughout the country. These include kabbadi, kho kho, pehlwani, and gilli-danda. British rule brought many popular sports in India including football, rugby union, cricket, golf, tennis, squash, field hockey, boxing, snooker, and billiards.
Although cricket is the most popular sport in India, it is not the nation's official national sport (a distinction held by field hockey). The governing body for cricket in India, the Board of Control for Cricket in India (BCCI), was formed in December 1928 and is based in Mumbai. Today, BCCI is the richest sporting body in the world.
India has hosted or co-hosted a large number of multi-nation major international cricket tournaments viz. the 1987 Cricket World Cup (co-hosted with Pakistan), the 1996 Cricket World Cup (co-hosted with Pakistan and Sri Lanka), the 2006 ICC Champions Trophy and the 2011 Cricket World Cup (co-hosted with Sri Lanka and Bangladesh). The India national cricket team has won major tournaments like the 1983 Cricket World Cup in England, the 2007 ICC World Twenty20 in South Africa, the 2011 Cricket World Cup which they won by beating Sri Lanka in the final at home, and has shared the 2002 ICC Champions Trophy with Sri Lanka. It had also briefly held the position of the No. 1 team in Tests. The domestic competitions include the Ranji Trophy, the Duleep Trophy, the Deodhar Trophy, the Irani Trophy, and the Challenger Series, all of which are not widely followed, despite cricket's popularity in the country.

Thisparallels the global situation in cricket, whereby the international game is more widely followed than the domestic game in all major cricketing countries.

In addition, the BCCI conducts the Indian Premier League, a domestic franchise-based Twenty20 competition, during March–April every year and is extremely popular. Sports is one area where India lags behind even some of the poorest nations in the world. This despite the huge pool of talented sportsperson that exists in all parts of India. At the junior levels, our boys and girls can compete with the best in the world in almost every sport. However when it comes to the senior levels, where the actual capabilities of our sportsperson are tested, we fail miserably. This shows that it is not the lack of talent that bogs down our athletes but somewhere along the line; it is the lack of proper training that lead to their poor performances in the international arena.

The fact that professional sportsperson in our country face a lot of hardships cannot be denied. There are usual problems of lack of infrastructure and funds, lethargic approach on the part of government agencies and indifference of the corporate sector in providing sponsorships. However the fundamental problem lies in the absence of a sporting culture in India. Sports in India are considered a secondary and supplementary activity. This explains to a large extent, the apathy on the part of the government machinery towards sports. The corporate indifference too stems from the fact that they are not sure that the sponsorship money will be efficiently used in promoting the game and for the welfare of the players.

An international sport is highly competitive where only the best and the brightest can hope to reach the top position. Past experience has shown that the government run organizations like the Sports Authority of India (SAI) have consistently failed to produce athletes who can compete at the international level. Hence government should withdraw itself from the administration and running of sports at the senior levels. The corporate sector should be encouraged to take full control of the management of games and training of athletes. This only will ensure greater accountability on the part of the players and the coaches to show results. It should restrict its role to promoting sporting activities at the school and college levels and in providing jobs to meritorious sportsperson. It should make all efforts to encourage young boys and girls to take up sports as a full time profession and not as a secondary.

**Conclusion**

I would like to say that it is not we who are averse to sports. In fact, in urban areas, our Generation has already turned to basketball and football and not just stuck to cricket. It would be optimistic to consider that this change will soon affect the rural areas too. However, the nature with which sports is handled in the country has made our interaction with it mainly restricted to television viewings and video games. A more integrated approach to Sports Education in the country would perhaps drive us from our living rooms into the nearby playgrounds. It may go a long way in converting the potential interest of the Youth of India into a physical reality.

**Reference**

"Infrastructure: S&T Education", *Science and Technology in India* edited by R.K. Suri and Kalapana Rajaram (2008), New Delhi: Spectrum, ISBN 81-7930-294-6.

Blackwell, Fritz (2004), *India: A Global Studies Handbook*, United States of America: ABC-CLIO, Inc., ISBN 1-57607-348-3.

Desai, Sonalde, Amaresh Dubey, B.L. Joshi, Mitali Sen, Abusaleh Shariff and Reeve Vanneman. 2010. India Human Development in India: Challenges for a Society in Transition. New Delhi: Oxford University Pres

Elder, Joseph W. (2006), "Caste System", *Encyclopedia of India (vol. 1)* edited by Stanley Wolpert, 223–229, Thomson Gale: ISBN 0-684-31350-2.

*India 2009: A Reference Annual (53rd edition)*, New Delhi: Additional Director General (ADG), Publications Division, Ministry of Information and Broadcasting, Government of India, ISBN 978-81-230-1557-6.

Krishnamoorthy, Suresh (23 March 2012). A. The *Hindu*. Retrieved 25 March 2012.

Prabhu, Joseph (2006), "Educational Institutions and Philosophies, Traditional and Modern", *Encyclopedia of India (vol. 2)* edited by Stanley Wolpert, 23–28, Thomson Gale: ISBN 0-684-31351-0.

Raman, S.A. (2006). "Women's Education", *Encyclopedia of India (vol. 4)*, edited by Stanley Wolpert, 235–239, Thomson Gale: ISBN 0-684-31353-7.

Setty, E.D. and Ross, E.L. (1987), "A Case Study in Applied Education in Rural India", *Community Development Journal*, 22 (2): 120–129, Oxford University Press.

Sripati, V. and Thiruvengadam, A.K. (2004), "India: Constitutional Amendment Making The Right to Education a Fundamental Right", *International Journal of Constitutional Law*, 2 (1): 148–158, Oxford University Press.

*The Siasat Daily*. 20 December 2009. Retrieved 17 June 2012.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp47-49**
**Journal Impact factor 0.5190**

# Sport Pedagogy

**Dr.V.Satyanarayana,Director of Physical Education, OU,Hyd**

**Dr.K. Stalin Babu**
**Doctoral Scholar**
**Department of Physical Education, Osmania University, Hyderabad, A.P.**

## INTRODUCTION

It is explored, from a pedagogical perspective, the role of Sport Education within Physical Education (or Health and Physical Education) 'as a whole'. For over a decade Sport Education, first developed in the United States by Daryl Siedentop, has been adopted and adapted by Physical Education teachers and teacher educators in many countries.This sustained interest, little attention has been directed towards the contextualization (pedagogically) of Sport Education within Physical Education.Furthermore, it is clear what developments need to accompany and inter-relate with Sport Education if the Physical Education curriculum as a whole is to successfully facilitate the full breadth of learning that it is associated with and/or required to address in the context of national or state frameworks? Exploration of these issues seems essential if the potential contribution of Sport Education to Physical Education is to be realised, and Physical Education 'as a whole' strengthened in that process. We therefore encourage a move away from the tendencies for Sport Education to be viewed in relative isolation, and to remain a development celebrated by some but simultaneously viewed with uncertainty and concern by others (Tinning, 1995).

### Sport Education : Pedagogical framework

Sport Education has been developed differently by different people in different contexts. Variously, it has been a prompt and focus for the reform of Physical Education curricula (or parts of them) and pedagogical practices. Interestingly, Siedentop (1994) avoided direct reference to the term pedagogy. Instead he identified Sport Education as "an excellent vehicle for reaching physical education objectives" and "a curriculum and instruction model developed for school physical education programs". Siedentop stated that the model had *particular* goals and objectives, that were compatible with established goals and objectives within physical education. His concern was that children should be educated "in the fullest sense" and that they should be helped to "develop as competent, literate, and enthusiastic sportspeople" (Siedentop, 1994). He emphasised that addressing these goals and objectives demanded that physical education teachers adopt new strategies in curriculum planning, new approaches to the design and delivery of lessons and new assessment tasks and methods. A number of characteristics of the curriculum, teaching and learning have subsequently come to define Sport Education; namely:
The adoption of a seasonal format for units of work; Pupils being members of teams that are retained throughout a unit of work and being provided with opportunities to develop skills, knowledge and understanding relating to a number of roles associated with teams and competitive sport; Units featuring teaching and learning directed towards engagement in formal sporting competition, and therefore involving, for example, practice sessions, pre-season games and a formal competition phase; Units featuring a 'culminating event' or festival; Record-keeping relating to various aspects of team performances throughout the unit, with this used as a basis for feedback to individuals and teams; The celebration of the festive nature of sport, via for example, the use of team names and team uniforms.

Metzler (2000) recently developed such a view, identifying Sport Education as one of seven 'instructional models', each of which is presented as a "coherent framework" for teachers to employ in helping students to achieve particular goals. He explained that;
An *instructional model* refers to a comprehensive and coherent plan for teaching that includes: a theoretical foundation, statements of intended learning outcomes, teacher's content knowledge expertise, developmentally appropriate and sequenced learning activities, expectations for teacher and student behaviors, unique task structures, assessment of learning outcomes, and ways to verify the faithful implementation of the model itself.
Metzler (2000) specifically considered the 'pedagogical framework':
the range of learning outcomes that we associate with a comprehensive Physical Education curriculum;
the outcomes that Sport Education can clearly be associated with and the various ways in which these outcomes may be addressed in contexts of Sport Education so as to also develop linkages with other learning in Physical Education; and finally,
parallel developments in physical education that Sport Education needs to be seen, positioned and developed in relation to.

**Pedagogy**

Pedagogy has been described as "the missing ingredient" in the context of the development of Physical Education (Almond, 1997) but that is also acknowledged as meaning "different things to different people" (Tinning, 1992, p.24). As others have noted (Penney and Waring, 2000) neither the relative absence of discussion of pedagogy, nor the conceptual confusion surrounding it is unique to Physical Education. Watkins and Mortimer (1999) have stressed that while pedagogy may often be associated primarily or exclusively with teaching approaches, methods and associated teacher-pupil relations, "didactics" is arguably a more appropriate term if the focus is *only* upon the teacher's role and activity. They clarify that talk of pedagogy demands that we engage with more elements of curriculum development teaching and learning and also, the inter-relationships between elements.

**Sport Education: learning and pedagogy**

Taking the four domains of psychomotor; affective; cognitive; and social, we can usefully reflect upon a number of points. Sport Education may frequently be regarded as raising the profile of the affective and social domains, directing both teachers and learners to more explicit engagement with these (see for example, Carlson, 1995). But that is not to say that we can assume positive affective and social learning outcomes will be achieved by all pupils or in all contexts of Sport Education (Penney et al., 2002). The inherent complexity of Sport Education as a 'pedagogical framework', such that there can and will be variations in terms of many of the elements of the framework, means that any generalisations about the learning outcomes that are most likely to be achieved seems fundamentally flawed. Some observers may question whether the psychomotor domain can be effectively addressed in contexts of Sport Education, or more specifically, whether all pupils will see improvement in this domain. Also, to what extent does Sport Education develop the cognitive abilities of students? In its 'purest form' there seems to be little emphasis placed on the specific development of higher order cognitive skills. It could be argued that Sport Education does little more than develop students as consumers of *existing* sport knowledge.

**Conclusion – Sport Education in Physical Education**

As we indicated in the introduction, what, in pedagogical or even 'content' terms, should accompany and complement Sport Education, in what contexts and with what learning and learners in mind, are matters that to date, have been largely unexplored by both the proponents and critics of Sport Education. Considering potential accompaniments raises interesting issues and further dilemmas. Above we have pointed to the scope for TGFU/Game Sense to feature within Sport Education. But that does not preclude TGFU/Game sense being defined, identified and positioned as a pedagogical framework 'in its own right' in Physical Education.

Similarly, some may see Sport Education as an arena in which there is important scope and potential to pursue elements of critical pedagogy, but we can nevertheless still envisage each (Sport Education and Critical Pedagogy) as a separate entity. In identifying seven 'instructional models', Metzler positioned Sport Education alongside "direct instruction"; "personalized systems for instruction"; "cooperative learning"; "peer teaching"; "inquiry model"; and "tactical games". We would suggest that not all of these suit the notion of a pedagogical framework as we have represented it. Some (such as peer teaching) are more obviously equated to elements that are integral to the framework, and that could therefore feature in a number of frameworks. They thus provide key points of potential connection and the means by which coherency in teaching and learning may be enhanced. But they leave us with the outstanding dilemmas, of how precisely we should be thinking of Sport Education in relation to Physical Education 'as a whole', and most notably, of what we should regard as key accompanying pedagogical frameworks.

**References**


ALMOND,L. (1997) Sport education in schools. In L.Almond (Ed.) *Physical Education in Schools.* London : Kogan Page

CURRICULUM CORPORATION (1994) *A statement on health and physical education for Australian schools.* Carlton : Curriculum Corporation.

EVANS,J. & PENNEY,D. (1996) The Role of the Teacher in PE : Towards a Pedagogy of Risk. *British Journal of Physical Education*, 27,4, pp.28-35.

METZLER,M.W. (2000). *Instructional Models for Physical Education*. Boston : Allyn & Bacon.

PENNEY,D. & WARING,M. (2000) The Absent Agenda: Pedagogy and Physical Education. *Journal of Sport Pedagogy*, 6,1, pp.4-37.

SIEDENTOP, D. (1994) (Ed.) *Sport Education: Quality PE Through Positive Sport Experiences.* Champaign, Illinois : Human Kinetics.

TINNING, R. (1995) The Sport Education Movement: A Phoenix, Bandwagon or Hearse for Physical Education, *The ACHPER Healthy Lifestyles Journal,* 42, 4, pp.19-21.

WATKINS,C. & MORTIMORE,P. (1999) Pedagogy : What do we know ? In P.MORTIMORE (Ed.) *Understanding Pedagogy and its Impact on Learning*. London : Paul Chapman Publishing.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp50-52**
**Journal Impact factor 0.5190**

# A Study on the effect of Plyometric exercises for development of Speed among Foot Ball Players of Osmania University

**Dr.Rajesh Kumar**
**Associate Professor, Dept. of Physical Education, OU, Hyd**

**Abstract:** Background: The Plyometric exercises are a vital component for foot ball players for maximal speed and should be included in any conditioning program. Plyometric exercise such as hopping, bounding, jumping etc are very essential to the foot ball players. Plyometric is used to increase the speed or force of muscular constructions, providing explosiveness for a Varity of sport specific activities. Plyometrics are useful for several sports notably soccer, rugby, basketball, track and field athletics, racket sports and martial arts.The Purpose of the the present study to find out the effect of Plyometric exercises for the development of Speed among foot Ball players of Hyderabad in India..Method:The sample for the present study is forty Osmania Male Foot Ball Players from various colleges of Osmania University.. The experimental group is 20 male foot ball players and controlled group is 20 University Male foot ball players . The sixweeks of training were given to the experimental group which consists of Plyometric exercises on alternate days i.e. three sessions per week and controlled group were given general training. 30 Meter Run were used for Pre Test and Post Test for both the experimental and controlled group to find out the effect of Plyometric exercises for development of Speed.Result:This study shows that due to the Plyometric exercise the experimental group has shown vast improvement compare to the controlled group in Pre Test and Post Test results.Conclusions:It is concluded that due the Plyometric Exercies there will improvement of Speed among foot ball players in India.
**Key Words:** Plyometric exercises, foot ball , Speed etc.

## INTRODUCTION

Plyometric training involves and uses practicing plyometric movements to enhance tissues abilities and train nerve cells to stimulate a specific pattern of [muscle contraction] so the muscle generates as strong a contraction as possible in the shortest amount of time. A plyometric contraction involves first a rapid muscle lengthening movement (eccentric phase), followed by a short resting phase (amortization phase), then an explosive muscle shortening movement (concentric phase), which enables muscles to work together in doing the particular motion. Plyometric training engages the myotatic reflex, which is the automatic contraction of muscles when their stretch sensory receptors are stimulated.

Muscular power and muscular strength are two different things. Muscular strength refers to how much force can be applied (The ability to lift a heavier weight as opposed to a lighter one). Strength alone is good indicative of speed. Although muscle strength is correlated to sprint performance, research has shown that combining both resistance training and plyometric training will have better effects on training. While plyometrics assists in rapid force development (power), weight training assists in maximal force output (strength). Power refers to the combined factors of speed and strength. Performance in many sports is based on different types of power. In American Football, a lineman and a receiver may have the same power, but they have different limitations in how their power is delivered. The lineman would be speed-limited, whereas the receiver would be strength-limited. The purpose of plyometrics is to emphasize speed-based power. One activity that requires speed-favored power is high jumping: ultimately, jump height is determined by how fast one is moving once one's legs have left the ground. Good jumpers may

not have exceptional leg strength, but they can produce it at exceptional speeds. Studies have shown that training a plyometric activity such as drop jump allows the athlete to increase the pre-activation and pre-stretch of the muscles and allows the coach to assess landing techniques that are vital to the production of force With the increase of force production, an athlete becomes more powerful explosive and stable when performing tasks decreasing risk of injury and increasing overall performance on the playing field.

Plyometric drills are used in many sports training programs to help build speed, power, improve coordination, agility, and improve sports performance. Any athlete that participates in sports that involve jumping, landing, or explosive moves can benefit from plyometric drills. Many plyometric exercises are especially geared toward football training. Using plyometrics for soccer is one the most effective ways to increase explosive speed and power.

The game of football is any of several similar team sports of similar origins which involve advancing a ball into a goal area in an attempt to score. Many of these involve kicking a ball with the foot to score a goal, though not all codes of football using kicking as a primary means of advancing the ball or scoring. The most popular of these sports worldwide is association foot ball , more commonly known as just "football" or "soccer" Unqualified, the word *football* applies to whichever form of football is the most popular in the regional context in which the word appears, including American football, Australian rules football etc.

Speed is a key component of Physical fitness which is very important for Foot Ball Players for giving the high level of performance in competition.Speed is the performance pre requisite to do motor actions under given conditions in minimum of time. Speed is the quickness of movement of a limb, whether this is the legs of a runner or the arm of the shot putter. Speed is an integral part of every sport and can be expressed as any one of, or combination of, the following: maximum speed, elastic strength and speed endurance.

**Method:**

The Purpose of the the present study to find out the effect of Plyometric exercises for the development of Speed among foot Ball players of Osmania University.The sample for the present study is forty Osmania University Male Foot Ball Players from various colleges of Osmania University in India. The experimental group is 20 male foot ball players and controlled group is 20 University Male foot ball players . The six weeks of training were given to the experimental group which consists of Plyometric exercises on alternate days i.e. three sessions per week and controlled group were given general training. Plyometric exercises such hopping, bounding, depth jumps etc. are used in the training for the experimental group.30 Meter Run were used for Pre Test and Post Test for both the experimental and controlled group to find out the effect of Plyometric exercises for development of speed.

**30 Meters Run:**
**purpose:** The aim of this test is to determine speed.

**Equipment required:** measuring tape**,**or marked track,stop watch, cone markers etch. flat and clear surface of at least 50 meters.

**Procedure:** The test involves running a single maximum sprint over 30 meters, with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line. This starting position should be held for 2 seconds prior to starting, and no rocking movements are allowed. The tester should provide hints for maximizing speed (such as keeping low, driving hard with the arms and legs) and encouraged to continue running hard through the finish line.

## Results

This study shows that due to the Plyometric exercise the experimental group has shown vast improvement compare to the controlled group in Pre Test and Post Test results.

## Discussion

Table - I

| Pre Test | GROUP | N | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| 30 M | Experimental Group | 20 | 4.41 | 0.24 | 0.08 | -1.81 | 38.00 | 0.09 |
| 30 M | Control Group | 20 | 4.49 | 0.46 | 0.15 | | | |

In Table No.1 in Pre Test in 30 M Run The Mean score of Experimental Group is 4.41 and controlled group is 4.49 there is a difference of 0.08 between both the groups.

**Table - II**

| Post Test | GROUP | N | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| 30 M | Experimental Group | 20 | 4.21 | 0.22 | 0.06 | -1.81 | 38.00 | 0.09 |
| 30 M | Control Group | 20 | 4.51 | 0.44 | 0.13 | | | |

In Table No.2 in Post Test in 30 M Run The Mean score of Experimental Group is 4.21 and controlled group is 4.51 there is a difference of 0.30 between both the groups. The Experimental group has increased 0.20 between Pre Test to Post Test due to plyometric training and controlled group is decreased by 0.03 due to the general training.

## Conclusion:

It is concluded that due to the Plyometric Exercises there will improvement of Speed among foot ball players in Osmania University,

## References


1.(Bobbert, MF, Huijing, PA, and Van Ingen Schenau, GJ. Drop jumping I. The influence of jumping technique on the biomechanics of jumping. Med Sci Sports Exerc 19: 332-338, 1987)

2.Granacher, U., Gollhofer, A., & Kriemler, S. (2010). Effects of balance training on postural sway, leg extensor strength, and jumping height in adolescents. Research Quarterly For Exercise And Sport, 81(3), 245-251.

3. Dabbs, N, Khamoui, AV, Diamond N, Uribe, BP, Tran, T, Jo, E, Brownm LE, Coburn, JW, Judelson, DA, Noffal, GJ. Differences in Vertical Jump Performance by Force Production. Journal of Strength and Conditioning Research; January 2010 – Volume 24 Supplement 1

4. Wikipaedia Plyometric training and football

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp53-57**
**Journal Impact factor 0.5190**

# Strength, Pain & Functional Performance of Osteoarthritis Knee Patients before & after Mobilization and Resistance Training Programme

**Manu Goyal[*], Ashok Kumar[**] & Priyanka Rishi[***]**
***Ass. Professor & Head, MM Institute of Physiotherapy & Rehabilitation, MM University, Mullana, Haryana, India**
**[**]Ass. Professor, Department of Sports Science, Punjabi University Patiala, Punjab, India**
***** MPT Student, MM Institute of Physiotherapy & Rehabilitation, MM University, Mullana, Haryana, India**

**Abstract**
The purpose of the study was to observe the effect of combination of a mobilization and resistance training treatments on strength, pain and functional performance in osteoarthritis knee patients. A total of 30 patients (all females) were selected as subjects and they were further divided into 2 groups. Each group comprising of 15 subjects each. The results of the present study suggest that there was an improvement in the mean values of Numeric Pain Rating Scale, extensor torque and WOMAC scale scores after treatment in both groups. But it was found that an improvement was statistical significant more in mobilization and resistance group than resistance training group alone. It was concluded that if the patients of knee osteoarthritis were treated with combination therapy (mobilization & resistance training) then there was noticed significant recovery from pain, strength, functional performance in them.
**Keywords:** Osteoarthritis, Functional disability, Strength, Pain

## Introduction

Osteoarthritis (OA) is a chronic localized joint disease and is the most common cause of the disability affecting approximately one third of the adults with the disease prevalence increasing with advancing age. OA is an extremely common condition after 40 years of the age. It is wide spread in adults over 60 years and affects women more than men (Felson et al, 1987). Degenerative osteoarthritis is a disease characterized by pain and disability (Lawrence et al, 1998).Pain is an important predictor of functional limitation in persons with osteoarthritis of knee (Hochberg et al, 1989). Degenerative osteoarthritis grows worse with age; if left untreated, the disease may increase the risk of falls and decrease longevity (Leaf, 1993). Treating pain and disability resulting from degenerative osteoarthritis incurs large health care expenses and inadequate treatment results in long lasting pain and disability in afflicted patients (McAlindon et al, 1993). The number of people with functional limitations caused by OA is projected to climb to 11.6 million by 2020, which will result additional economic impact and will have a significant effect on health care systems (Peat et al, 2001). To date most osteoarthritis research examining treatment for osteoarthritis has focused on surgical or pharmacological strategies although effective; these types of interventions have many potential side effects and are expensive (Dieppe et al, 2004).Thus recent knee osteoarthritis clinical guidelines reinforce the importance of non pharmacological strategies (physiotherapy) in the management of the condition(Jordan et al, 2003).Physiotherapy encompasses numerous treatment modes including exercises, manual techniques, taping and education to impart patient self management strategies. Both manual therapy and resistive exercises to degenerative osteoarthritis patients have improved the 6 minute walking distance for and the disability index after 8 weeks.

## Materials & Method

The 30 patients of knee osteoarthritis all females in the age range of 45 to 65 years were selected as subjects after obtaining their consent based on inclusion and exclusion criteria of the study. The subjects were further divided into two groups: Group-MT (n=15) and Group-RT (n =15).

*Treatment Protocol:* The subjects of Group-MT underwent a mobilization (anterior, posterior and distal gliding) plus resistance training treatment comprising of quadriceps isometric exercise, thera band exercises, leg press exercise using thera band and concentric and eccentric contraction respectively. The training frequency of mobilization was three times per week, training volume per session was twice for 30 seconds for 4 weeks. On the other hand, the subjects of Group-RT underwent only resistance training comprising of quadriceps isometric exercise, thera band exercises, leg press exercise using thera band and concentric and eccentric contraction respectively. The training frequency of resistance training for both groups was 3 times per week, training volume per session was quadriceps isometric exercise 1set of 10 repetitions with 6seconds hold and 10 seconds break between each repetition, thera band exercises were performed 12 times for 1.5 minutes and then concentric contractions (1 second) and eccentric contraction (2 seconds) for 4 weeks. The isometric exercises comprising of pressing down on the therapist fist placed behind the knee joint while the subject is lying supine. The thera band exercises were performed with subject in standing position with the knee joint extended to the end of the range and repeated knee extension exercise using an elastic thera band (yellow) and afterwards seated leg press using an elastic thera band (yellow). Each session for both the groups last for 40 minutes each respectively. The scores of NPRS (Numeric Pain Rating Scale), WOMAC and strength (extensor torque measured by Isokinetic dynamometer at an angular velocity of $60^0$) of each subject of Group-MT and Group-RT were recorded before and after 4-weeks.

## Statistics

The data was analyzed using statistical computer software 'SPSS 13 software package (version 13, SPSS Inc. Chicago, USA) '. The t-test, Wilcoxon Signed rank test and Mann-Whitney U test was used. The level of significance was $p<0.05$.

## Results & Discussion

The mean age and BMI of the subjects of Group -MT and Group-RT was 52.33±5.23 years, 51.20±5.34 years, 30.73±4.42 Kg/$m^2$ and 29.55±4.29 Kg/$m^2$ respectively. It was found that the difference in the mean values of age and BMI between Group -A and Group-B was not statistical significant (Table 1).

**Table 1. Comparison of Age & BMI**

| | Group MT | Group RT | t-value |
|---|---|---|---|
| Age(years) | 52.33±5.23 | 51.20±5.34 | 0.587 |
| BMI(Kg/$m^2$) | 30.73±4.42 | 29.55±4.29 | 0.743 |

*significant p<0.05

Table 2 shows the comparison of scores of Numeric Pain Rating Scale (NPRS), Strength (Extensor Torque) and WOMAC between Group-MT and Group-RT before and after four weeks. It was found that before the start of four week treatment programme to the subjects of Group-MT and Group-RT there was no statistical difference in the scores of NPRS, Extensor Torque and WOMAC. After four week there was statistical significant difference in the scores of NPRS, Extensor Torque and WOMAC in both the groups but a greater improvement was observed in Group-MT as compared to Group-RT (Table 2).

**Table 2. Comparison of Mean ± SD Scores (Unpaired t - test) of NPRS, Strength (Extensor Torque) & WOMAC (Mann Whitney U) among different groups**

| | | Group MT | Group RT | t-value |
|---|---|---|---|---|
| NPRS | before | 6.53±1.06 | 6.53±0.91 | |
| | after 4 week | 2.80±0.56 | 1.93±0.96 | 3.01* |
| Extensor Torque | before | R 47.20±3.14 | 11.07±2.96 | |
| | | L 38.73±2.52 | 40.80±3.14 | 11.60* |
| | after 4 week | R 10.33±1.04 | 4.80±1.20 | |
| | | L 10.27±1.98 | 3.53±1.06 | |
| WOMAC (Median±SD) | before | 43.83±8.64 | 43.60±7.85 | |
| | after 4 week | 26±22 | 33±23 | 45* (u - value) |

*significant p<0.05; NPRS- Numeric Pain Rating Scale

Further, it was found that in Group-MT there was a statistical significant improvement in the scores of NPRS, Strength (Extensor Torque) &WOMAC after four weeks (Table 3).

**Table 3. Paired t-test of NPRS, Strength (Extensor Torque) & WOMAC (Wilcoxon signed rank test) of Group MT**

| | before | after 4th week | t-value |
|---|---|---|---|
| NPRS (Mean±SD) | 6.53±1.06 | 3.73±1.03 | 19.34* |
| Extensor Torque (Mean±SD) | R 47.20±3.14 | 57.53±3.24 | 38.24* |
| | L 38.73±2.52 | 49.00±4.07 | 20.07* |
| WOMAC (Median±SD) | 43±29 | 26±22 | 0.00*(Wilcoxon test value) |

*significant p<0.05; NPRS- Numeric Pain Rating Scale

Similarly, in Group-RT there was a statistical significant improvement in the scores of NPRS, Strength (Extensor Torque) & WOMAC after four weeks (Table 4).

**Table 4. Paired t-test of NPRS, Strength (Extensor Torque) & WOMAC (Wilcoxon signed rank test) of Group RT**

| | before | after 4th week | t-value |
|---|---|---|---|
| NPRS (Mean±SD) | 6.53±0.91 | 4.60±0.91 | 7.79* |
| Extensor Torque (Mean±SD) | R 45.13±3.22 | 49.93±3.84 | 15.40* |
| | L 40.80±3.12 | 44.33±3.01 | 12.90* |
| WOMAC (Median±SD) | 43±29 | 33±23 | 0.00*(Wilcoxon test value) |

*significant p<0.05; NPRS- Numeric Pain Rating Scale

## Discussion

The results of the present study shows that subjects in both the groups had significant decrease in pain, increase in strength and improvement in WOMAC index. However, out of the two groups, the Group-A receiving mobilization (Maitland Mobilization) along with resistance training had a higher percentage of change in both muscle strength and physical function as compared to resistance training alone. Therefore the null hypothesis is rejected. There were very few studies (Hugo et al, 2005; Jansen et al, 2011; Deyle et al, 2000 ) done on mobilization & resistance training programme in isolation which shows their effectiveness but the results obtained from this study are novel that proves the combined efficacy of mobilization & resistance training program administered in osteoarthritis patients. Both the groups in present study had equal number of subjects and there was no significant difference found with respect to their gender distribution, age and body mass index. Manual mobilisations may have shown significantly better effects compared to exercise alone in terms of pain relief. Moss et al., (2006) analysed the effect of knee joint mobilisation on osteoarthritic hyperalgesia and found favourable effects on pain reduction. From a biomedical perspective, oscillatory (e.g., in traction degrees I and II) manual techniques are intended to induce pain inhibition. Furthermore, the purpose of manual mobilisation techniques is to restore damaged periarticular and intra-articular connective tissue that could be implicated as symptom source in patients with osteoarthritis of the knee as suggested by Deyle et al., (2000). Mueller et al, (1995) reported that the strength of the dorsiflexor of the ankle joint highly correlates with the range of dorsiflexion of the ankle joint. It was also reported that manual therapy improves the arthrokinematics of the knee joint and increases the range of motion, and that additional resistive exercise effectively enhances improvements in muscle strength and functional performance as concluded by Fortin et al (1999). In the current study, quadriceps strength increased significantly in both the RT and MT groups respectively, but the increase was larger in the later group as bolstered by the study of Mueller et al (1995). A number of studies has examined the effects of resistive exercises for OA knee patients, numerous previous investigators (Beneka et al, 2005) have found that the strength declines among older adults can be reversed through regular resistance training , even among frail older adults as reported by Thomas et al (2003). Huang et al (2003) concluded that the Isokinetic and Isotonic groups of degenerated OA knee showed the largest increase in muscle strength at an angular velocity of $60^0$ as shown by the results procured from the present study.

Follan and Williams (2007) , concluded that the gains in strength with resistance strength training are due to combination of neurological (synchronization and motor unit firing) and morphological factors (increase in the cross sectional area of the whole muscle and individual muscle fibres, which is due to an increase in myofibrillar size and number). Although the neurological factors may make their greatest contribution during the early stages of a training program, so do hypertrophic processes (due to activation of satellite cells) as YasuoKawakami (2005) and Higbie et al (1996) concluded in their study that the increase in strength is proportional to the amount of overload as measured by the relative force developed and number of muscle actions performed during conditioning. Muscle hypertrophy seems to account for a portion of strength gains observed in the patients. Maria et al (1990) have shown that high intensity strength training is visible and is associated with significant gains in strength and muscle hypertrophy in individuals up to 96 years of age. Fortin et al (1999) concluded that a combination of manual physical therapy and supervised exercise yields functional benefits for patients with OA of the knee and may delay or prevent the need for surgical intervention. Improvements in functional performance through resistive exercises have been observed in women, because muscle coordination improves proprioception and consequently, enhanced functional performance (Thompson, 2001). Hughes et al (1996) reported an increase in muscle strength of the elderly is a major factor for improving functional performance and weakening of the quadriceps femoris muscle in degenerative OA patients decreases functional performance and thus determines the severity of disability (Hurley et al, 1998). In the present study, improvement in quadriceps strength resulted in improvement of WOMAC scale that includes pain, stiffness and function. Future research is needed using a control group to evaluate the treatment approach used in the study. Further studies are needed to compare the effects in terms of severity of degenerative OA, while noting post intervention musculoskeletal functions, medication use, and patient satisfaction.

## Conclusion

It was concluded that if the patients of knee OA use the combination treatment (mobilization and resistance training) can reduce the pain, improve strength and physical function in them more effectively.

## References


BaerA.P., Lisa M Thomas, ZevShainhouse. Treatment of ooarthritis of the knee with topical diclofenac solution: A Randomized Controlled , 6 week trial .*BMC Musculoskeletal Dis.* 2005;**44**(6)255-59.

Beneka A, Malliou P, Fatouros I, Jamurtas A, Gioftsidou A, Godolias G, Taxildaris K. 2005. Resistance training effects on muscular strength of elderly are related to intensity and gender . *J Sci Med Sport*. Sep;**8**(3):274-83.

Bjordal M.J., Johnson I.M., Rodrigo AB Lopes-Martins, BardBogen. 2007. Short term efficacy of physical interventions in osteoarthritic knee pain. A systemic review and meta-analysis of randomized placebo-controlled trials. *BMC Musculoskeletal Dis.* **8**(5)822-29.

Deyle GD, Henderson NE, Matekal RL, et al: Effectiveness of manual physical therapy and exercise in osteoarthritis of the knee. A randomized, controlled trial. *Ann Intern Med.*2000;**1323**(3): 173-181.

Dieppe P.A., Ebrahim S., Martin R.M., Juni P. 2004. Lessons from the withdrawal of rofecoxib. *Bmj.* **329**:867–868.

Felson D.T., Naimark A., Anderson J., Kazis L., Castelli W. 1987. The prevalence of knee osteoarthritis in the elderly. The Framingham osteoarthritis study. *Arthritis& Rheumatism* August; **30** (8):914-918.

Follan P.J. and Williams G.A. 2007. The Adaptations to Strength Training Morphological and Neurological Contributions to increased Strength. *Sports Med* **37**(2): 145-168

Fortin P.R., Clarke A.E., and Joseph L. 1999. Outcomes of total hip and knee replacements:preoperative functional status predicts outcomes at six months after surgery.*Arthritis Rheum*. **42**:1722-8.

Higbie J.E., Cureton J.K., Gordon l. Warren III and Prior M.B. 1996. Effects of concentric and eccentric training on muscle strength, cross-sectional area, and neural activation. *J ApplPhysiol.* **81**:2173-81.

Hochberg M.C., Lawrence R.C., Everett D.F., Cornoni-Huntley J.1989. Epidemiologic associations of pain in osteoarthritis of the knee: data from the national health and nutrition examination-1. Epidemiologic follow up survey. *Seminars in Arthritis & Rheumatism* **8**(4suppl 2):4-9.

Huang M.H, lin-Yang RC, Lee CL. 2003. A comparison of various therapeutic exercise on the functional of patients with knee osteoarthritis. *Seminar Thritis Rheum*, **32**(6): 398-406.

Hugo L. Hoeksma, Joost Dekker, H. Karel Ronday, Annet Heering, Nico van der Lubbe, Cees Vel, Ferdinand C. Breedveld, Cornelia H. M. Van den Ende. Comparison of manual therapy and exercise therapy in osteoarthritis of the Hip.A randomized clinical trial *Arthritis & Rheumatism*(Arthritis Care & Research). 2005 October 15;**51**:722-29.Hurley M.V., Rees J, Newham D.J. 1998. Quadriceps function, proprioceptive acuity and functional performance in healthy young, middle-aged and elderly subjects. *Age Ageing* **27**:55-62.

Jamtvedt G., ThuveDahm K., IngerHolm, SigneFlottorp. 2008. Measuring physiotherapy performance in patients with osteoarthritis of the knee: A prospective study. *BMC Health Services Research.* **45** (8)1025-27.

Jansen MJ, Viechtbauer W, Lenssen AF, Hendriks EJM, de Bie RA (2011) Strength training alone, exercise therapy alone, and exercise therapy with passive manual mobilization each reduce pain and disability in people with knee osteoarthritis: a systemic review. *Journal of physiotherapy*.**57**:11-20.

Jordan K, Arden N, Doherty M, Bannwarth B, Bijlsma J, Dieppe P, Gunther K, Hauselmann H, Herrero-Beaumont G, Kaklamanis P, et al. 2003. EULAR recommendations 2003: an evidence based approach to the management of knee osteoarthritis: report of a task force of the Standing Committee for International clinical Studies Including Therapeutic Trials (ESCISIT)*AnnalsoftheRheumaticDiseases*. **62**:1145–1155.

Lawrence R.C., Helmick C.G., Arnett F.C. 1998. Estimates of the prevalence of arthritis and selected musculoskeletal disorders in the United States .*Arthritis Rheum* **41**(5):778-99.

Leaf A. 1993. Preventive medicine for our ailing health care system. *JAMA* **269**:616-18.

Maria A Fiatarone,Elizabeth C Marks,Nancy D Ryan, Carol N Meredith. High intensity strength training in nonagenarians Effects on skeletal muscle.*JAMA*.1990; **263**(22):3029-3034.

McAlindon T.E., Cooper C., Kirwan J.R., et al 1993. Determinants of disability in osteoarthritis of the knee. *Ann Rheum Dis*.**52**(4): 258-262.

Moss P, Sluka K, Wright (2006) The initial effects of knee joint mobilization on osteoarthritic hyperalgesia. *Manual Therapy* **12**:109-118.

Mueller M.J., Minor S.D., Schaaf J.A,et al. 1995. Relationship of plantar flexor peak torque and dorsiflexion range of motion to kinetic variables during walking *Phys Ther*. **75**(8):684-93.

Peat G., Mc Carney R., Croft P. 2001. Knee pain and osteoarthritis in older adults: a review of community burden and current use of primary health care . *Ann Rheum Dis* **60**:91-97

Thomas K.S., Muir K.R., Doherty M, et al. 2003. Home based exercise programme for knee pain and knee osteoarthritis; randomised controlled trial. *Clin J Sport Med* **13**(6):388-38.

Thompson K.R. 2001. The effects of resistance training on proprioception and function in older adults. Unpublished doctoral dissertation, Indiana University.

YasuoKawakami. 2005. The effects of strength training on muscle architecture in humans.*International journal of sport and health sciences*. **3**:208-217

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp58-61**
**Journal Impact factor 0.5190**

# "A Comparative Study Of Emotional Intellegence Between Sportman And Nonsportman''

**.**Ballasubramanium.C *Mahadeva.Musalmari*.Anita.K**

**. **Asst.Director, Dept of Physical Education.Govt.First Grade College,Aurada,Bidar**
**. *Research Scholar, Dept of Physical Education Singahania University Pacheribari ,Jhunjhunu Rajasthan**

**Abstract:**
The present study was an attempt to find out difference between sportsman and non sportsman in their emotional intelligence. To accomplish the objective of the study.100 sportsman having equal number of sportsman and nonsportsman were randomly drawn from the Karnataka state women's university. Emotional intelligence scale developed by Thimgujam and Ram (1999) was applied to collect the data. 't' test was applied to found out mean difference between sportsman and non sportsman. The results indicated that there is higher level of emotional intelligence among the sportsman than non sportsman

Keywords-emotional intelligence. Sportsman and non sportsman

**INTRODUCTION**: The human psychology is very complex phenomena. Emotional intelligence of athletes has drawn more attention and emerged very interesting variable of sports psychology, scientifically understanding emotional intelligence might help to lead a productive life. Golman, 1995 has claimed it to be very important in achieving success in life that to more in a organized group. People having higher level of emotional intelligence are better placed to mange their affaire with wisdom.
According to Mathews et.al,2004, "emotional intelligence has generated wide spread interest owing to the increasing personal importance attributed to the emotional management for people in modern society" Golman,1995 and Sarani,1999 claimed that EI is positively related to academic achievements, occupational success and satisfaction, emotional health and adjustment.

Mayer, John D (2001) Examines the relation between concepts of emotional giftedness and emotional intelligence and attempts to related a person's level of emotion intelligence to the actual ways they cope with challenging social situation, Emotional intelligence to the actual ways they cope with challenging social situations. Emotional intelligence and social behavior were explained in a pilot study with adolescents, emotional intelligence was measured with the Multifactor emotional Intelligence scale, an ability-based measure of emotion perception, facilitations, understanding and management. General intelligence was measured with the Peabody picture vocabulary scale, Each of the 11 adolescents also answered questions about how he or she had handled a difficult social encounter. Those with higher emotional intelligence were better able to identify their own and others emotions in situations. Use that information to guide their actions. And resist peer pressure than others.

Boyatzis Rechard, Goleman, Daniel kenneth briefly described a model of emotional intelligence based on the competencies that enable people to demonstrate intelligent use of their emotions in managing themselves and working effectively with others. The history and development as well as preliminary statistical results, of a new test based on this model are reported. The test is the emotional competence Inventory. The implications for a theory of performance in work settings and an integrated personality theory are mentioned in emphasizing

the importance of clusters of competencies in predicting performance and making links to all levels of the human psyche.

Mc Crae-Rober- R (2000)

Attempts to describe the personality profile of the hypothetical emotionally intelligent person from the perspective of the five factor model of personality and drown some implications about the emotional intelligence construct from established knowledge about personality traits. The author discusses mixed models of emotional intelligence and examines the ability model of emotional intelligence, the author then analyses the status of the emotional intelligence in relation to openness to experience.

A Sport psychologist, Lawther (1972) discovered that most studies of male and female athletes reports them to rank high in such traits as self-confidence, extroversion, leadership dominance, emotional maturity, social poise, having high level of aspiration and consideration for others. Whereas, female athletic seem to differ from male athletes only in concern for their self-image (in this case, a desirable famine image); and in theire sensitivity to male social attitudes towards female athletic participation. Female athletes are more concerned with appearance and aesthetic aspects in sports

In the review of literature it has been presented a resume of all the studies conducted in the psychology of sport in general, and its impact on psychological factors in particular. It is apparent that although a number of studies are available both in the filed of socio-cultural status and socio-psychological correlation but there is no integrated picture of participation of sports activities and its impact on the personality dimension of sportsmen. At the same time it also became clear that what is needed is a comprehensive picture of the relationship between physical and sports activities and its impact on the personality dimensions like emotional intelligence of the sportsmen and non sportswomen.

Many research studies in the psychology of sport men and women studied separately not shown much interest and has been not focused on the participation of sports and physical activities, which plays a major role in determining the personality factors of the sportsmen, which could play a important role in their performance. In the face of more and more men and women belonging to different strata of sports profession are entering the sports arena every year and sharing the laurels with their counterparts it was felt necessary to study the a emotional intelligence of sportsmen who are participating and non participating in sports.

## METHODOLOGY

### Research Problem:

The present investigation pertaining to **"A Comparative study of emotional intelligence between sportsperson and non sportsperson"** is in the framework of ex-post-facto research.

### HYPOTHESIS

1) There would be significant difference between sportsperson and non sports person in their emotional intelligence.

### Variables

a) Independent Variable: - Sportsman & Non Sportsman.

b) Dependent Variable: - Emotional intelligence.

### Objectives

1) To know the significance difference in their emotional intelligence of sportsperson and non sportsperson.

2) To assess the significant influence of sports participation on the development of emotional intelligence.

**Significance of the study:**

1. The study of emotional intelligence behavior of sportsperson and non sportsperson helps the trainer and coaches to understand the emotional abilities of sportsperson which demands to control and manipulate in game situation
2. The know the extent of help in providing guideline to physical education teachers and coaches for selecting and preparing players for their psychological make up.

**Limitations**

1. Psychological variable that is emotional intelligence is only chosen for research study.

**Delimitations**

Data collection is restricted to the sportsman and non sportsman studying under a women's University jurisdiction. The particulars of samples, tools, collection of data and statistical techniques are given as under;

**Sample size:**

| variables | Sportsperson | Non sportsperson | Total |
|---|---|---|---|
| Male | 25 | 25 | 50 |
| Female | 25 | 25 | 50 |
| | 50 | 50 | 100 |

To collect the data pertaining with research problem Thimgujum scale was administered on the sportsman & non sportsman of Women's University Students. Samples age ranging from 21-25 Years. Scoring pattern as indicated in below paragraph.

**Tools:**

The Emotional Intelligence Scale developed by Thimgujam and Ram (1999) has been applied in the present study. While scoring the emotional intelligence scale, the respondents feeling strongly agree would be awarded 1, for agreeing 2, for undeciding 3, for disagree 4 and finally for strongly disagreeing 5 would be awarded to the respondents.

**Statistical Technique :**

1.To assess the influence of physical activity on emotional intelligence "t" test is applied.

**RESULT AND DISCUSSION:**

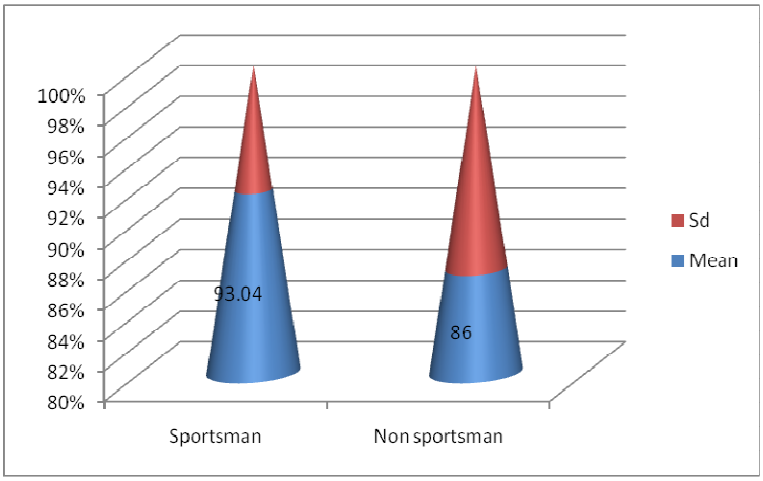
The study was carried out to see the influence of physical activities on the development of emotional intelligence of the sportsperson and also attempt see the influence of demographical variable in moulding the emotional condition of the sportsperson.. Because various research studies reveals that participation of sports bring the tremendous changes and plays significant role in moulding the personality and emotional health of the sportsperson. Hence researcher made here an attempt to explore the relation and significant influence on physical activities and sports on emotional intelligence of the sportsperson. And non sportsperson

**Table.** Showing the mean and sd and't' value of sportsman and non sportsman

| Emotional intelligence | Sportsman | Non sportsman |
|---|---|---|
| Mean | 93.0400 | 86.000 |
| Sd | 8.2385 | 13.127 |
| t.value | 2.257 | |

*significant at 0.5 level.

**The graph showing the Emotional intelligence of sportsperson and non sportsperson**




The table 1 showing the Mean, Sd and't' value of the sportsman and non sportsman, The formulated hypothesis that there would be significant difference between sportsman and non sportsman in their emotional intellgence.The calculated data was tested, and Mean score of the sportsman is 93.0400 and SD is 8.23 and 86.000 and 13.12 respectively and calculated 't' value is 2.25, it reveals that sportsperson mean score is higher than non sportsperson, and its also reveals that there is significant difference in emotional intelligence of sportsman and non sportsman. Because, The calculated' value is greater than table value and it's significant is at 0.5 level. Hence formulated hypothesis that there would not be any significant difference is rejected and there is difference is accepted. It may generalized that participation of sportsman provides ample opportunity to participate and express their emotion freely and cultivate emotional skills and to get mastery to produce, regulate, manipulate, and control emotion and stress among the students in respect of life and game situation frequently occur in the competition. Whereas non sportsman get less opportunity to participate and control and manipulation of stress.

## CONCLUSION

The study reveals that participation in sports activities influence on developing and cultivating qualities and ability of controlling the sportsperson.

## Reference:

1. Article published in international journal of sports sciences and physical education, Volume&issue-1.1st july 2010 ISSN 0972-2752
2.Article Published in Indian Journal of Yoga Exercise and Sports Science and Physical Education entitled "Socio–Psychological Correlates with will to win of Sports Persons" on Volume –III No-1 May-2009.ISSN- 0975-265X
3. Article Published in Entitled Socio-Physiological Correlations with AggressivBehavior of Sports Person in Published Book entitled Developmental Perspective; issues Challenges and Intervention edited by SA Kalolikar and G.B. Sonar ISBN:
4. Unpublished thesis of Dr Rajkumar.P.Malipatil,Submitted to Dept of Psycholohy, Gulbaraga University.
5. Mayer, J. D., Salovey, P., & Caruso, D. R. (2000). Models of emotional intelligence. In R. J. Sternberg (Ed.), Handbook of intelligence (pp. 396–420). Cambridge, England: Cambridge University Press..
6. Salovey, P & Mayer J.D. (1990) : Emotional Intelligence , Imagination, Cognition and Personality, 9, 185-211.
7. Thingujam, N.K. and Ram, U (1999) : Indian Norms of Emotional Intelligence Scale and some correlates, Bangalore, Paper presented at 5th International and 36th IAAP Applied Psychology Conference, Dec. 27-29.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp62-65**
**Journal Impact factor 0.5190**

# "The Influence of Sex Variables on Aggressive behavior of Sportsperson"

*** Suresha.Patil.. * Rajashekhar D Benakanahalli **Rajkumar.P.Malipatil**
***Research Scholar, Dept of Physical Education Singahania University Pacheribari ,Jhunjhunu Rajasthan**
*** Research Scholar Govt First Grade Collage Basavan Bagewadi.**
****Asst,Professor, Dept of Studies in Physical Education and Sports science, Karnataka State Women' University, Bijapur.**

**Abstract**
The paper is an empirical attempt to explore the significant influence on the aggressive behavior of the sportsperson. A sample of 400 sportsperson in the age group of 19 to 25 years studied by using semi-structured interview schedule. It is explored that the sex variables of the sports person has something to do with the aggressive behavior of sportsperson.

**Introduction:**

Aggression is a negative personality trait that has been associated with sport participation. Aggression is operationally defined as an intentional physically or psychologically harmful behavior that is directed at another living organism (Thirer, 1993). The frequency of aggression in sports on all levels has led to a great deal of academic research. Even the International Society of Sport Psychology recently recognized that sport aggression has become a social problem both on and off the playing field and has recommended ways to curtail this behavior (Tenenbaum, Stewart, Singer, & Duda, 1997). The particulars of this position have recently been challenged (Kerr, 1999), reaffirmed (Tenenbaum, Sacks, Miller, Golden, & Doolin, 2000), and clarified (Kerr, 2002).

Aggression has been studied on many levels including behavior within the context of sport and within daily life. A popular theory explaining aggression is the Revised Frustration-Aggression Theory (Berkowitz, 1965). This theory consists of aspects from Bandura's (1973) Social Learning Theory and Smith's (1972) theory on frustration and aggression. Berkowitz proposed that either frustration or another stimulus (e.g., threat) increases a person's arousal and anger levels, which increases one's readiness to aggress. However, aggression will only occur if the person has learned the appropriateness of such behavior in that specific situation. In other words, aggression not only depends on the strength of the association between the situation and aggressive behavior, but also the degree of readiness to aggress and the presence of aggressive cues (Berkowitz). This easily generalizes to the sport socialization process. During an athletic contest, the potential for a frustrating situation is unlimited. Combine that with aggressive behavior that is rewarded by teammates, coaches, and parents, or vicariously learned from role models on television or during live contests, and the potential for aggression in sport rises exponentially.

Two types of aggression have been defined in sport research, hostile and instrumental. Hostile or reactive aggression is behavior performed with the sole intention of inflicting harm on a person (Silva, 1983). Instrumental aggression in sport is behavior that intentionally causes injury or harm to an opponent in pursuit of another non-aggressive goal such as scoring or winning (Bredemeier, 1975). Assertiveness is distinct from aggressiveness in that it is the nonhostile, noncoercive tendency to behave with intense and energetic behavior to accomplish one's goal (Bredemeier, 1994; Silva, 1978). In the sport realm, these types of behavior are often within the rules of competition. It is hard to distinguish the relationship between aggression and assertion because they have often been conceptually confused in the literature (Silva, 1978), and can usually only be differentiated by a person's intention, which remains dependent on self-report. However, researchers have utilized various measurements to assess athlete aggression (Allawy, 1981; Bredemeier, 1994; Reid & Hay, 1979; Ryan, Williams, & Wimer, 1990; Silva, 1983; Wall & Gruber, 1986).

Recent trends in research link patterns of sport aggression to goal orientations (Duda et al., 1991; Dunn & Dunn, 1999), moral reasoning (Bredemeier & Shields, 1986; Bredemeier, 1994; Rosenberg, 2003), and gender (Silva, 1983). Aggression has also been examined in reference to different sport types (e.g., contact vs. non-contact and individual vs. team; Allawy, 1981; Bredemeier & Shields, 1986; Colley, Roberts, & Chipps, 1985; Mace & Baines, 1989; Silva, 1983). It has been shown that sports with contact have positive associations with the amount of aggressiveness of their participants (Allawy; Bredemeier, 1994; Gardner & Janelle 2002; Reid & Hay, 1979; Silva, 1983; Tucker & Parks, 2001). Silva has differentiated contact sports into three distinct levels: collision (contact is necessary and integral to play), contact (contact is legal and occurs incidentally), and non-contact (contact between opponents is not allowed). Silva studied the relationships between the contact level of sport and legitimacy ratings of rule violations (i.e., aggressive behavior) in sport across women and men. Differences were found between amount of contact and years of experience in legitimacy ratings for men and women. In a similar study, Tucker and Parks found that athletes in collision sports scored higher on legitimacy ratings than those in contact and non contact sports. Further, a significant interaction effect was found in this study with greater gender differences in non contact sports than in collision and contact sports with women scoring lower than men. More recently, Gardner and Janelle did not find differences in legitimacy ratings across low and high contact, college sport athletes, but did find males to perceive aggressive and assertive behavior as more legitimate than females. In addition, behavior in sport situations was overall perceived as more legitimate than in life situations.

A limitation in the research on aggression is that studies in collision sports may be gender biased. Most collision sports have traditionally only been available for men, excluding women from participation and therefore from research. Further, many traditional collision sports for men have modified rules to disallow certain types of contact in the women's version (e.g. ice hockey, lacrosse). This has created a gap in the literature regarding aggression and contact sport type utilizing male and female athletes from the same sports. The relationship between aggression and female collision sport athletes may be different from the relationship for male athletes. The Revised Frustration-Aggression Theory would predict that through participation in sport, females would learn to be as aggressive as their male counterparts because of the opportunity for observational learning and the presence of situational cues and reinforcements. More specifically, if women played the same collision sports as men they would show similar aggression levels because of the similar sport socialization processes. In fact, given similar situations, women have shown to be just as aggressive as men (White & Kowalski, 1994). However, women and men have been shown to differ on their acceptance of sport aggression in relation to sport type participation (Bredemeier, 1994; Silva, 1983; Gardner & Janelle, 2002).

The reason for aggression differences remains vague. It is unclear whether the differences found across gender and sport types are due to different sport socialization processes or from an existing disparity in those who gravitate towards certain sports (Morgan, 1980). Exposure to contact in sports has been found to be previously related to men's traditional ideals of masculinity and negative attitudes towards women (Maier & Lavrakas, 1981), however these trends may be changing (Smith & Stewart, 2003). On the other hand, women participating in perceived low-feminine sports (i.e., collision and contact) held more liberal gender-role attitudes than high-feminine sport participants (Salisbury & Passer, 1982). Perhaps the gravitation of a woman towards a non-traditionally feminine sport reflects an upbringing that encouraged individuality and non-conformity. Less stereotypical-feminine athletes may be drawn to collision sports because of the innate non-feminine, traditionally masculine qualities of contact activities and the emancipation that participation in such sport brings to them. In fact, there are supporters of the notion that participation in contact sport may be beneficial for women. It is believed that a woman uses her body in contact as a means to express and learn about herself (Rail, 1992) and can actually help empower girls and women by teaching them about their physical capabilities (Theberge, 2003). This could mean that women may experience a different collision and contact sport socialization process than men. It is necessary to examine sport aggression in women across sport groups to conclude if the differences already found between male athletes apply to female athletes. Once the relationship has been examined across sport types and between genders on sport aggression, it is also important to examine how the findings relate to personality traits found in daily life. Research in this area is non-conclusive and some researchers have

suggested that behavior exhibited in sporting activities may not reflect everyday life personality behavior and traits (Bredemeier, 1994; Bredemeier et al., 1986; Smith & Stewart; 2003; Thirer, 1993

**Problems:**

The influence of sex variable on Aggressive behavior of the sportsmen

**Hypothesis:**

There is a sex difference in Aggressive behavior of sportsmen.

**Objectives:**

To verify the significant sex different in Aggressive behavior of sportsmen.

**Methodology:**

The present paper made an attempt "to know the influence of sex variable on Aggressive behavior of sportsmen" is in framework of empirical research. The particulars of the samples, tools, collections of the data and statistical techniques are given as under.

Sample

The toll samples consists of 200 sportsmen participating in All India Inter-University Athletic met by representing from different university of nation and samples selection made randomly and the age level ranging from 10 – 25.

Sample Design:

Table no1 Showing distribution of sample

| Variables | Sex |
|---|---|
| Male | 200 |
| Female | 200 |
| Total | 400 |

**Tools:**

Aggressive behavior inventory developed by A. Kumar has been applied in the present study, Sports Aggression inventory consists of 25 items in which 13 items are keyed "Yes" and rest of 12 items are keyed "No". For each item score 1 is given to the following responses. Maximum score on the inventory may be 25 on this test and minimum score being 0.

Statistical Analysis:

The 't' test was used to assess the significant difference of aggressive behavior of male and female sportsmen.

Analysis of data and result:

The hypothesis that there is a significant difference in aggressive behavior between male and female sportsmen is postulated on the rationale that the women were having weak genetical make up, and are having lack of social support, socio-cultural obstacles, orthodox perception and negative attitude towards females, male dominated society and created culture might put her into the secondary and subsidiary role. Under these deprived conditions, she does not show aggression in sport competitions and in her performance.

Table-

Table Showing the Mean, SD and 't'' Values of Aggressive Behavior of the Male and Female Sportsmen

| Variables | Male | Female |
|---|---|---|
| Mean | 11.73 | 11.53 |
| SD | 2.72 | 3.14 |
| t-value | .554 | |

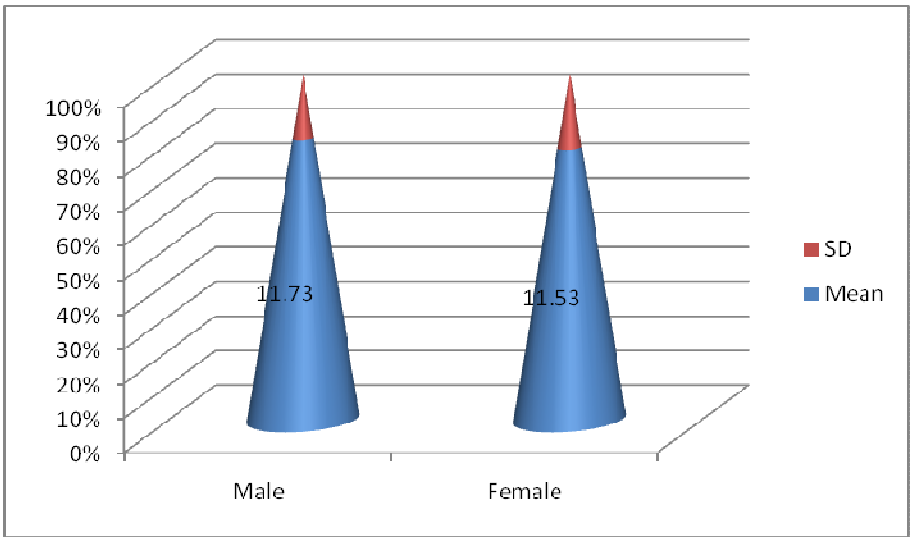



Table-reveals that mean, SD and 't' scores of aggressive behavior of male and female sportsmen. The mean scores of male and female sportsmen are 11.73 and 11.53 respectively. The obtained 't' value for these two groups is .554, which is not significant. Therefore, the hypothesis that there is a significant difference in the aggressive behavior of the male and female sportsmen is not accepted. This is because, irrespective of male and female in the sports field every sportsman should have aggressive behavior to win the competition. Every competitor develops the sport spirit. The female also have equal exposure to the sport competitions, good training, high will to win, higher level of self confidence and these factors could have influenced them to adopt the higher level of aggression to excel higher level of performance, Moreover, the fear and frustrations associated with defeat, situational stimulus factors, and nature of the competition might have contributed in stimulating the high aggressive behavior in female sportsmen on par with the male sportsmen. In conclusion, facilities extended to female are made use properly. Hence, there is no difference in their aggressive and the above-formulated hypothesis is rejected.

**Conclusion:**

The current study reveals that aggressive behavior of the sportsperson is not merely results of Physical structure, genetically make up and influence of socio-economic and culture condition of a sportsperson. But is also the productive result of the sports competition and outcome of frustration

**Reference**

Bandura , A (1973) : Aggression : A social learning analysis. Englewood Cliffs, Prentice-Hall, New Jersey.
Bandura ,A. Ross, D and Ross, S. (1961) : Transmission of aggression through imitation of aggressive models. Journal of Abnormal and Social Psychology, 63: 575-582.
Bandura A. and Walters, R.H. (1963): Social learning and personality development,. Holt, Rinehart and Winston, New York.
Baron, R. (1997): Emotional Intelligence Quotient Inventory: A measure of emotional intelligence, Multi-Health Inc. Toranto.
Baron, R.A. (1977): Human Aggression, Plenum Publishers, New York.
Bateson, G (1941): The frustration-aggression hypothesis and culture, Psychological Review, 48: 350-355.
Beisser, A.R. (1967) : The Madness in Sports , Appleton-Century-Crofts, New York.
Bennett, J. C. (1991). The irrationality of the catharsis theory of aggression as justification for educators' support of interscholastic football. Perceptual and Motor Skills, 72, 415-418.
Berkowitz, L (1962) : Aggression, a social psychological analysis, Mc Graw Hill, New York.
Borden R.J, and Taylor, S.P. (1973): The social instigation and control of physical aggression, Journal of Applied Social Psychology, Vol. 3, 354-361.
Bushman, B. J. (2002). Does venting anger feed or extinguish the flame? Catharsis, rumination, distraction, anger, and aggressive responding. Personality and Social Psychology Bulletin, 28, 724-731.
Bushman, B. J., Baumeister, R. F., & Stack, A. D. (1999). Catharsis, aggression, and persuasive influence: Self-fulfilling or self-defeating prophecies? Journal of Personality and Social Psychology, 76, 367-376.
Buss, A. H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. Journal of Consulting Psychology, 21 (4), 343-349

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp66-69**
**Journal Impact factor 0.5190**

# The influence of nature of game on anxiety behavior of sportsperson"

***Vishwanath.Nadakatti. * Sangeet.S.Patil **G.G.Kori**
***Research Scholar, Dept of Physical Education Singahania University Pacheribari ,Jhunjhunu Rajasthan.**
**** Principal. Basaveshawar college of Physical Education,Bagalkota**

**Abstract**
The purpose of study was to investigate the influence of nature of game on anxiety behavior of sportsmen. For this study 100 players were selected from All India inter University Cricket and kho-kho championship by simple random sampling technique. The age of the subject ranges from 18 to 25 years.
Sports Psychological variable that is 'Anxiety behavior', which was measured through standardized questionnaire developed by Prof. Sinha. This questionnaire were Administered on Inter-University representing players, to collect the necessary data. The data was analyzed using' test, the study revealed that, the nature of game have significant influence on kho-kho players in eliciting anxiety behavior with comparing to the cricket players.
Keywords: Anxiety, Different sportsperson,

## INTRODUCTION:

A sport is a Psycho-Social activity. It has Psychological activities, Physical, Physiological and technical aspects. Man's interest in Sports is found in all societies of the world. Most of the nations have a common interest in sports competition, especially in Olympic Games, where people from all nations focus their attention on the drama of competition. But the quality of participation of the athletes and sportsman is determined by Psychological factor. In this modern year of competition, the Psychological preparation of a team is more much important than the teaching different skills of a game on the scientific lines. The teams are prepared not only to play the games, but to win the game. And for winning the game is not only the proficiency in the skills which bring victory, but more important is the spirit of the players with which they play and perform their best in the competition.

ANXIETY: Anxiety is a physiological response to real or imagined threat. It is a complex emotional state characterized by a general fear or foreboding usually accompanied by tension. It is related to apprehension and fear is frequently associated with failure, either real or anticipated. It after has to do with inter personal relations and social situations. According to Frost (1971), anxiety is "an uneasiness and feeling of foreboding after found when a person is about to embark on a hazardous Venture, it is after accompanied by a strong desire to excel". Hence anxiety state arises from facility adaptations to the stress and strains of life and is caused by over actions in an attempt to meet these difficulties.

Research dealing with anxiety and sports performance has produced conflicting results. It has to be seen as to how A-trait and A-state influence sports performance. Almost insignificant applied research in sport contexts has been conducted on this topic. Read (1960) found that both high and low levels of anxiety tended to disrupt the learning process, whereas, moderate levels of anxiety created an ideal atmosphere for learning and performance. But his suggestion that top class athletes are lower in A-trait was not supported.

Huston (1966) studied the relationship between level of anxiety and the learning of skills in beginning horseback riding. Reviewing all the studies pertaining to the anxiety and its effects on performance on various sports. The researcher made an attempt to know the influence of nature of game on anxiety behavior of the sportsman.

**REASERCH PROBLEM:**

To know the level of anxiety among the Cricket and Cricket players of Inter University of Karnataka states women's University.

Hypothesis of the Study:

The kho-kho players have high anxiety levels which negatively impacts on their performance.

The cricket players have low anxiety levels which positively impacts on their performance.

There is a significant difference between the anxiety level of cricket and kho-kho players of K S Women's University Bijapur.

VARIABLES:

Level of Anxiety: dependent

Two games are independent

**OBJECTIVES OF THE PRESENT STUDY**

Keeping this in view, the following objectives of the study were formulated.

To examine the level of anxiety between the Cricket and Kho-Kho players of Inter-University.

To understand the differences in the anxiety between Cricket and Kho-Kho players of Inter-University.

Understand the nature of relationship between the anxiety and the performance of Cricket and Kho-Kho players of Inter-University.

Variables:

Methodology:

The present investigation pertaining to "A Comparative Study of Anxiety Behavior between Cricket and Kho-Kho Players" is in the framework of empirical research. The particulars of samples, tools, collection of data and statistical techniques are given as under;

Sample:

Keeping the objectives in view, appropriate research design is adopted. The sample for the study is drawn from the Kho-Kho and Cricket Players of K S W University. 50 kho-kho players and 50 cricket players were administered anxiety scale to assess the differences in their anxiety behavior. The sample design is as under.

Table-1
Distribution of Sample

| Sl. No | Cricket Players | Kho-Kho Players | Total |
|---|---|---|---|
| 1 | 50 | 50 | 100 |

**Tools:**

1. Personal Data Schedule:

This is framed to collect information regarding the personal and socio demographic status of the sample.

Anxiety scale developed by Sinha D (1975) which consists of 100 items. The response categories are true or false. The responses are scored with the help of manual.

**Collection of Data:**

The data were collected from the cricket and kho-kho players of K S W University who were administered the anxiety scale during the sports competitions.

**Statistical Analysis:**

The t-test was used to assess the significant differences of anxiety between cricket and kho-kho players of K S W University.

**DISCUSSIONS:**

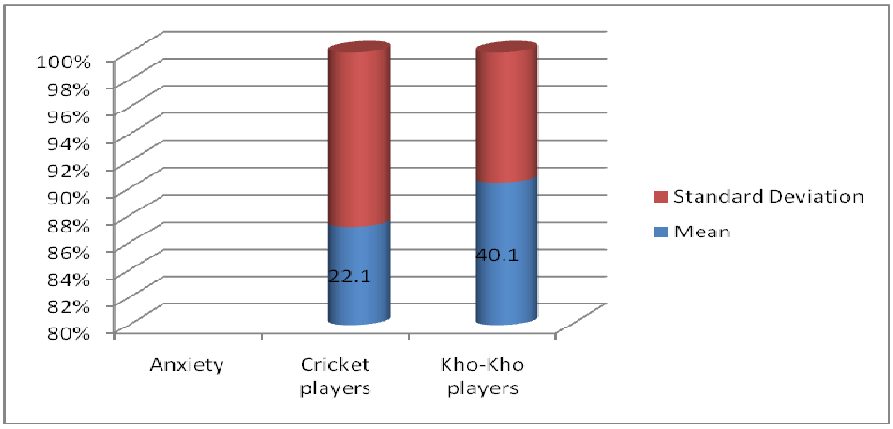
The major objective of the present study is to assess the differences in the anxiety of cricket and kho-kho players of K S W University. The results on the anxiety level of the two players have been explained and analyzed as under.

Mean, Standard Deviation and t-value of anxiety between cricket and kho-kho players of karanataka state women's University Bijapur

| Sl. No | Variables Anxiety | Mean | Standard Deviation | t-value |
|---|---|---|---|---|
| | Cricket players | 22.10 | 3.24 | 21.63 |
| | Kho-Kho players | 40.10 | 4.24 | |

The above table explains the mean, standard deviation and t-value of anxiety behavior between cricket and kho-kho players of women's University. The data presented in the above table demonstrates that the cricket players have the low mean score of 22.10 and the kho-kho players have the high mean score of 40.10. The low mean score of the cricket players suggest that that they have low anxiety level or behavior when compared to the kho- kho players who have high mean score of 40.10. in other words the low mean score represents the low anxiety and the high mean score suggests the high anxiety behavior among the two teams. Moreover, the obtained t-value score is 21.63 which is significant at 0.01 level indicates the significant difference of anxiety between the two teams. Hence, in conclusion one can say that there is a significant difference of anxiety between the both teams and cricket players have low anxiety than the kho-kho players in the different sports events and competitions.

Hence, the formulated hypothesis that is there would be a significant difference between Cricket and Kho-Kho players is conformed.




**CONCLUSION:**

The psychological factors which although have been proved to contribute to performance in events in the higher competitive sports. So now the sports trainers and coaches have started giving more importance to the impact of psychological factors on building the mental make up of the players and its resultant influences on their performance in the national and international competitions. Therefore, in the present study an attempt has been made to probe the differences in the anxiety level of kho-kho and cricket players of K S W University.

**FINDINGS OF RESEARCH:**

There is a significant difference of anxiety between the cricket and kho-kho players of K S W University.

Cricket players of K S W University have low anxiety.

Kho-Kho players of K S W University have high anxiety when compared to the Cricket players of K S W University.

The low anxiety of the cricket players helps them to achieve high in the different sports competitions.
The high anxiety of the kho-kho players would help them negatively in the different sports competitions.

**Reference:**


Raviv, S. and Rotstein, P. (1982) Trait Anxiety, State Anxiety and Self – control in Marathon Runners (Wingate Institute). First Israeli National Conference of Psychology and Sciology of Sport and Physical Education, Tel Aviv, April, 11-13.
Reed (1960) found that both high and low levels of anxiety created an ideal atmosphere 'I' for learning and performance.
Scanlan, T.K. (1975). The Effect of Competition Trait Anxiety and Success – Failure on the Perception of Threat in a Competition Situtation. Unpublished Doctoral Dissertation, Champaign, University of Illions at Urban.
Finn, J.A. and Sprague, L.K. (1981), Comparison of Competitive Trait Anxiety Levels of 9-12 year old participants in little league and neighbourhood Baseball, International Journal of Sport Psychology, 12:2:154.
Ford, Robert, (1968), Anxiety in Non-Competitive and Pre-competitive Situations Involving Inter – collegiate Football players. Doctorate thesis, Springefield College, Springfield, Massuchusetts.
Gruber, J and Perkins, S. (1978): Personality traits women physical education majors and non-majors at various levels of athletic competition. *International Journal of Sport Psychology,* 9: 40-52.
Uppal, A.K., and Gill R. (1986): Personality profile of national and collegiate level male and female badminton players. In Mall, N.N. et al (Ed.) *Psychological Analysis of Sports Performance,* LNCPE, Gwalior.
Vaught, G.M. and Newman, S.E. (1966) The Effects of Anxiety on Motor Steadiness in Competitive and Non-Competitive Psycholonomic Science, VI: 519-520.
Verma, K.K. (1987) A Competitive Study of Anxiety Difference within Different Sports Groups of Women and those of Non-Sportswomen. In L.S. Sidhu and D.N. Mathur (ed.,) Sports Science: Health, Fitness and Performance, Patialsa: IASSPE, pp. 243-248.
Weinberg, R. and Genuchi, M. (1980) Relationship between SCAT, State Anxiety and Golf Performance. A Field Study, Journal of Sport Psychology, 2:2.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp70-72**
**Journal Impact factor 0.5190**

# 'Evaluation Practices For Assessing Teaching Skills Among Secondary School Teachers – A Study'

**Dr. D. Bala Ramulu,**
**Chairman, Board Of Studies in Special Education,**
**Institute of Advanced Study in Education & Chief, University**
**Employment, Information, and Guidance Bureau, Osmania University**

Teacher evaluation is, first, about documenting the quality of teacher performance; then, its focus shifts to helping teachers improve their performance as well as holding them accountability for their work. "In recent years, as the field of education has moved toward a stronger focus on accountability and on careful analysis of variables affecting educational outcomes, the teacher has proven time and again to be the most influential school-related force in student achievement.

**Significance of the Study:**

The importance of appraisal in any organization cannot be overemphasized. The literature on staff appraisal, covering a wide spectrum of fields such as commerce and industry as well as the private and the public sectors including schools, identifies three main purposes of appraisal: to serve as a basis for modifying behavior to realize more effective working habits; to provide adequate feedback to each employee on his/her performance; and to provide managers with data with which to evaluate future assignments and determine compensation.

**OBJECTIVES OF THE STUDY:**

The present study has been taken up with the following objectives:

1). The overall objective of this study was to probe into the evaluation practices in assessing teaching skills among secondary school teachers in Medak District.

2). To investigate the perceptions of students on the evaluation practices in assessing teaching skills among secondary school teachers in Medak District.

3) To evaluate the specific teaching skills like classroom learning environment, lesson planning and preparation by the teachers, instruction in the classroom and on professional responsibilities of secondary school teachers in Medak District.

**HYPOTHESES OF THE STUDY:**

The study is based on the following hypotheses:

There is no significant difference in perceptions of students on the evaluation practices in assessing teaching skills among secondary school teachers in Medak District.

There is no significant difference in perceptions of students on the evaluation practices in assessing teaching skills with regard to their class.

There is no significant difference in perceptions of students on the evaluation practices in assessing teaching skills with regard to their gender.

There is no significant difference in perceptions of students on the evaluation practices in assessing teaching skills with regard to Class room learning environment skill.

There is no significant difference in perceptions of students on the evaluation practices in assessing teaching skills with regard to lesson planning and preparation.

There is no significant difference in perceptions of students on the evaluation practices in assessing teaching skills with regard to instruction in the classroom.

There is no significant difference in perceptions of students on the evaluation practices in assessing teaching skills with regard to professional responsibilities.

**RESEARCH METHODOLOGY**:

The universe of the present study consists of Medak District in the State of Andhra Pradesh. The sample constitutes ONE HUNDRED students from Secondary Schools in Medak District.
A questionnaire was developed for the students, which consist of four parts- Part-A and B.

**MAJOR FINDINGS OF THE STUDY**

The major findings of the study include:

1. An overwhelming majority (97%) agreed to the statement that teacher gives students opportunities to make oral and written presentations in class.2. A good majority (67%) opined 'always' that teachers show students how to break information into smaller pieces for easy understanding**.**3. Allow students to discuss their academic problems and indicate alternatives – was the statement where more than half of the sample (52%) went for 'sometimes'.4. A great majority (88%) of the respondents 'strongly agreed' for providing students with study skills instruction.5. Teachers using computer software to provide practice opportunities to students was the statement strongly agreed by more than half of the sample (52%).6. A great majority (63%) confessed they were never sent to library.

A. **Classroom Learning Environment :**

7. A great majority of the sample (60.9%) were satisfied with the concept of management of classroom.8. Respect and rapport with students, the table illustrates that half of the sample preferred (50.9%) satisfactory.9. More than half of the sample (51.8%) preferred outstanding for Curiosity in learning.10. Monitoring student behaviour was satisfactory according to more than half of the sample (55.5%).11. Organization of physical space was the response offered by a great majority (61.8%) as satisfactory.12. Evaluation of Student progress was the statement where almost half of the sample (51.8%) spelt it as outstanding.

B. **Lesson Planning and Preparation :**

13. An equal number (42.7%) felt as satisfactory for demonstrating knowledge of students.14. In selecting instructional goals, a good majority of the sample (42.7%) (30.9%) felt satisfactory.15. A good majority (56.4%) of the sample took outstanding for the concept of possessing good knowledge of content by their teachers.16. As per the statement- knowledge of teaching methods (pedagogy) by their teachers, the table exhibits that a majority of (53.6%) the sample admitted outstanding.17. Regarding the statement teachers possessing the knowledge of the resources, a great majority (68.2%) opted satisfactory.18. As per designing comprehensive instruction for students, the table explicitly shows that less than half of the sample (42.7%) opted satisfactory.19. Exactly half of the sample (50.0%) opined satisfactory, for assessing student learning.20. Nearly a good majority (43.6%) claimed satisfactory for their teachers prepare for instruction.

C. **Instruction – Engagement in the Classroom:**

21. A majority (52.7%) of the sample admitted that their teachers are outstanding in giving clear cut instructions. 22. Exactly half of the sample (50%) opted outstanding for teachers maintaining students' interest. 23. A good majority (59.1%) of the sample confessed as satisfactory for the statement that teachers provide feedback to students. 24. Half of the sample (50%) satisfied that teachers show flexibility and understanding. 25. Regarding the statement that teachers demonstrate knowledge of content, more than half of the sample (54.5%) was satisfied. 26. For a statement whether they use innovative teaching strategies in their teaching a good number of respondents (47.3%) stated outstanding. 27. A great majority (60%) of the respondents confessed satisfactory for engaging students in learning activities. 28. More than half of the sample (53.6%) preferred Satisfactory in giving appropriate assignments by the teachers. 29. A great majority (64.5%) opined as outstanding that their teachers communicate effectively with students.

D. **Professional Responsibilities:**

30. Nearly half of the sample (47.3%) perceived that the teachers had a rapport with colleagues.
31. Advocacy for students was the statement satisfactorily supported by more than half of the

sample (51.8%). 32. Participation in decision-making was given a tag of satisfactory by a great majority (64.5%). 33. Teacher's awareness of recent policies and programmes. Half of the sample (50.9%) voted for satisfactory. 34. With regard to teacher's participation in Professional development activities in their school, a good majority of students (51.8%) opined as satisfactory. 35. In doing non-instructional activities, a great number (60%) the respondents perceived as outstanding. 36. As per the statement - Respects confidentiality of students and staff, almost half of the sample (49.1%) responded as outstanding. 37. A majority of the respondents (51.8%) believed that teacher carries out self-assessment of professional responsibilities in an outstanding way. 38. With regard to teachers monitoring students progress, half of the sample (50%) preferred 'satisfactory'. 39. A large majority (60.9%) voted for 'outstanding', for a query that teachers communicates effectively with parents.

**CONCLUSION:**

The findings of the present study are of practical as well as theoretical importance to the students, teachers, parents, authorities.

It is established from this little research that ***students are the best judges of their teachers***. A lot of people believe that student evaluation of teaching has had an impact on academic standards, namely a negative impact involving inflation of grades and weakening of academic requirements, but research evidence is not clear in support of this belief. Moreover, it has shown that students are happy to take up appraisal of their teachers in a positive way.

This study implies that **teachers** have an important role in evaluation practices, that would boost the confidence of the teachers A robust evaluation system honors the complexity of teaching by recognizing that teachers utilize different types of lessons for different purposes. It will advance teachers' skills toward a goal of mastery and measurably impact student achievement. More specifically, appraisal elements, when used strategically by a teacher in the classroom, should quantifiably improve student learning.

**BIBLIOGRAPHY**


Aaron M. Pallas (2010) Measuring what matters. *Phi Delta Kappan,* December 2010/January 2011 vol. 92 pp 4 68-71.

Andrade, H. & Valtcheva, A. (2009) Promoting learning and achievement through self-assessment. Theory into Practice, 48(1), 12-19.

Angelo, T. (1995) Reassessing (and Defining) Assessment, AAHE Bulletin, 48(3): 7.

Bassey E. Udoukpong, Cecilia P. Okon (2012) Perception of Formative Evaluation Practices and Students' Academic Performance in Junior Secondary Certificate Examination in Social Studies. *International Journal Business and social Science*,Vol.3 Issue: 15.

Biswas P and Ghosh S.K. (2007) "A Novel Approach to Define Performance Metrics for Students' and Teachers' Evaluation" *The Electronic Journal of e-Learning* Volume 5 Issue 2, pp 87 – 102.

Charlotte Danielson (2001) New Trends in Teacher Evaluation, *Educational Leadership,* Volume 58, Number 5.

Chase, C. I. (1999). *Contemporary assessment for educators.* New York: Addison Wesley Longman.

Cline T, Ertubey C (1997) The impact of gender on primary teachers' evaluations of children's difficulties in school., The British Journal of Educational Psychology [Vol. 67 ( Pt 4):447-456].

Elizabeth Kleinhenz ACER et al (2002) *Evaluating the work of teachers in Australian schools Vision and reality.* Paper for presentation at the AARE Conference Brisbane.

Glenn Daley and Lydia Kim (2010) '*A Teacher Evaluation System that Works*', National Institute for Excellence in Teaching; Santa Monica, CA 90401.

Guskey (2003) How classroom assessments improve learning. *Educational Leadership,* 60(5), 6-11.

Harry G. Murray (1984) The Impact of Formative and Summative Evaluation of Teaching in North American Universities. Assessment & Evaluation in Higher Education, Volume 9, Issue 2.

Jeffrey S. Isaacs (2003) A Study of Teacher Evaluation Methods Found in Select Virginia Secondary Public Schools Using the 4x4 model of Block Scheduling; Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership and Policy Studies.

Kathleen Brunetta (2009) *A Case Study of Teacher Evaluation Practices in a Waldorf School: Seeking the Value in Evaluation.* A Thesis Submitted for the Degree of Master of Arts, The University of British Columbia.

LindaDarling-Hammond, AudreyAmrein-Beardsley, Edward Hearteland and Jesse Rothstein (2012) *Evaluating teacher evaluation*. Phi Delta Kappan , vol. 93 no. 6 8-15.

Lixia Cheng (2008) *'Self-assessment for Teaching and Learning Classroom Presentation Skills'*. INTESOL OEPP Staff Dissertation and Research Abstracts.

Malik Ghulam Behlol, Mohammad Anwar(2011*)* Comparative Analyses of the Teaching Methods and Evaluation Practices in English Subject at Secondary School Certificate (SSC) and General Certificate of Education (GCE O-Level) in Pakistan. *International Education Studies*,Vol.4 No.1.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp73-76**
**Journal Impact factor 0.5190**

# Differences In Fitness Status Between Government And Private School Students Of West Bengal

**Mr. Surajit Majumder * Dr. Sandip Sankar Ghosh****
* **Research Scholar, Department of Physical Education, University of Kalyani, West Bengal, India, Cell phone: Emails. - majumdersurajit98@gmail.com**
** **Assistant Professor, Post Graduate Govt. Institute for Physical Education, BanipPin- 743233, North 24 PGS. West Bengal, India, Cell phone: Email. - sandipsankarmal@gmail.com**

**Abstract**
The purpose of conducting the present study was to investigate the differences in physical fitness between government and private school students. The sample for this study consisted of 200 girl's students from Government School and 200 girls' students from Private School of west Bengal in India. A total of 400 school girls were chosen to participate as subjects in the present study. The age group of the subjects was ranged from 12 – 14 years. In the present study *standing height*, *body weight* and *body mass index* (BMI) were used as anthropometric measures. Five components of physical fitness (four performance related and one health-related) were tested. These included 20-meter dash (as a measure of movement speed), standing long jump (as a measure of explosive power), sit and reach (as a measure of lower back/upper thigh flexibility), bent knee sit-ups completed in 60 seconds (as a measure of abdominal strength and endurance) and distance run (as a measure of cardio respiratory-endurance). Mean and standard deviation of each variable were calculated. The means of respective variables between two groups were compared by using t-test. Statistical significance was tested at 0.05 level of confidence. For statistical calculations Excel Spread Sheet of windows version 7 was used. The results of the study showed that the Weight and BMI of the Private girl's school students were significantly higher than the Government school students. It also found that the SLJ (standing long jump), SAR (sit and reach) and Sit-up of the Government school students were significantly higher than the Private school students. On the other hand Private school students taking more time to complete the 20m.-dash and 600m run than the Government school students. This may happen due to the difference of life style, socioeconomic status and scope of physical activity between two separate school settings.
Key words: Health-related physical fitness, Government, Private, BMI, Dash (20-meter run), SLJ (standing long jump), SAR (sit and reach), and Sit-up.

## INTRODUCTION

Physical Fitness is a level of health in which you have muscular endurance, muscular strength, flexibility, cardiovascular endurance, and lean body composition. Physical fitness is achieved by the regular movement of muscles through a variety of exercises. Maintaining physical fitness is a life-long process and should always be part of your lifestyle. People with disabilities can also reach a measure of physical fitness by doing exercises appropriate for their conditions. According to the Nixon, "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 satisfactory and emergency demands suddenly placed upon him." Three concepts comprise physical fitness: I) specific fitness- Which is based on the ability to perform specific aspects of recreation or occupations. II) General fitness- A state of health and wellbeing. III) Emergency preparation- The physical capability to avoid, adapt and overcome emergency situations. Physical fitness is commonly defined as the capacity to carry out the day's activities, pursue recreational activities, and have the physical capability to handle emergency situations. Physical fitness should be the result of the balance of activities that are provided in the physical

education programs at school and continued by the family and in other community activities outside of school. Therefore performance objectives can be practiced at home with a minimum of adult supervision. Practicing at home initiates the opportunity for parents and students to exercise and be physically active together, making fitness a family activity.

It is frequently assumed that physical activity is an integral part of growing up, but many studies show that children and adolescents are often physically inactive. Recent studies also show evidence of greater inactivity among girls in both vigorous and medial activities. Also, males have better physical fitness levels than females for both chronological and biological age groups.

Thus, the purpose of this study was to determine the levels of several physical fitness components among Government and Private school girl's students in West Bengal.

**METHODS & MATERIALS**

The sample for this study consisted of 200 girl's students from Government School and 200 girls' students from Private School of West Bengal. A total of 400 school girls were chosen to participate in the present study. They were in the age group of 12 –14years. The schools were selected from various geographical areas of West Bengal. All participants were healthy and participated regularly in physical education class in school. The data were collected from January until the end of June 2012. For the present study random group design was adopted.

**INSTRUMENTS AND PROCEDURE***:*

Methods for evaluating fitness may vary according to the structure of the study. The AAHPERD (AAHPERD, 1984) test battery designed for the assessment of physical fitness in children was used as guidance in determining our test battery with slight modifications in consolidation with the Eurofit test battery (Adam et al., 1988). Standing height, body weight and body mass index (BMI) were measured as anthropometric variables. Five components of physical fitness were tested (four performance related and one health-related). These included 20-meter dash (as a measure of movement speed), standing long jump (as a measure of explosive power), sit and reach (as a measure of lower back/upper thigh flexibility), bent knee sit-ups completed in 60 seconds (as a measure of abdominal strength and endurance) and distance run (as a measure of cardio respiratory-endurance).

**ANTHROPOMETRIC ASSESSMENT:**

Standing height was measured to the nearest 0.5 cm with the Martin-type anthropometer for the standing posture. Weight was measured to the nearest 0.1 kg using portable digital scales (Tanita BC 554, Body composition monitor). The measurements were made while the children were wearing light clothes and no shoes. BMI was calculated as weight in kilograms divided by the square of height in meters (BMI = kg/m2).

**PHYSICAL FITNESS:**

The *20-meter dash* was performed from the standing start position. The test measured the time elapsed to the nearest 0.1 second from the starting signal to crossing the finish line. Three trials were administrated alternating with the resting pause. The mean value was calculated and included in the analysis.

The *standing long jump* (SLJ), as a measurement of explosive power, was measured to the nearest cm as the distance from the standing start to the point of landing heels. Three trials were administered and the mean value was included in the analysis.

The *sit and reach* (SAR) measured the distance of the performed stretch to the nearest cm. Before the test, the shoes were removed and the subjects were instructed to slowly reach forward with their knees fully extended as far as possible with palms facing downward. This test represents flexibility in the lower back and upper thighs. Three trials were administrated and the mean value was taken in the analysis.

The maximum number of *sit-ups* achieved in 60 seconds was recorded. The subjects were instructed to keep their arms across the chest while curling up to a sitting position until their elbows touched their thighs. This test gave us insight into abdominal strength and endurance. One trial was given.

A *distance run* (600 meters) was measured as the time elapsed to the nearest second from the starting signal to crossing the finish line. This test presents an example of cardiorespiratory endurance. The time necessary to cover the proposed distance was recorded in minutes and seconds. One trial was administrated.

**DATA ANALYSIS:**

Mean and standard deviation were the descriptive statistics and the differences between the students Health related physical fitness profiles between Government and Private Schools were determined using t-test. The level of significant difference was set at $p<0.05$ level of confidence. For statistical calculation Excel Spread Sheet of windows version 7 was used.

**RESULTS**

In Table-1 the mean and standard deviation of all the variables (anthropometric and fitness) of both government and Private school students has been presented.

Table 1
Mean and Standard deviation of different variables of Govt. and Private Girls Students.

| Variable | Mean and SD (Govt.) | Mean and SD (Private) |
|---|---|---|
| Height (cm) | 148.92 ± 6.53 | 149.55 ± 5.84 |
| Body mass (kg) | 46.71 ± 7.78 | 48.12 ± 9.10 |
| BMI (kg/m2) | 18.73 ± 3.13 | 19.28± 3.51 |
| Dash (sec) | 4.10± 0.68 | 4.56 ± 0.75 |
| S L J (cm) | 158.37 ± 18.60 | 154.41 ± 19.62 |
| S A R (cm) | 45.70 ± 7.09 | 42.71 ± 8.23 |
| Sit-up (n/60sec) | 38.71 ± 7.44 | 35.41 ± 7.87 |
| 600 m (sec) | 203.38 ± 58.39 | 59.48 |

* Dash - 20-meter dash, SLJ - standing long jump, SAR - sit and reach, Sit-up -number of sit-ups completed in 60 seconds, 600 m - distance run

Table 2
t-ratio of the Anthropometric Variables between Govt. and Private Students.

| Statistics | Height(cm) | | Weight(kg) | | BMI | |
|---|---|---|---|---|---|---|
| | Govt. | Private | Govt. | Private | Govt. | Private |
| Mean | 148.92 | 149.55 | 46.71 | 48.12 | 18.73 | 19.28 |
| S.D. | 6.53 | 5.84 | 7.78 | 9.10 | 3.13 | 3.51 |
| t-ratio | 1.0170 | | *1.6655 | | *1.6539 | |

Table value of 't' for df (398) at 0.05 level of confidence = 1.645

In Table-2 the mean and standard deviation and t-ratio of the Anthropometric variables (*Height, Weight* and BMI- *Body mass index*) have been presented. From the table-2 it was found that statistically significant difference existed at 0.05 level of confidence between Government and Private girl's students in weight and BMI. But no significance difference observed in height between them.Table-2 also shows that the weight and BMI of the Private girl's school students were significantly higher than the Government girl's school students.

Table 3
t-ratio of fitness Variables between Govt. and Private Students.

| Statistics | Dash (sec) | | S L J (cm) | | S A R (cm) | | Sit-up (no. in 60 sec.) | | 600 m (sec) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Govt. | Private | Govt. | Private | Govt. | Private | Govt. | Private | Govt. | Private |
| Mean | 4.10 | 4.56 | 158.37 | 154.41 | 45.70 | 42.71 | 38.71 | 35.41 | 203.38 | 213.77 |
| S.D. | 0.68 | 0.75 | 18.60 | 19.62 | 7.09 | 8.23 | 7.44 | 7.87 | 58.39 | 59.48 |
| t-ratio | *6.4259 | | *2.0715 | | *3.8926 | | *4.3092 | | *1.7629 | |

Table value of 't' for df (398) at 0.05 level of confidence = 1.645

In Table-3 the mean, standard deviation and t-ratio of the different fitness variables (Dash - 20-meter dash, SLJ - standing long jump, SAR - sit and reach, Sit-up -number of sit-ups completed in 60 seconds, 600 m - distance run) have been presented. From the table-3 it was found that statistically significant difference existed at 0.05 level of confidence between Government and Private girl's students in all the Health related fitness variables. Table-3 also shows that the SLJ, SAR and Sit-up of the Government girl's school students were significantly higher than the Private girl's school students. On the other hand Private girl's students taking more time to complete the 20m-dash and 600m than the Government girl's students.

**DISCUSSION**

The purpose of conducting the present study was to investigate the differences in physical fitness status between Government and Private school students of West Bengal. The results of the present study showed that there were significant differences existed in almost all the variables both anthropometric (Weight and BMI) as well as fitness variables (Dash, SLJ, SAR, Sit-up and 600m) except in Height. In the present study it was found that the students of Private School had more Body weight and Body Mass Index (BMI) than the Government school students. Again it was also found that the SLJ (standing long jump), SAR (sit and reach) and Sit-up of the Government school students were significantly higher than the Private school students. On the other hand Private school students taking more time to complete the 20m.-dash and 600m run than the Government school students. This may happen due to the difference of socioeconomic status and scope of physical activity between two separate school settings. Life style of the Government school students is more active in nature than the life of Private school students which produced high level of physical and physiological functioning that may be a cause of significant difference. In Private school the students used to come from upper economic class having less opportunity to sphere their time in physical activity. In Government schools of west Bengal the physical education infrastructure and activity habit of the students are fur better than the Private schools that may perhaps be a cause of significant difference in the variable studied.

**REFERENCES:**

Armstrong N, Balding J, Gentle P, Kirby B. Patterns of physical activity among 11 to 16 year old British children. Br Med J 1990; 301: 203-5.

Bouchard C, Shephard RJ. Physical activity, fitness and health: the model and key concepts. In: Bouchard C, Shephard RJ, Stephens T, editors. Physical activity, fitness and health: Consensus Statement. Champaign, IL: Human Kinetics Publishers; 1993. p 11-23.

Bouchard C. Heredity and health-related fitness. Pros Coun Phys Fitness Sports Res Dig 1993; November: 1-4.

Bouchard C, Shephard RJ. Physical activity, fitness and health: The model and key concepts. In: Bouchard C, Shephard RJ, Stephens T, eds. Physical activity, fitness and health. Champaign, IL: Human Kinetics; 1994:77-88.

Heath GW, Pratt M, Warren CW, Kann L. Physical activity patterns in American high school students: results from the 1990 Youth Risk Behavior Survey. Arch Pediatr Adolesc Med 1994; 148: 1131-6.

Erikssen G, Liestöl K, Björnholt J, Thaulow E, Sandvik L, Erikssen J. Changes in physical fitness and changes in mortality. Lancet. 1998; 352:759-762.

Malina RM. Physical activity and fitness: Pathways from childhood to adulthood. Am J Hum Biol. 2001; 13:162-172.

Moliner-Urdiales D, et al. Secular trends in health-related physical fitness in Spanish adolescents: The AVENA and HELENA Studies. J Sci Med Sport 2010), doi:10.1016/j.jsams .2010.03.004

**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp77-81**
**Journal Impact factor 0.5190**

# Osteoporosis And Exercise Interventions

**Biplob Chowdhury**
**Research Scholar**
**Dept. of Physical Education**
**Visva-Bharati.Santiniketan**
**E-mail- biplobchowdhury80@gmail.com**

## Abstract

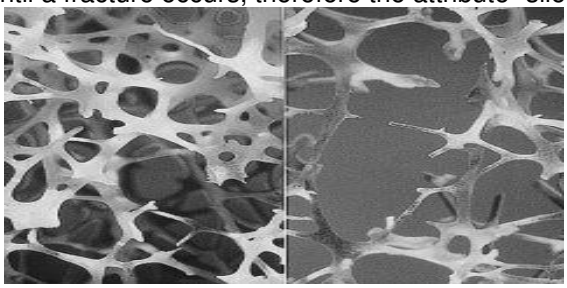
**INTRODUCTION:** Calcium is the most abundant mineral in the body. Calcium combines with phosphorus to form the bones and teeth. It also activates several enzymes, is part of calcitriol, the active form of vitamin D. Inadequate calcium intake, the body draws upon its calcium "reserve" in bone to restore the deficit. If this imbalance is prolonged, the condition of **osteoporosis** develops progressively as bone loses its mineral mass and progressively becomes porous and brittle, bone may eventually break under the stresses of normal living.

**METHODS: -** A literature search over the past twenty years and helpful documents are selected. **RESULTS:** There are several instruments and methods to measure BMD and DEXA scan is more common. A BMD test is essential for Everybody after the age forty to avoid a fracture due to osteoporosis without trauma. Female are more prone to osteoporosis after menopause. Glucocorticoids therapy, Primary/secondary Hypogonadism in men is major causes to develop osteoporosis. **RECOMMENDATIONS:** Regular high impact exercise from childhood is essential to prevent osteoporosis in later life and regular weight bearing exercises are more helpful in maintaining required BMD and BMI as well as preventing fall in old age. Life style risk factors should be minimized by taking precautions for early bone loss. Calcium and vitamin-D play a vital role for bone integrity. Calcium and vitamin-D intake should be adequate for proper bone growth. **CONCLUSION**: Exercise should generally be part of the treatment plan in patients with osteoporosis. Exercise plays a significant part of a life style prescription for reducing fracture in later life.

**KEY WORDS: Calcium, phosphorus,Vitamin-D, Osteoporosis, BMD, BMI, DEXA**

## INTRODUCTION:

Osteoporosis is the main chronic bone disorder is determined by the progressive disruption of the micro- architecture of bone tissue. It is considered one of the most common skeletal disorders in elderly. The bone loss process can occur with no symptoms and the individual feels fine until a fracture occurs, therefore the attribute "silent" given to the disease.



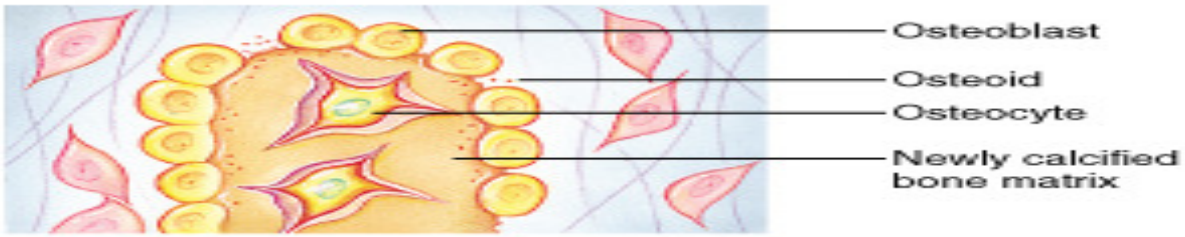
## PHYSIOLOGY OF BONE HOMEOSTASIS:

Bone Formation: - In embryos, the skeleton is primarily hyaline cartilage. During growth & Development much of this cartilage is replaced by bone i.e. intracartilaginous ossification. There are two processes –1. Increase in length of the bone by addition of cartilage on outside. 2. Replacement of cartilage by bone at epiphyseal disc.

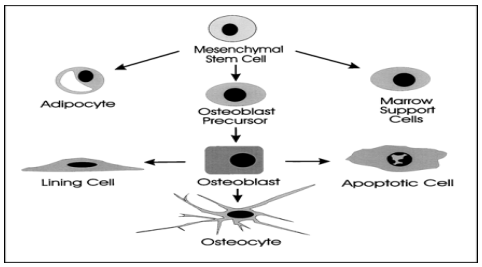
Bone growth: - Epiphyseal plates allow for growth of long bone during childhood. New cartilage is continuously formed and older cartilage becomes ossified. Cartilage is broken down and bone replaces cartilage. Bone are remodeled and lengthened until growth stops.

Types of cells: Osteocytes – Mature bone cells.
Osteoblasts – Bone forming cells.
Osteoclasts – Bone destroying cells.

**Remodeling:** After bone formation, **osteoclasts** and **osteoblasts** continue to remodel the bone.**Resorption and deposition** are hormonally regulated to keep bone mass constant .The hormone controlling bone resorption is **PTH** or parathyroid hormone. The hormone of bone synthesis is **calcitonin**.

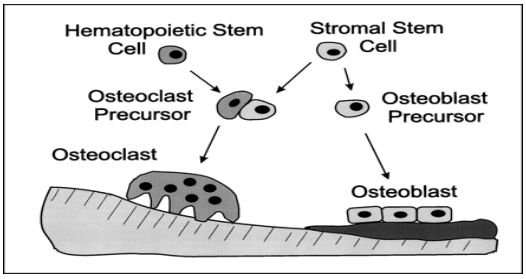



② **Bone matrix (osteoid) is secreted within the fibrous membrane.**




May be stimulated by substances released from the osteoclast or from the bone matrix during resorption.

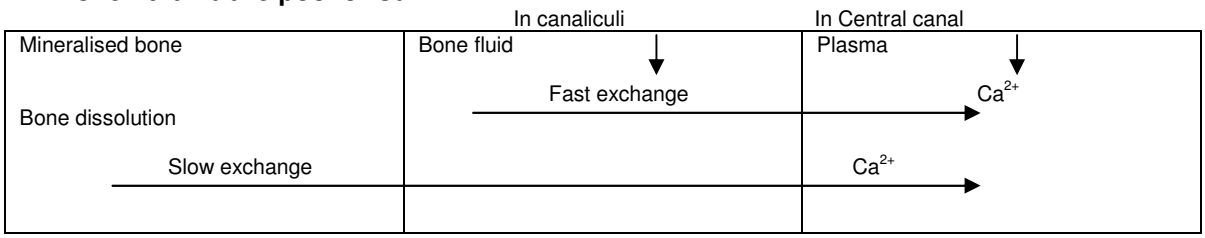
**Origin and fate of osteoblasts:** The fates of the osteoblast are terminal; reactivation of lining cells and possibly osteocytes back to active osteoblasts has been postulated**.**




**Bone and Calcium regulation: -** 99% of body's calcium is in bone. Stable calcium ion concentrates in interstitial fluid vital for membrane function. Calcium-ion concentration maintained by balance of osteogenic and osteoclastic activity.

There are two $Ca^{2+}$ compartments:

**1. Mineralised bone – stable pool of $Ca^{2+}$.**
**2. Bone fluid: labile pool of $Ca^{2+}$.**




**Hormonal regulation of bone:**

| **Bone growth** | **Bone loss** |
|---|---|
| • **Vitamin-D:** Promote differentiation of Osteoblast<br>• **Growth Hormone:** Increase osteoblast function<br>• **Decreased breakdown:** oestrogen – inhibits osteoclasts Calcitonin - inhibits osteoclasts function | • **Increased breakdown of parathyroid hormone (PTH) :** Stimulates osteoclasts.<br>• **Thyroid:** Stimulates osteoclasts.<br>• **Decreased growth cortisol :** Osteoblast death (apoptosis) |

**OSTEOPOROSIS RISK FACTORS:** Doctors and researchers have compiled vast amounts of information on osteoporosis risk factors. Many of those that cannot be reduced through life style changes can be lessened by taking measures to increase bone health.

| **Modifiable risks** | **Fixed risks** |
|---|---|
| • **Alcohol**<br>• **Smoking**<br>• **Low BMI**<br>• **Poor Nutrition**<br>• **Eating disorders**<br>• **Insufficient exercise**<br>• **Low $Ca^{2+}$ intake**<br>• **Vitamin- D deficiency**<br>• **Frequent falls** | • **Age**<br>• **Female gender**<br>• **Family history**<br>• **Previous fracture**<br>• **Race/ethnicity**<br>• **Menopause**<br>• **Long term glucocorticoid therapy**<br>• **Primary/secondary hypogonadism in men** |

**WHO CRITERIA FOR DIAGNOSIS OSTEOPOROSIS:**

| **World Health Organization Definitions of Osteoporosis Based on Bone Density** | | |
|---|---|---|
| **T-Scores** | | **BMD Category** |
| **Examples** | **Range** | |
| 1.0<br>0.5<br>0<br>-0.5<br>-1.0 | -1 and above | Normal BMD |
| -1.5<br>-2.0 | Between -1 and -2.5 | Low BMD (Osteopenia) |
| -2.5<br>-3.0<br>-3.5<br>-4.0 | -2.5 and below | Osteoporosis |

**DIAGNOSIS OSTEOPOROSIS**

**What is a BMD test?**

Traditional X-rays can't measure bone density, but they can identify spine fractures. Bone mineral density (BMD) has to be measured by more specialised techniques. A number of different types of BMD tests are available, but the most commonly used is DXA (dual-energy X-ray absorptiometry).DXA is a low radiation X-ray capable of detecting quite small percentages of bone loss. It is used to measure spine and hip bone density, and can also measure bone density of the whole skeleton. There are a number of different types of test options

DXA (peripheral DXA) measures bone mass at the forearm, finger and heel

SXA (single-energy X-ray absorptiometry) measures the heel or wrist

DPA (dual photon absorptiometry) measures the spine, hip or total body

SPA (single photon absorptiometry) measures the wrist

QCT (Quantitative Computed Tomography) measures the spine or hip

PQCT (peripheral QCT) measures the forearm

QUS (Quantitative Ultrasound) uses sound waves to measurethe heel or finger

A DXA scan, which is used to measure spine and hip bone density, is the most common technique for assessing the risk of osteoporosis.

**PREVENTING OSTEOPOROSIS**

1. **Childhood to adolescence**

**Children and adolescents should:**

Ensure a nutritious diet with adequate calcium intake .Avoid protein malnutrition and under-nutrition.Maintain an adequate supply of vitamin D.Participate in regular physical activity.Avoid the effects of second-hand smoking

2. **Adulthood**

Bone mass acquired during youth is an important determinant of the risk of osteoporotic fracture during later life. The higher the peak bone mass, the lower the risk of osteoporosis.

**Adults should:**

Ensure a nutritious diet and adequate calcium intake .Avoid under-nutrition, particularly the effects of severe weight-loss diets and eating disorders.Maintain an adequate supply of vitamin D.Participate in regular weight-bearing activity.Avoid smoking and second-hand smoking

Avoid heavy drinking

**EXERCISE RECOMMENDATIONS**

**Bone loading exercise recommendations for prevention and treatment of osteoporosis**

**Recommendations for children and adolescents**

This section focuses on children from eight years old through to adolescence and young adulthood. Data drawn from different studies with children in these age groups have been used to develop the following recommendations.Make a lifelong commitment to physical activity and exercise.In terms of bone health, weight-bearing activities such as basketball, volleyball and gymnastics are more effective than weight-supported activities such as swimming and cycling.Intense daily activity is more effective than prolonged activity carried out infrequently.Perform activities that will increase muscle strength, such as running, hopping, or skipping games.Select activities that work all muscle groups like gymnastics.Avoid immobilization and perform short weight-bearing movements if confined to bed.Eat a well-balanced diet that is rich in calcium (milk instead of soft drinks) and protein to promote normal growth and puberty as well as regular menses for girls.The following exercise program from Melbourne, Australia, demonstrated significant increases in BMD in 9- to 10-year old children at both the lumbar spine and the proximal femur. In addition to regular physical education at school, this program incorporated extra classes for the children which resulted in an additional increase in BMD of 4% at the spine and 2% at the proximal femur

| | |
|---|---|
| **Frequency:** | Three times per week |
| **Intensity:** | High impact |
| **Time** | 30 minutes of physical activity after school |

| | |
|---|---|
| **Type:** | 1.Aerobicworkouts:<br>Aerobics, soccer, step aerobics, skipping, ball games, modern dance and weight training<br>2.Circuittraining<br>20-minute weight-bearing, strength-building circuit consisting of 10 exercises designed to load the biceps, triceps, pectoralis major, latissimus dorsi, trunk, deltoids, rectus abdominis, quadriceps femoris, hamstrings, gastrocnemius, and soleus<br>Approximately 1 minute per station<br>One set of 10 repetitions progressing to 3 sets of 10 . |

These recommendations are based on strong scientific evidence suggesting that weight-bearing physical activity plays a key role during the normal growth and development of a healthy skeleton. High-intensity exercise of short duration appears to elicit the greatest bone density increase in the growing skeleton.. A sedentary lifestyle, rather than an excessively active one, is more likely to be the risk faced by most children today

**Recommendations for young adults and pre-menopausal women**

After puberty, bone mineral density (BMD) is not easily augmented. The main role of exercise in young adults and pre-menopausal women, therefore, is to maintain BMD rather than to increase it. Nevertheless, high-intensity exercise can lead to modest bone accrual in targeted areas. Even small increases in bone mineral may significantly reduce the risk of fracture in later life. The following exercise plan designed by Heinonen and colleagues in Tampere, Finland, has been shown to increase lumbar spine and femoral neck BMD in 35- to 45-year old Finnish women by approximately 2%

| **Activity** | **Duration** |
|---|---|
| Warm-up | 15 minutes |
| High-impact jumps* | 20 minutes |
| Stretching and non-impact activities | 15 minutes |
| Cool-down | 10 minutes |

High-impact jump training consisted of an aerobic jump program alternated weekly with a step program. Sessions were performed three times per week over an 18-month period and the height of the jumps increased progressively from 10 to 25 cm, while the number of jumps per session decreased from 200 to 100.Friedlander and colleagues described a resistance-training protocol that used three different classes per week over two years to augment BMD at the lumbar spine (approximately 5%) and femoral neck (approximately 3%)

**CONCLUSION:**

Although no amount of physical activity can stop the biological aging process, there is evidence that regular exercise can minimize the physiological effects of an otherwise sedentary lifestyle and increase active life expectancy by limiting the development and progression of chronic disease like osteoporosis.

**References:**

1. Bailey DA, Faulkner RA, McKay HA. Growth, physical activity and bone mineral acquisition. In: Holloszy JO et al. Ed.
2.Bradney M, Pearce C, Naughton G et al. Moderate exercise during growth in prepubertal boys: changes in bone mass, size, volumetric density and bone strength. A controlled study. J Bone Miner Res 1998;13:1814-1821
3.Friedlander AL, Genant HK, Sadowsky S et al. A two-year program of aerobics and weight training enhances bone mineral density of young women. J Bone Miner Res 1995; 10:574-585.
4.Gortmaker SL, Must A, Sobol AM et al. Television viewing as a cause of increasing obesity among children in the United States 1986-1990. Arch Pediatr Adolesc Med 1996;150:356-362.
5. Heinonen A, Kannus P, Sievänen H et al. Randomised controlled trial of effect of high-impact exercise on selected risk
6.Kannus P, Sievanen H, Vuori I. Physical loading and bone. Bone 1996;18:1-3.
7.Khan K, McKay H, Kannus P, Bailey D, Wark J, Bennell K. Physical activity and bone health. Human Kinetics. IL
8. McArdle William D, Katch Frank I, Katch Victor L. Exercise Physiology, 4th ed.Baltimore USA, Williams & Wilkins.1996.
9. Morris FL, Naughton GA, Gibbs JL et al. Prospective 10-month exercise intervention in premenarcheal girls: positive effects on bone and lean mass. J Bone Miner Res 1997;12:1453-1462
10.Pfeifer M, Sinaki M, Geusens P, Boonen S, Preisinger E, Minne HW. Musculoskeletal rehabilitation in osteoporosis:
11. Reid C, Dyck L, McKay H et al. The benefits of physical activity for women and girls: a multidisciplinary perspective. Vancouver: British Columbia Centers of Excellence in Women`s Health 1999:249
12. Sallis JF, Owen N. Physical activity and behavioural medicine. Thousand Oaks. Ca: Sage, 1998:210

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp82-85**
**Journal Impact factor 0.5190**

# Physical Fitness And Its Significance On Physiological Aspects Of Football Players In Kakatiya University

***Srinivas Nallella**
****Dr. B. Sunil Kumar**
***Doctoral Scholar, Department of Physical Education, Osmania University**
****Board of Studies Chairman, Department of Physical Education, Osmania University**

## INTRODUCTION:

Physical fitness is a multifaceted continuum extending from birth to death, affected by physical activity; it ranges from optimal activities in all aspects of life through high and low levels of different physical fitness to serve disease and dysfunction.

A fit nation can be economically progressive if the citizens have sufficient capacity to work efficiently and gain in productivity. So, health must be regarded as a normal and primary need of the community. It is a primary factor it helps the growth and development of the body. An optimum growth is important for efficient existence in a biologically adverse and economically competitive world. Health is a basic need for the development of physical skills, agility, strength and endurance necessary to execute the daily routine work. Health is required to plan a daily programme of healthful physical activities, so that people develop vitality and skills for an efficient and economic adult life.

It is through health education that people can gain the knowledge and the insight by which adult life is rendered fruitful and satisfying. The opportunities for practicing proper health habits are provided in schools by a good programme of 'health education'. Health education may help the pupils to continue to strive during adult life to maintain their capacity for work and gain resistance and immunity against avoidable diseases.

## PHYSICAL FITNESS:

The physical fitness and wellness are inter-related to each other. Physical fitness is the sum of the fine motor abilities namely strength, speed endurance, flexibility and coordinative abilities. The most important aim of the sports exercise is to improve and maintain the physical fitness and wellness of the human being. Exercise is an essential element in the achievement and maintenance of physical fitness and wellness of human being. Physical fitness covers organic fitness as an individual. The main components of physical fitness are speed, strength, endurance, flexibility, agility, cardiovascular fitness and co-coordinative ability.

## PHYSIOLOGY:

Human physiology is the science of the mechanical, physical and biochemical functions of humans in good health, their organs, and the cells of which they are composed. The principal level of focus of physiology is at the level of organs and systems. Most aspects of human physiology are closely homologous to corresponding aspects of animal physiology, and animal experimentation has provided much of the foundation of physiological knowledge. Anatomy and physiology are closely related fields of study: anatomy, the study of form, and physiology, the study of function, are intrinsically tied and are studied in tandem as part of a medical curriculum. Traditionally, the academic discipline of physiology views the body as a collection of interacting systems, each with its own combination of functions and purposes.

**STATEMENT OF THE PROBLEM:**

The purpose of the study is to find out whether or not any significant difference found on physiological aspects in relation to their physical fitness of football players in Kakatiya University.

**SIGNIFICANCE OF THE STUDY:**

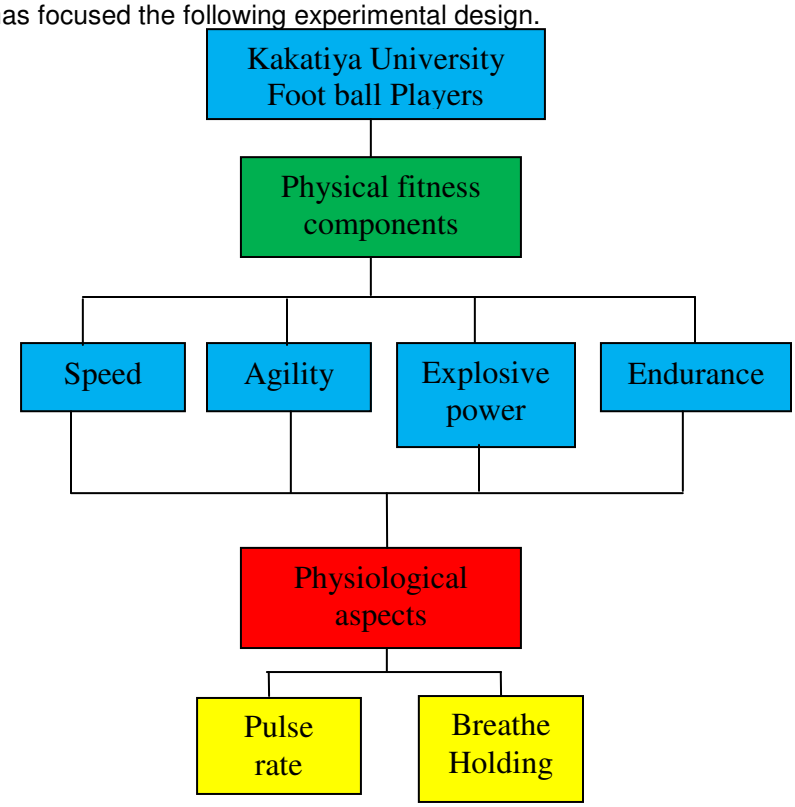
The various actions in football are so fast that it is difficult to justify the performance of a player without analyzing them. It is also essential to ascertain development of players in various factors affecting performance. The top most teams in national or international have come up because they have evaluated performance of their players in training and competitions and worked hard to reach world level through long term systematic and scientific training. This study is to find out the physical fitness and its significance on physiological aspects of the foot ball players in Kakatiya University.

**OBJECTIVES OF THE STUDY:**

The Study is to find out the physical fitness and its significance on physiological aspects of the foot ball players in Kakatiya University.

**DESIGN OF THE STUDY:**

The study has focused the following experimental design.




**SAMPLE OF THE STUDY:**

The study was formulated based on the simple random sampling. The samples were collected from the 50 Foot ball players in the age group of 20 – 25 years from kakatiya university in the age group of 18-21 years were considered. The data was collected during Inter college University Tournaments

**Showing the Sample of the Study**

| Sl. No. | Category of the subjects | Number of subjects |
|---|---|---|
| 1. | Kakatiya University Foot ball players | 50 |

## TOOLS USED:

The present study under investigation selected the following physical fitness activities and test performed on physiological aspects.

- **Physical Fitness Activities**
  Speed, Agility, Explosive power and Endurance.
- **Physiological tests**
  The Harvard Step test (Pulse Rate – 1 minute), Breath Holding Time (1 minute)

## DATA COLLECTION PROCEDURE:

50 Kakatiya University Foot ball Players have been selected for the study and they have under gone physical fitness activities for 45 days. The pre- test was taken, and then the post test was administrated after the systematic training of physical fitness activities like speed, agility, explosive power and endurance on physiological aspects.

## RESULTS & DISCUSSIONS

**Table – 1 Showing the Mean Values, SD, df, 't' value and p-value between pre-test and post of kakatiya University football players in relation to their pulse rate.**

| Sl. No. | Subjects | N | Mean | S.D. | df | 't' ratio | P value |
|---|---|---|---|---|---|---|---|
| 1. | Pre - test | 50 | 101.88 | 1.36 | 98 | 2.46 | 0.00 |
| 2. | Post – test | 50 | 126.56 | 2.12 | | | |

**Graph – 1 Showing the Mean Values, SD, df, 't' value and p-value between pre-test and post of kakatiya University football players in relation to their pulse rate.**

## DISCUSSION

Table-1 and Graph-1 shows the mean, standard deviation, degrees of freedom, t-value and significance between pre-test and post- test of Kakatiya University foot ball Players in relation to their **pulse rate**. The mean value of Pre-test was 101.88, standard deviation was 1.36 and the mean value of post-test was 126.56 and standard deviation was 2.12. The obtained t-ratio was 2.46, which was found to be significant at 0.00 levels.

**Table – 2 Showing the Mean Values, SD, df, 't' value and p-value between pre-test and post of kakatiya University football players in relation to their Breath Holding**

| Sl. No. | Subjects | N | Mean | S.D. | df | 't' ratio | P value |
|---|---|---|---|---|---|---|---|
| 1. | Pre – test | 50 | 34.98 | 3.79 | 98 | 2.68 | 0.01 |
| 2. | Post – test | 50 | 32.67 | 1.62 | | | |

**Graph – 2 Showing the Mean Values, SD, df, 't' value and p-value between pre-test and post of kakatiya University football players in relation to their Breathing Holding.**

## DISCUSSION

Table -2 and Graph -2 shows the mean, standard deviation, degrees of freedom, t-value and significance between pre-test and post- test of Kakatiya University foot ball Players in relation to their **Breath Holding**. The mean value of pre-test was 34.98, standard deviation was 3.79 and the mean value of post-test was 32.67 and standard deviation was 1.62. The obtained t-ratio was 2.68, which was found to be significant at 0.01 levels.

## CONCLUSION

And, it is finally concluded that physical fitness have yielded significant differences on the physiological aspects of foot ball players it have scientifically proved better that the kakatiya university foot ball players have major role to prove their physical fitness in the performance of the game the physical fitness variables viz., speed, explosive power, agility and endurance,

In the present scenario the Tactical standards in foot ball game have been playing a significant role in the creeping performance of the modern game of foot ball. But, the fact here was the players were well trained in all aspects due to their difference in exposure to various situations the results differ, from the fluctuations of psychological variables will be attributed to the educational background of the foot ball players.

## References:


- George T. Stafford and Ray O. Dencan, Physical Conditioning Exercises for Sports and Health Living (New York: The Ronald Press Company, 1965) P. 15.
- Srivatson, "Over all pattern of coaching Basketball", Yayam I (May 1963) P. 13
- F. Edward Coyle, Mari. K. Hammert and Andrew R. Coggan, Effect of determining of Cardiovascular responses to exercise: "Role of Blood Volume Journal of Applied Physiology" 60, No. 1 (Jan. 1986), P. 95-99.
- George T. Stafford & Ray O. Duncan, Physical conditioning Exercises for Sports and Health Living (New York: The Ronald Press Co., 1965) P. 15
- Madanmohan, Kaviraja Udupa, Ananda Balayogi Bhavanani, Chetan Chinmaya Shatapathy and Ajit Sahai, modulation of cardio vascular response to exercise by yoga training, Department of Physiology, Department of Social and Preventive Medicine, Jawaharlal Institute of Post Graduate Medical Education & Research (JIPMER), Pondicherry, Indi

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp86-90**
**Journal Impact factor 0.5190**

# Relationship Of Short Term Memory With Depression And Anxiety

***Shantanu Halder**
**Research Scholar,**
**Dept.of Physical Education,**
**University of Kalyani.**
****Dr. Gopal Chandra Saha (Corresponding Author)**
**Assistant Professor in Phy. Edu. and**
**AFC 'C' license Coach,**
**P.G.G.I.P.E., Banipur,**
**West Bengal, India.**
**E-mail: callmegopal@gmail.com**

**ABSTRACT**
The aim of this study was to investigate the relationship of Short Term Memory with Depression and Anxiety. Only sixty male subjects (college students) were selected from different colleges from north 24 parganas district in West Bengal for this study whose age range between 20 – 25 years. Standardize Questionnaires were used for the collection of data. The Hamilton anxiety scale, Center for epidemiologic studies depression scale (CES-D) and Short Term Memory scale were used for the purpose of this research study. Pearson product moment Correlation Coefficient statistical method was used to find out the relationship of Short Term Memory with Depression and Anxiety. In conclusion, significant negative relationship was observed between Short Term Memory with Depression and Anxiety. Overcoming of Depression and Anxiety is strongly recommended.

**KEY WORDS:** College students, Short Term Memory, Anxiety, Depression.

## INTRODUCTION

Just as sensory memory maintains environmental stimuli only long enough to decide whether to send it on, the second stage, short term memory (STM), only temporarily stores and processes the sensory image until it decides whether to send it along to the third stage (long term memory ). Although they share a similar purpose, STM does not store exact duplicates of sensory information but rather a mixture of perceptual analyses. The duration and capacity of STM are relatively limited. STM holds a restricted amount of new information, five to nine items, for up to 30 seconds, by most estimates, although some researches extend the time to a few minutes (Best, 1999; Kareev, 20000). As with sensory memory, information in STM either is transferred quickly into the next stage (long term memory) or it decays and is lost.Short-term memory is a limited-capacity system that provides temporary access to a select set of representations in the service of current cognitive processes (Cowan, 1999; Miyake & Shah, 1999). Thus, short-term memory reflects the focus of attention and the temporary activation of representations that are the contents of awareness (Jonides et al., 2008). Given the capacity limitation of this system, it is important that the contents of short-term memory be updated efficiently, a task controlled by executive processes (e.g., Friedman & Miyake, 2004; Hasher, Zacks, & May, 1999).Depression is a mood disorder that affects people in different ways and for different reasons. For some people, there is a genetic element to mood disorders, but biochemical and psychological factors also have been found to cause depression and other mood disorders. Excess brain chemicals called neurotransmitters have been found in the brains of people diagnosed with depression. This chemical imbalance has an effect on the "messages" sent between the brain and the body. Other people, meanwhile, may develop depression because they already have low self-esteem or are pessimistic. Certain stress-inducing environmental and life situations, such as job loss or divorce, might contribute to the onset of depression. (http://curiosity.discovery.com/question/depression-affect-short-memory)

Therefore, it is noteworthy that several researchers have suggested that rumination and depression are associated with deficits in executive functioning (Hertel, 1997; Joormann, 2005; Linville, 1996). Deficits in controlling the contents of short-term memory may also affect depressed people's ability to regulate negative effect. The experience of negative mood is generally associated with, or in part consists of, the activation of mood-congruent representations in short-term memory (Isen, 1984; Siemer, 2005). Changes in cognition due to negative mood, however, are usually transient, and moodcongruent cognitions are often replaced quite quickly by thoughts and memories that serve to regulate and repair the mood state (Erber & Erber, 1994; Parrott & Sabini, 1990; Rusting & DeHart, 2000).Depressed people lose their ability to concentrate. They have difficulty remembering new information, and research has shown that depressed people only remember negative memories, which leads them to prolong their depression. One of the brain areas central to depression is the hippocampus, which is responsible for short-term memory. With depression an increase in the production of cortisol goes into the bloodstream and shrinks certain areas of the brain, one of which is the hippocampus. Excess chemicals being produced in the brain (neurotransmitters) set off a chemical imbalance. This imbalance has an effect on the connections between the brain and the body. This excessive chemical imbalance has been found in the brains of people diagnosed with depression. If short-term memory is affected it would stand to reason that memories cannot be passed on to long-term memories. "It really comes down to a lack of attention and concentration, Depression leaves scars, and some people suffer for years. It affects their ability to sleep normally, their sex drives and their ability to enjoy simple things. Memory is the biggest casualty, but other functions are also affected. If you know of anyone who is depressed, get him or her help immediately. (http://curiosity.discovery.com/question/depression-affect-short-memory).From the literature, it appears that the effect of stress on long term memory is influenced by the effect of stress on STM. Stress also affects the recall ability of people who are eyewitnesses to emotionally stressful events. People who saw a videotape of a mugging, a high anxiety-provoking event, were less able to describe the actors in the videotape than people who saw an emotionally neutral event (Christianson**,** 1992).According to O'Hare (1999), less is known about the effects of stress on long term memory. It is known (Bosch, 2000) that in a stressful situation, the body releases cortisol, which has a negative effect on long term memory. In general, LTM (Long Term Memory) functions seem to be less affected by stress than WM (working memory) (O'Hare, 1999). There is some evidence that suggests that stress impairs the transfer of newly acquired information from WM to LTM, thereby affecting learning. If this is true, then realistic training programs that attempt to generate the stress a pilot may experience during an emergency may not provide the best learning environment. With respect to recall from LTM, some research suggests that under stress, people will forget recently learned items and rely on items learned earlier, which is called stress-related regression (O'Hare, 1999). Anxiety and memory loss is very common, but keep in mind that this is generally relegated to difficulty concentrating or remembering short-term items. The description often used is a feeling of a "brain fog." Significant memory loss, such as the inability to remember names, places, or other long-term details should be addressed with a physician immediately, because it could be a sign of a more serious problem. The connection between anxiety and memory loss is typically not permanent, and if one receives treatment for anxiety and begins to feel better, the ability to concentrate and remember things should return fairly quickly. (http://www.wisegeek.com/what-is-the-connection-between-anxiety-and-memory-loss.htm).

**DEFINATION OF TERMS**

**SHORT TERM Memory** Short Term Memory is the part of the memory system where information is stored for roughly 30 seconds. Information can be maintained longer with the use of such techniques as rehearsal. To retain the information for extended periods of time; it must be consolidated into long-term memory where it can then be retrieved. Short-term memory allows you to retain phone numbers from an operator before and while you are dialing the number of interest. Short-term memory, also known as primary or active memory, is the information we are currently aware of or thinking about. In Freudian psychology, this memory would be referred to as the conscious mind. The information found in short term memory comes from paying attention to sensory memories. (Cowan, N. 2001).

**ANXIETY**

Anxiety is a common emotion also known as the body's natural "fight or flight" response to stressful experiences. Anxiety can be a positive thing that helps you deal with common tense situations, such as preparing for an important presentation, reacting to unexpected danger or tackling a challenging assignment at school or work. Sometimes, feelings of anxiety can become disproportionate to the situation you're facing, and that's when it may be time to seek professional help.Anxiety is the sense of uneasiness that is experienced in the individual's relationships with other people (and in his /her relationship to their own conscience). In any situation where the person's vanity is undermined, fear arises. The conjunction of this fear with the vanity creates anxiety.

**DEPRESSION**

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and physical well-being. Depressed people may feel sad, anxious, empty, hopeless, worried, helpless, worthless, guilty, irritable, or restless. Depression may be described as feeling sad, blue, unhappy, miserable, or down in the dumps. Most of us feel this way at one time or another for short periods.

**METHOD AND MATERIALS**

Standard questionnaires were used for the collecting of data. Three questionnaires were used for this study. Short Term Memory scale was used for the measurement of short term memory, Hamilton anxiety rating scale was used to evaluate the anxiety level and Center for Epidemiologic Studies Depression scale (CES-D) was used for the measurement of depression.

**SUBJECT:**

Only sixty male subjects (college students) were selected from different colleges of north 24 parganas district in West Bengal for this study whose age range between 20 – 25 years.

**TEST/TOOLS:**

**SHORT TERM MEMORY (S.T.M.)**

Short Term Memory scale was designed by B. B. Asthana (1982). S.T.M. scale study the effect of different time intervals and association values on short term recall. Higher percentage of recall indicates better performance and lower percentage indicates poor performance.

**HAMILTON ANXIETY RATING SCALE**

The Hamilton anxiety rating scale was used to evaluate the anxiety level of the subjects. .The scale consists of 14 items; Responses are made on a 4-point scale. The total anxiety scale ranges from 0 to 56. (Normal 0-13, mild- 14-17, moderate -18-24 and severe- 25 or above)

**CENTER FOR EPIDEMIOLOGIC STUDIES DEPRESSION SCALE (CES-D) (RADLOFF, 1977)**

The CES-D is a valuable tool for identifying a group at-risk for depression and for studying the relationship between depressive symptoms. CES-D is a 20-item self-report scale designed to measure multiple dimensions of affective symptomatology and current depressive symptoms within the last week in the general population. Each item is rated on 4-point Likert-type scale indicating the degree of their occurrence during the last week. The items' responses range from 0 (rarely or none of the time) to 3 (most all of the time). A total score is ranged from 0 to 60. A score of 22 or higher indicates probable Major Depression.

**STATISTICAL PROCEDURE**Pearson product moment Correlation Coefficient statistical method was used to find out the relationship of Short Term Memory with Depression and Anxiety.

**FINDINGS**

**TABLE -1**

**MEAN, S.D., AND COEFFICIENT CORELATION OF SHORT TERM MEMORY AND DEPRESSION**

| VARIABLES | MEAN | S.D | 'R' | REMARK |
|---|---|---|---|---|
| SHORT TERM MEMORY | 44.41 | 9.70 | (-) 0.302 | significant |
| DEPRESSION | 19.36 | 2.32 | | |

'R' value required to be significant at 0.05 level of confidence with 58 degree of freedom was 0.273

**TABLE -2**
**MEAN, S.D., AND COEFFICIENT CORELATION OF SHORT TERM MEMORY AND ANXIETY**

| VARIABLES | MEAN | S.D | "R" | REMARK |
|---|---|---|---|---|
| SHORT TERM MEMORY | 44.41 | 9.70 | (-) 0.332 | significant |
| ANXIETY | 20.95 | 3.60 | | |

'R' value required to be significant at 0.05 level of confidence with 58 degree of freedom was 0. 273.

## DISCUSSION OF FINDINGS

In this study, the aim was to investigate the relationship of Short Term Memory with Depression and Anxiety. It was found from the above statistical calculation that a strong negative relationship exists between Short Term Memory with Depression and Anxiety.

Many studies have shown a strong relationship of short term memory with depression and anxiety. Recent meta-analytic reviews have suggested a significant relationship between depression and memory impairment (Burt, Zembar, & Niederehe, 1995; Kindermann & Brown, 1997; Veiel, 1997). Dunbar & Lishman, 1984; Newman & Sweet, 1986; Williams, Iacono, Remick, & Greenwood, 1990 also found that the negative effects of depression on memory. Eysenck and Calvo (1992) suggest that anxiety hinders memory performance under certain circumstances. Humphreys and Revelle (1984) examined that anxiety reduces short-term memory (STM).

Depression causes an increased amount of cortisol in the bloodstream, which shrinks certain areas of the brain. One of the main areas in the brain affected by cortisol is the hippocampus, which is responsible for short-term memory. Therefore, a depressed person has difficulty remembering new information. In addition, neurological studies have shown that depressed people can only remember negative memories, causing them to remain depressed even longer (http://curiosity.discovery.com/question/depression-affect-short-memory). Depression not only affects your brain and behavior— it affects your entire body. Depression has been linked with other health problems, including HIV/AIDS. Dealing with more than one health problem at a time can be difficult, so proper treatment is important.

The connection between anxiety and memory loss is that some of the side effects that come from experiencing frequent anxiety can lead to memory loss. When an individual experiences anxiety, the stress hormone cortisol is released, among others. This stress hormone serves a necessary purpose in daily life, allowing one to quickly respond to dangerous situations and to make snap decisions. If it is constantly released into the brain, however, it can begin to slow the communication between neurotransmitters, leading to more frequent anxiety and memory loss. (http://www.wisegeek.com/what-is-the-connection-between-anxiety-and-memory-loss.htm)

Scientists are probing the connection between depression and memory-some in hopes of improving treatments, and to understand the connections between mind, mood, and memory. There is a strong relationship exist among short term memory, depression and anxiety, so some steps should be taken to overcome anxiety and depression.

## REFERENCES


***Asthana, B.B. (1982).** Retrieval in Recognition Memory: as a function of levels of processing and Type of Materials. Unpublished Doctoral Thesis, Sagar University, Sagar.

***Best, J.B. (1999).** Cognitive psychology Belmont CA. Wadswrth.

***Bosch, X. (2000).** Stress hormone impairs long-term retrieval of memorised information. The Lancet, 355, 1078.

***Burt, D. B., Zembar, M. J., & Niederehe, G. (1995).** Depression and memory impairment: a meta-analysis of the association, its pattern, and specificity. Psychological Bulletin, 117, 285–305.

***Cowan, N. (1999).** An embedded-processes model of working memory. In A. Miyake & P. Shah (Eds.), Models of working memory: Mechanisms of active maintenance and executive control (pp. 62-101). New York: Cambridge University Press.

***Christianson, S. (1992).** Emotional stress and eyewitness memory: A critical review. Psychological Bulletin, 112, 284-309.

***Cowan, N. (2001).** The magical number 4 in short-term memory: A reconsideration of mental storage capacity. Behavioral and Brain Sciences, 2, 97–185.

***Dunbar, G. C., & Lishman, W. A. (1984).** Depression, recognition-memory and hedonic tone: a signal detection analysis. British Journal of Psychiatry, 144, 376–382

***Erber, R., & Erber, M. W. (1994).** Beyond mood and social judgment: Mood incongruent recall and mood regulation. European Journal of Social Psychology, 24, 79-88.

***Eysenck, M. W., & Calvo, M. G. (1992).** Anxiety and performance: the processing efficiency theory. Cognition and Emotion, 6, 409–434.

***Friedman, N. P., & Miyake, A. (2004).** The relations among inhibition and interference control functions: A latent-variable analysis. Journal of Experimental Psychology: General, 133, 101-135.

***Hasher, L., Zacks, R. T., & May, C. P. (1999).** Inhibitory control, circadian arousal, and age. In D. Gopher & A. Koriat (Eds.), Attention and performance XVII: Cognitive regulation of performance. Interaction of theory and application (pp. 653-675). Cambridge, MA: MIT Press.

***Hertel, P. T. (1997).** On the contributions of deficient cognitive control to memory impairments in depression. Cognition & Emotion, **11**, 569-583.

***Humphreys, M. S., & Revelle, W. (1984).** Personality, motivation, and performance: a theory of the relationship between individual differences and information processing. Psychological Review, 91, 153–184.

***Isen, A. M. (1984).** Toward understanding the role of affect in cognition. In R. S. Wyer & T. K. Srull (Eds.), Handbook of social cognition (pp. 179-236). Hillsdale, NJ: Erlbaum.

***Jonides, J., Lewis, R. L., Nee, D. E., Lustig, C. A., Berman, M. G., & Moore, K. S. (2008).** The mind and brain of short-term memory. Annual Review of Psychology, **59**, 193-224.

***Joormann, J. (2005).** Inhibition, rumination, and mood regulation in depression. In R. W. Engle, G. Sedek, U. von Hecker, & D. N. McIntosh (Eds.), Cognitive limitations in aging and psychopathology: Attention, working memory, and executive functions (pp. 275-312). New York: Cambridge University Press.

***Kindermann, S. S., & Brown, G. G. (1997).** Depression and memory in the elderly: a meta-analysis. Journal of Clinical and Experimental Neuropsychology, 19, 625–642.

***Linville, P. (1996).** Attention inhibition: Does it underlie ruminative thought? In R. S. Wyer, Jr. (Ed.), Ruminative thoughts: Advances in social cognition (Vol. 9, pp. 121-133).

***Miyake, A., & Shah, P. (1999).** Models of working memory: Mechanisms of active maintenance and executive control. New York: Cambridge University Press.

***Maier W, Buller R, Philipp M, Heuser I. (1988).** The Hamilton Anxiety Scale: reliability, validity and sensitivity to change in anxiety and depressive disorders. J Affect Disord; 14(1):61–8.

***Newman, P. J., & Sweet, J. J. (1986).** The effects of clinical depression on the Luria–Nebraska Neuropsychological Battery. International Journal of Clinical Neuropsychology, 7, 109–114.
***O'Hare, D. (1999).** Human performance in general aviation. Aldershot, England: Ashgate
***Rusting, C. L., & DeHart, T. (2000).** Retrieving positive memories to regulate negative mood: Consequences for mood-congruent memory. Journal of Personality & Social Psychology, **78**, 737-752.

***Radloff, L. S. (1977).** The CES-D Scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1(3), 385-401.

***Siemer, M. (2005).** Mood congruent cognitions constitute mood experience. Emotion, **5**, 296-308.

***Veiel, H. (1997).** A preliminary profile of neuropsychological deficits associated with major depression. Journal of Clinical and Experimental Neuropsychology, 19, 587–603.

***Williams, K. M., Iacono, W. G., Remick, R. A., & Greenwood, P. (1990).** Dichotic perception and memory following electroconvulsive treatment for depression. British Journal of Psychiatry, 157, 366–372.

***http://curiosity.discovery.com/question/depression-affect-short-memory**

***http://www.wisegeek.com/what-is-the-connection-between-anxiety-and-memory-loss.htm**

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp91-93**
**Journal Impact factor 0.5190**

# Importance of Yoga in modeling sports performance

**Dr. S.G. Praveena Kumar**
**Physical Education Director,**
**KLE's Sri. Mrityunjaya Arts & Com. College**
**Dharwad-580008**

**Abstract**
Today every human being is having a potential power with himself or herself. Whoever feel identify the power with oneself could have development in their life. Now a days people suffer from headaches, back and shoulder aches, allergies and Asthma. The regular practice of Yoga helps us to accept whatever physical or mental conditions we suffering from by increasing our immediate sense of well-being and calmness. Yoga is highly recommended for people in competitive, stressful working environments for those who suffer from headaches, back and shoulder aches, and asthma. Yoga is also cures behavioral disorder, Yoga is an ancient art based on a harmonizing system of development for the body, mind and spirit. It is a practical aid, not a religion. Continued practice of Yoga will lead one to a sense of peace and well being and also a feeling of being in harmony with environment. The modern ear with the development
.

**Introduction**

The sentence of Yoga is comes form Sanskrit "yuj", which means, "to join" . Yoga is one of the Six system of Indian history. The classical form of Yoga based on the text described to Patnjali, became known in the middle Ages as Raja Yoga . Other forms of Yoga also developed which might be followed together with independently . Among these the Practices of Hatha Yoga have become famous throughout the world.

*Yoga can be divided as follows*

1. Pre-classical Yoga 2. Classical Yoga 3. Post- classical 4. Vedic Yoga

**Importance of the study**

Athletes can be a powerful enhancement in regular training exercise. Practicing Yoga in regular Program helps develop strength. Flexibility, concentration, cardiovascular health and tightness etc. The most significant benefit of players, adding Yoga to be training program is its effect on performance .

**Definition**

Practice of the yoga increase our lung capacity and respiration, improve out ability to resist stress, reduce boy weight and girth, decrease cholesterol and blood sugar levels , restore and vitalize the body's natural systems.

**Practice of Yoga**

Yoga is more focus on Practical benefits. There is a definite difference between Yoga and stretching and normal exercise. Traditional exercises are oriented towards a certain goad such as the doing a number of sit- ups or push . Yoga teaches the concept of focusing your awareness while performing specific postures.

**Physical values of Yoga**

The benefits of Yoga are numerous, including improved physical fitness, stress control, general well being mental clarity and self understanding, People of all ages can do yoga and it can also be adapted for people with disability or special needs. The poses enhance muscle strength , coordination, flexibility and agility and can help and bad back feel better.

**Fitness Values of Yoga**

Regular practice of Yoga helps to keep our body fit, controls cholesterol level, reduce weight , normalizes blood pressure and improves heart performance. According to the National Institutes of Health, when people actively seek to reduce the stress in their levels by quieting the mind, the body often works to heal itself. In this sense Yoga can be seen not only as a way to get into shape on several levels.

**Physiological Values of Yoga**

Yoga improves posture, increase the intake of oxygen and enhances the functioning of the respiratory, digestive, endocrine and reproductive and excretory system. Its effects on the emotions are equally beneficial by calming the mind, attuning us to environment and diminishing insomnia caused by mental restlessness. Yoga is highly recommended for people in competitive, stressful working environments, for those who suffer from he aches, back shoulder aches and asthma. Part of yoga practice is deep breathing, which per cent alkaline helps to make the body more alkaline. The acid alkaline ratio is crucial to good health.

**Psychological Values of Yoga**

Many studies show that patients with heart problems who followed stress reduction program that include Yoga did better than patients who exercised or did nothing, further, preliminary studies in the United States and India suggest that Yoga may be helpful for specific conditions, such as asthma, epilepsy, anxiety, stress and others. Yoga works on Psychological level too. In a Yoga position one should concentrate on a total awareness of our energy and how it flows . One should learn how body and ind works together. Almost all exercises can be beneficial depending on the intent and body condition; practicing yoga ultimately leads towards long term heath and well –being .

**Essential of Yoga in Physical Education**

Physical education is study about physical, mental, moral, emotional, social and spiritual. As for athletes, Yoga can be a powerful enhancement in regular training exercises. Adding Yoga in a routine training program helps develop strength, flexibility, and range of motion, concentration, cardiovascular health, stress, tension and tightness. The most significant benefit of adding Yoga to be a training program is its effect on performance. Yoga allows an athlete to train himself harder and a higher level because the range of motion is greater and the fear of injury is lessened.

**Application of Yogasanas on Sport**

Application of various systems or braches of Yoga is described as follows

*Karma Yoga*: Karma Yoga is useful for players to achieve union by action and service. It helps the players to develop the steadiness of mind, which is more important for better sports performance.

*Bhakthi Yoga* : Bhakthi Yoga principles helps the physical educators and players to achieve better emotional stability.

Jnana Yoga: Knowledge, insight and wisdom are required for all to lead successful life. Physical physical education players are not exemption to this.

*Hatha Yoga*: Hatha Yoga stimulates the nervous system and vital organs. Players are advised to practice hatha Yoga regularly to improve the functions of nervous system, glands and vital organs. Hatha Yoga helps the physical educations and players to have better control over the body.

*Mahtra* Yoga: Regular and systematic practice of mantra Yoga develops the coordinated action of body and mind of physical educators and players.

*Kundalini Yoga*: Practice of Kundalini with proper personal supervision of a teacher. Physical educators and players can practice this at later age to lead a peaceful life.

**Application of Astanga Yoga**

Patanjali Maharshi divided Eight Astang Yoga 1. Yama 2. Niyama 3. Asana 4. Pranayama 5. Pratyhahara 6. Dharana 7. Dhyana 8. Samadhi

*Yam* : yama is the general discipline and it is the control of the body. Mind and speech. Playesr should follow yama to hae best sportsmanship qualities.

*Niyama*: Niyamas are rules for living players should follow the principles of Niyama to maintain discipline with teammates. Opponents, physical education teachers. Coaches, officials, others sports persons family members and society members.

**Asana:** Asana is physical posture. Asana should be comfortable posture giving relaxation and practice with complete awareness.

**Applications of Asans**:

Regular and systematic practice of Asana leads to better physical development , smooth physiological function and better psychological stability for players. The physical, physiological, psychological and other benefits of Asana for players are discussed elaborately in this lesson. Asana regulate the actions body and mind of players, which is more important for better performance.

**Application of Pranayam**

There are three steps of Pranayama are 1. Inhaling - take as much air as possible, b. retaining of the breath retain the inhaled air for half of the time taken in inhaling ad c. exhaling – gradually exhale the air in the almost the same time as taken for inhaling. Regular practice of pranayama regulates the whole body in general and respiratory system in specific. During Strenuous physical activity the cardio respiratory endurance plays a vital role. There is much variation in breathing during rest and physical activity the cardio endurance plays vital role. There is much variation in breathing during rest and physical activity. During physical activity respiratory rate is increased to supply more oxygen that is the fuel for working muscles. Hence, Systematic practice of Pranayama is useful for all players. It is much more useful for players who complete themselves in endurance type of activities such as long distance running, foot ball etc. thus players are advised to practice pranayama daily to perform better in sports.

**Use of Yogasans on various sports**

Sporting events form an ideal condition for bringing the human race together. In general most people indulge in a sporting event for the pleasure of it and also as a means of achieving fitness to tone up their bodies, The nature of competitive sports is entirely differed from recreational sports activities. Competitive sports demand continuous strenuous training for long duration . further players have keen interest on success in competition. Injury is quiet common in competitive sports. One main concern is that most sporting acidities rely on usage of one part of body, and this creates asymmetry and overuse of particular limb. It leads to have high levels of physical and mental stress for players. As the sports are becoming more and more professionalized , players suffer form stress for players. As the sports are becoming more and more professionalized, players suffer form stress greater than an executive The later involve in physical activity to remove physical, physiological and psychological stress. In the case of the professional sports person, the right approach is to use Yoga Yoga is an ideal method for protecting the mind and body of the athlete. The professional athletes should realize that Yoga is an invaluable means of reaching and maintaining the peak of physical and mental strength. Yoga is important is of major sport and games .

**Conclusions** :

1. A sound body with sound mind is essential for players to achieve the goal. Yoga coordinates the actions of body and mind of players
2. Both physical and psychological preparation of athletes is essential for better performance. Asana are more useful for Physical educationists and coaches to give psychological training for players.
3. Athletes are willing to develop psychological variables such as attention achievement motivation, self confidence, and level of aspiration, mental health and positive thoughts.
4. Athletes are willing to reduce, aggression, anxiety, emotion, tension, stress etc. for better performance.

**Reference**:


- Yoga mimamsa Vol. XLIII,Kaivaldham, Pune
- International of health, physical education & Computer Science
- Asian Journal of Physical Education & Computer Science in Sports
- http://www.physioroom.com/researchcricket
- http://www.backpaindvice.co.uk/cricket
- http://www.emedicinehealth.com/backpain

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp94-98**
**Journal Impact factor 0.5190**

# Analysis Of Differences In Cardiovascular Endurance And Aggression Among Rural, Urban And Semi Urban School Boys

[*]**Mr. J.Ramesh Babu** [**]**Dr. N. S. Dilip**
*. Director of Physical Education,
** Professor, Jawaharlal Nehru Technological University.

## ABSTRACT

The aim of the study was to find out the differences if any existed among rural, urban and semi urban on cardiovascular endurance and aggression. 50 rural, 50 urban and 50 semi urban students from Andhra Pradesh were randomly selected and their cardiovascular endurance and aggression levels were determined. Using standard tests and questionnaire. The analysis of variance proved that, the obtained F ratio values 11.68 and 8.36 on the scores of Cardiovascular Endurance and aggression were greater than the required F table ($P<0.05$) The rural boys were found possess significantly better cardiovascular endurance than urban and semi urban boys. The semi urban boys were more aggressive than rural boys. The results indicated imbalances among rural, urban and semi urban boys, which is mainly due to the differences in provision of facilities and physical education programmes. It was concluded that efforts may be made for uniform availability of physical education and sports programmes for the all round development of the students in Andhra Pradesh, particularly among urban and semi urban boys.
**Key words**: Rural, Urban, Semi Urban, Cardiovascular Endurance, Aggression

## INTRODUCTION

Cardiorespiratory system is the body's vital transport system as it serves as a carrier through which materials are moved by means of a network arteries, veins and capillaries. It transports the necessary food materials and oxygen to the cells and serves as the garbage collector, removing waste products from the cells and transferring them for the elimination. Training enhances adaptations and improvements in the cardiorespiratory system.

Cardio respiratory endurance is characterized by moderate contraction of large muscle groups for relatively long periods of time, during which maximal adjustment of the cardio respiratory system are necessary as in sustained swimming, climbing and the like. When the many muscles are worked hard, the circulatory and respiratory systems are heavily loaded because these two systems directly support the muscle work. (Gianetti, G et.al. 2008).

Psychology of sports is an application of psychology in the field of sports and games. In other words, it is the psychological approach to sports and games, in order to make them efficient, fruitful and interesting (Mohan, J. et.al. 1986). In psychology, as well as other social and behavioral sciences, aggression refers to behavior between members of the same species that is intended to cause pain or harm. Aggression takes a variety of forms among humans and can be physical, mental, or verbal. There are two broad categories of aggression. Empirical research indicates that there is a critical difference between the two, both psychologically and physiologically. The endured physical activities not only increase the endurance of the school students, but also improve the physiological and psychological levels of the students.

Researches has proved that development of physical, physiological and psychological levels of the school students depends on the physical education and sports programmes offered to them. Number of factors, such as play ground facilities, availability of faculty, socio-economic conditions, surface of the land, environment differs from hill area to coastal area, rural area to urban area and urban area to semi urban area, which has telling effect on the participation of the students in the physical education and sports programmes. These differences in imparting and

learning processes have definite effect on the motor fitness, especially cardio vascular endurance and psychological conditions, especially aggression of the schools students. The investigator was interested to find out the differences existed on cardiovascular endurance and aggression among the rural area, urban and semi urban area school boys, which would be helpful to appreciate and to suggest suitable ways and means to improve physical education and sports programmes in these areas.

Armstrong and Welsman (2006) reviewed the reviews the habitual physical activity of children and adolescents from member countries of the European Union in relation to methods of assessing and interpreting physical activity. The physical activity levels of both genders are higher during childhood and decline as young people move through their teen years. Physical activity patterns are sporadic and sustained periods of moderate or vigorous physical activity are seldom achieved by many European children and adolescents. Expert committees have produced guidelines for health-related physical activity for youth but they are evidence-informed rather than evidence-based and where there is evidence of a relationship between physical activity during youth and health status there is little evidence of a particular shape of that relationship. The number of children who experience physical activity of the duration, frequency and intensity recommended by expert committees decreases with age but accurate estimates of how many girls and boys are inactive are clouded by methodological problems. If additional insights into the promotion of health through habitual physical activity during youth are to be made, methods of assessment need to be further refined and recommended guidelines re-visited in relation to the existing evidence base.

Liou and Chiang (2004) investigated levels of physical activity among children and examine their rates of compliance with various international recommendations. The sample was comprised 463 children (249 boys and 214 girls), aged between nine and twelve from four cities in Taiwan. Three-day Physical Activity Logs (3-d PAL) were used as the instrument to measure physical activity in the previous seven days. The results indicated that physical activity among the majority of children complied with the international recommendations. The only significant difference came in participation rates for vigorous physical activity among children of different ages and gender. The results provided important information for health policy in the field of children's physical activity. It was recommended for the setting up of national objectives for the physical activity of children and the conducting of a national surveillance study with a more precise and consistent measurement of physical activity for children to offer a comparable data in the future.

The review of related studies proved that there were researches done to compare physical fitness programmes on physical fitness, motor fitness etc generally and there was further scope for research in comparing the cardiovascular endurance and aggression of rural, urban and semi urban school boys.

## METHODS

Random group design was followed for this study. The present study was conducted on fifty urban school boys, fifty semi urban school boys and fifty rural school boys from Andhra Pradesh. The urban students were selected from different schools in Hyderabad, semi Urban school students were selected from outskirts Towns around Hyderabad in which more than 50,000 were living and rural boys were selected from rural areas where around 10,000 people are residing in Andhra Pradesh state. The subjects' age group is between 14 to 16 years. The subjects participated throughout the testing period and cooperated for the success of collection of necessary data. The subjects were tested on cardio vascular endurance and aggression. The cardio vascular endurance was measured using Cooper's 12 Minutes Run / Walk test and aggression was measured using standard questionnaire developed by Guru Pyari Mathur and Raj Kumari Bhatnagar (2004). The data collected on the variables from urban, semi urban and rural boys were compared using Analysis of Variance to test the significance of difference. In all cases 0.05 was fixed as level of required significance.

## RESULTS

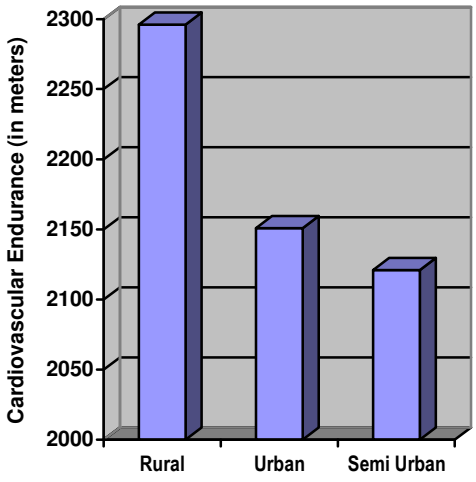
The obtained data was subjected to statistical treatment using ANOVA and the descriptive statistics are shown in Table I.

**Tab I: Descriptive Statistics – Mean, Standard Deviation and Range on Cardiovascular Endurance and Aggression**

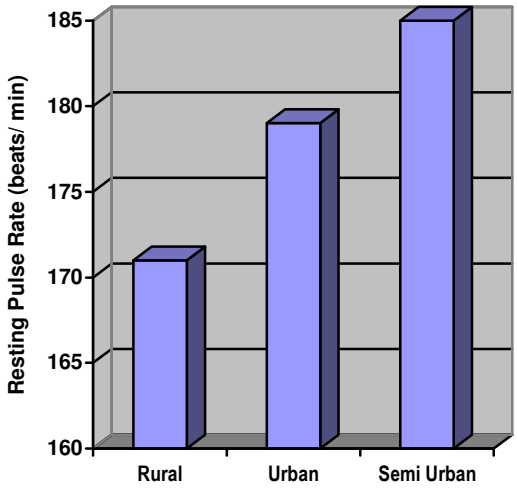
| Group | Mean | Std Deviation | Range | |
|---|---|---|---|---|
| | | | Minimum | Maximum |
| **Cardiovascular Endurance** | | | | |
| Rural | 2296 | ±184 | 2790 | 2100 |
| Urban | 2151 | ±215 | 2550 | 1860 |
| Semi-urban | 2121 | ±180 | 2500 | 1870 |
| **Aggression** | | | | |
| Rural | 171 | ±17 | 217 | 151 |
| Urban | 179 | ±19 | 225 | 154 |
| Semi-urban | 185 | ±15 | 213 | 108 |

The obtained mean values are presented through bar diagram for better understanding of the results presented in Table I.

**Comparision of Cardiovascular Endurance of the Subjects**




**Comparision of Aggression of the Subjects**



The obtained variables proved that there were differences in the means of the subjects on cardiovascular endurance and aggression. To test statistical significance, the data was subjected to statistical analysis using ANCOVA and the results presented in Table II.

**Tab II: Statistical Significance of the Differences among Swimmers, Sprinters and Rowers on Cardiovascular Endurance and Resting Pulse Rate**

| **Cardiovascular Endurance** | | | | |
|---|---|---|---|---|
| Source of Variance | Sum of Squares | Df | Mean Square | F |
| Between | 875068 | 2 | 437534 | 11.68* |
| Within | 5506882 | 147 | 37462 | |
| **Aggression** | | | | |
| Between | 4930.65 | 2 | 2465.33 | 8.36* |
| Within | 43350.84 | 147 | 294.90 | |

Table F-ratio at 0.05 level of confidence for 2 and 147 (df) =3.07.

* Significant

The significant result obtained on Cardiovascular Endurance and Aggression was further subjected to post hoc analysis to compare the paired means of significance among the groups in Table III.

**Tab IIIMultiple Comparisons showing Post Hoc Analysis on Cardiovascular Endurance among Swimmers, Sprinters and Rowers**

| **CARDIOVASCULAR ENDURANCE** | | | | |
|---|---|---|---|---|
| Mean Values of | | | MEAN DIFFERENCE | Reqd C.I. |
| Rural | Urban | Semi Urban | | |
| 2295.60 | 2150.80 | | 144.80* | 84.28 |
| 2295.60 | | 2120.60 | 175.00* | 84.28 |
| | 2150.80 | 2120.60 | 30.20 | 84.28 |
| **AGGRESSION** | | | | |
| 171.38 | 178.68 | | 7.30 | 8.62 |
| 171.38 | | 185.42 | 14.04* | 8.62 |
| | 178.68 | 185.42 | 6.74 | 8.62 |

***** Significant at 0.05 level.

## DISCUSSIONS

This research an attempt was made to find out the differences in the Cardiovascular Endurance and aggression among rural, urban and semi urban school boys. The results proved that, as shown in Table II, the obtained F ratio value on the scores of Cardiovascular Endurance 11.68 was greater than the required F table value of 3.07, which proved that there was a significant difference in Cardiovascular Endurance among rural, urban and semi urban school boys. The post hoc analysis (Table III) proved that rural boys in Andhra Pradesh are possessing significantly better cardio vascular endurance than urban and semi urban boys. Similarly the results presented in Table II proved significant differences in Aggression among rural, urban and semi urban boys. And the post hoc analysis results presented in Table III proved that semi urban boys are significantly more aggressive than rural boys. There was no significant difference between rural and urban boys; and urban and semi-urban boys.

Eisenmann et al., (2007) examined differences in cardiovascular factors across four cross-tabulated groups of cardiorespiratory fitness and body mass index in 8- to 18-year-old children and adolescents and found significant differences across groups. Singh and Das (1991) conducted a study to compare the physical fitness and selected physiological variables of sea

coast and high altitude living school students and concluded that the high altitude students demonstrated their superiority in cardio respiratory endurance. Thus, the theoretical foundations based on the previous researches proved that cardiovascular endurance may differ across groups of children and adolescents under which environment they are growing. Andhra Pradesh rural, urban and semi urban boys are grown up in distinctly different conditions and the availability of physical education and sports programmes, socio economic conditions, cultural background and ground facilities provided to them are differed. These differences created differences in their cardiovascular endurance and aggression. And the findings of this study are in agreement with the findings of previous studies.

## CONCLUSIONS

It was concluded that efforts may be made for uniform availability of physical education and sports programmes for the all round development of the students in Andhra Pradesh, particularly among urban and semi urban boys.

## REFERENCES


Armstrong N, and Welsman JR. (2006) "The physical activity patterns of European youth with reference to methods of assessment." **Sports Med.** 36(12):1067-86

Beets MW amd Pitetti KH. (2005). "Contribution of physical education and sport to health-related fitness in high school students.", **J Sch Health.** Jan;75(1):25-30

Eisenmann JC,et al., (2007) "Combined influence of cardiorespiratory fitness and body mass index on cardiovascular disease risk factors among 8-18 year old youth: The Aerobics Center Longitudinal Study." **Int J Pediatr Obes.** ;2(2):66-72

Gianetti, G., Burton, L., Donovan, R., Allen, G. Pescatello, L. S. (2008) "Physiologic and psychological responses of an athlete cycling 100+ miles daily for 50 consecutive days". **Curr Sports Med Rep**. 7: 343-347

Jitendra Mohan, et.al. (1986), Psychology **of Sports,** New Delhi : Friends Publication, P.67.

Koutedakis Y, and Bouziotas C. (2003). "National physical education curriculum: motor and cardiovascular health related fitness in Greek adolescents.". **Br J Sports Med.** Aug;37(4):311-4

Liou YM, and Chiang LC., "Levels of physical activity among school-age children in Taiwan: a comparison with international recommendations." **J Nurs Res.**;12(4):307-16.

Martin H. Anderson, et. al.,(1999) **Play with the purpose,** New York: Harper and Row publishers, P.11.

Mathur, G.P. and Bhatnagar, R.K. (2004), **Aggression Scale**, Agra, Rakhi Prakashan.

Singh and Das (1991), "Comparison of the physical fitness and selected physiological variables of sea coast and high altitude living school students", **Research Quarterly**, 62.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp99-101**
**Journal Impact factor 0.5190**

# Recent Methods in Teaching Physical Education through Technology

*** Dr.R. Sreenivas Reddy**
**** Prof. D. Sakriya**
*** Physical Director, University College, KakatiyaUnviersity, Warangal.**
**** Professor, Department of Commerce & Business Management & Secretary Sports Board, Kakatiya University, Warangal.**

The objective of this paper is to examine the recent methods adopted in teaching Physical Education. The Recent methods can be followed through Teleconferencing, Television, Internet, Facebook and Online education etc.

**Teleconferencing**

Teleconferencing can be defined in several ways but most people agree that it can be defined simply as "bringing people together without having to spend time and money on travel." Teleconferencing is a rapidly developing technology that has changed the way Physical Education teachers to teach physical education.

There are three types of teleconferencing (a) audio teleconferencing (b) audio graphics teleconferencing (c) video teleconferencing.

Audio teleconferencing provides the interactive element of the telephone. It is also the frequently used and most productive and inexpensive medium, which is why it is also called "phone meeting." It does not need any special equipment, other than the ordinary telephone.
Reasons for its widespread acceptance are:

- Easy to use-everyone can use a telephone
- Easily available-telephone are available anywhere.
- Easy to participate and join in from any telephone line in the world.
- Takes only a few minutes to set up a conference call.
- Costs little.

Audio graphics teleconferencing provides the facility to move text, computer-generated images, photographs and large files over ordinary telephone lines (like the internet). It is not as expensive as video conferencing but requires going to a location that has the equipment or requires making an investment in the equipment.

**Television**

Television is a powerful medium of communication. It is the audio visual medium. Its ability to transmit live events as they are going on makes it the most powerful medium for teaching the students of physical education. With teleconferencing, television can transmits things happening at more than one place at the same time. A news reader in Mumbai can take the audience to a view of what is happening in Australia or hold a live discussion with a reporter in New Zealand. With the advent of Cable TV and a variety of channels at the disposal of the student of Physical Education, TV, known as the small screen, has become the most commercial used channel for sports and games.

**Internet**

This is the most recent of all mediums and is most popularly used in today's globalized scenario though its use is still limited to the educated and computer friendly class of people. The website addresses to be visited are publicized through other media like magazines and newspapers. Internet is still in the process of being most widely used and a media for communication.

The following table 1 reveals the Internet user trends

**Table 1**
**Internet User trends**

| Subscriber base (in million) | 2010 | | 2011 | | |
|---|---|---|---|---|---|
| | QE Sept | QE Dec | QE March | QE June | QE Sept |
| **Internet (fixed line)** | 17.90 | 18.69 | 19.67 | 20.33 | 20.99 |
| Narrow band (less than 256kbps) | 7.59 | 7.7 | 7.79 | 7.98 | 8.16 |
| Broadband | 10.31 | 10.99 | 11.89 | 12.35 | 12.83 |
| **Wireless** | 274.05 | 332.43 | 381.4 | 346.67 | 373.84 |
| Minutes of usage/sub/month | **486.00** | **411.00** | **395.00** | **547.00** | **497.00** |

Source: Business line, January 11, 2012

**Face book**

Social networking giant Facebook has extended its Timeline feature to 'pages' hosted by the web site. The new feature is available for preview and is currently optional. 'Timeline', first introduced only for individuals, is a college of all the activities including sports and game shared on Facebook in a chronological order presented on the main page of a user profile.

Akin to the Timeline on people profiles on Facebook, new features for Pages will include displaying a 'Cover Photo' that captures the essence the brand and showcases their product/service.

With timeline activated, Page owners will no longer have the benefit of the customizable landing tab. The landing tab allowed them to control which feature visitors would first see when they visit the page. Users will first glance at Photos, Videos, Events and other customized apps instead. Facebook has automatically done away with the customizable 'landing tab' that a lot of business could design for their pages.

However, it has opened new avenues for customer/players/fans to get in touch with the company directly through messages. Where posts and updates were invariably displays and in chronological order, page admins can now choose a post and mark it as the top story on the page for a maximum of seven days. They can also highlight important stories and customize them to stretch across the breadth of the page consequently grabbing more eyeballs.

**Online Education Tools**

Online Education is the recent developments in the realm of tools and resources useful in teaching and learning endeavor.

**Educational videos**

Learning is undoubtedly more effective through visual interactive materials. Though traditional textbook continues to be a major educational resource, thanks to the net lecture videos are fast becoming an alternative learning tool.

As you may be aware, tens of hundreds of video tutorials on a variety of subjects are available. Brightstorm,[1] the service that offers several free videos on subjects such as science, mathematics, English and Physical Education is one of the good resources of this kind. In this regard, you may find a visit to the search directory 'watch-know' learn beneficial in locating appropriate educational videos.

**Khan Academy's impact**

The Khan Academy[2]is a wonderful educational resource containing concise educational videos on almost all topics including Physical Education.

The highlight of this project is its comprehensive nature. One can find videos that cover the entire spectrum of a subject – you can enter at a basic level and move over to more advanced topics. For instance, the mathematics section contains videos ranging from basic arithmetic to

calculus.Besides videos, Khan Academy now offers exercise modules and other self-paced learning tools as well.

The growth of Khan Academy, which has drawn the attention of stalwarts like Bill Gate[3]and organizations like Google[4]is certainly phenomenal. The impact of khan academy videos on the traditional pedagogic systems is yet to be seen.

It has led to an evaluation by educationists through experiments to compare theclassroom performance with and without khan videos.[5]

The success of the khan project, whose videos are created single-handedly by one person, offers us a few pedagogic wisdom bits or insights. A person, whose basics are strong, can learn any subject, gain expertise and pass on that knowledge to others with ease.

Short videos, focused solely on a topic, are more effective than longer ones. The khan videos are of short duration and this might be a factor behind making the project a runaway success.And, this is an instance of a valuable educational product created without adopting complex tools – khan academy videos are produced with the help of simple tools like smooth Draw and Camtasia studio.

It seems the success of khan academy has inspired some instructors to emulate its mode of production and lecture delivery style. The *YouTube*[6]channel,mathematical monk is an instance of this emerging trend. The site hosts videos on topics such as probability and machine learning.

The nature of the videos hosted on this site is similar to the ones available in khan academy – short duration videos produced with simple, tools like a pen tablet, smooth Draw and so on.

**Speakaboos**

Education does not mean learning core subjects alone. Along with those subjects the pedagogic / home environment should offer facilities that help kids learn life lessons too – like how to deal with an antagonistic schoolmate, how to develop positive thinking, leadership qualities and so on. Videos that facilitate such learning tasks are also in place. *Speakaboo*[7]is one such site that addresses this issue.

Teaching / learning projects that help you undertake online course on different subjects are also in place. Yet another service thriving in this segment is the *Alison* an online resource that offers courseware on a variety of topics for free.

**References**


1. http://www.brightstorm.com
2. http://www.hindu.com/2011/11/01/stories/01011015267100.htm
3. http://www.thegates-notes.com
4. http://www.project10tothe100.com/index.html
5. http://blendmylearning.com
6. http://www.youtube.com
7. http://www.speakaboos.com

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp102-104**
**Journal Impact factor 0.5190**

# Competitive Communication Skills In Sports

**Suranjita Khan[1] Santosh Kumar[2] Lalit Mohan Tiwari[3]**
**[1] Research Scholar Department of Physical Education University of Kalyani, Kalyani West Bengal**
**[2] Assistant Professor DSB Campus Kumaun University Nainital Uttarakhand India**
**[3]Research Scholar Department of Physical Education Punjabi University Patiala, Punjab India (drlalittiwary@gmail.com)**

**ABSTRACT**
Communication is a skill that is often overlooked in sports performance. Indeed, when we are in the presence of others we are constantly communicating, whether we like it or not. What we don't say often says more than what we do say, and we sometimes say one thing and mean another. Verbal communication occurs when we talk, listen, shout, sing, write or read. Non-verbal communication occurs through facial expression and body language, and can be very powerful. We've all noticed when someone says one thing and means another. That person has failed to realize that while they verbally communicating one thing, they are sending out a powerful and contradictory message when they quickly cough or shift their eyes from yours. Communication is the art of successfully sharing meaningful information with people by means of an interchange of experience. Coaches wish to motivate the athletes they work with and to provide them with information that will allow them to train effectively and improve performance. Communication from the coach to athlete will initiate appropriate actions. This however, requires the athlete to receive the information from the coach but also to understand and accept it. Coaches should develop their verbal and non-verbal communication skills. Ensure that they provide positive feedback during coaching sessions. Give all athletes in their training groups' equal attention. Communicate as appropriate to your athlete's thinking and learning styles. Ensure that they not only talk to their athletes but they also listen to them as well.Improved communication skills will enable both the athlete and coach to gain much more from their coaching relationship.

**Key Words: communication, competitive sports, athlete, coach.**

## INTRODUCTION

Today, in society everywhere communication plays a very important and vital role. Why we have need of communication? It won't be exaggerated to say without communication there is nothing possible. Communication is a skill that is often overlooked in sports performance. Indeed, when we are in the presence of others we are constantly communicating, whether we like it or not. What we don't say often says more than what we do say, and we sometimes say one thing and mean another

**OBJECTIVE:** ToUnderstand, assess and develop communication skills andUtilize motivation and positive reinforcement for successful goal setting

## WHAT IS COMMUNICATION

Communication is the art of successfully sharing meaningful information with people by means of an interchange of ideas and experiences. Communication is one the most esoteric of sciences known to man**.** The ability to communicate is the primary factor that distinguishes human beings from animals. And it is the ability to communicate well that distinguishes one individual from another.

**SPORTS AND COMMUNICATION**

Sports are the field of relationship, where coaches & athletes have to maintain so many relationships. Elite athletes have to communicate with his team mates, coaches, media personnel, family, friends, fans scientists, official's competitor and etc. In the same way coaches also have to communicate with so many people.The Most important communication takes place between coaches & athletes. These are the two persons, who interact most than others. The performance of sports also depends essentially how the role of communication is enacted. Hence there is need of proper communication skills between the coaches & athletes, because communication is often lacking and can be easily misinterpreted. Lack of communication may leads to several conflicts, disputes and problems.

**WHAT IS COMMUICATION SKILL?**

It is a set of skills that enables a person to convey information, so that it can be received and understood easily. Good communication skills in sports are among the most important ingredients contributing to the performance and growth of exercise and sport participants. The purposes of communication are persuasion, evaluation, information, motivation and problem solving.

**TYPES OF COMMUNICATION:**

Communication can occur via various processes and methods and depending on the channel used and the style of communication there can be various types of communication. Based on the channels used for communicating, the process of communication can be broadly classified as-

**1. Verbal communication -** It occurs when we talk, listen, Shout, Sing with or read. **2. Non verbal communication-** It is usually understood as the process of communication through sending and receiving wordless messages. Such messages can be communicated through gesture; body language or posture; facial expression and eye contact.

**THE COMMUNICATION FLOW**

The coach has a thought that he/she wants to tell the athlete.
The coach translates the thought into a message.
The coach conveys the message — verbally or nonverbally.
The athlete receives the message.
The athlete interprets the meaning of the message.

The athlete responds inwardly and/or outwardly to the message.

Sometimes this flow is smooth and sometimes it's not. It is based on the clarity of the message and the athlete's understanding of the messageCoaching is communication. Every act of coaching requires you to communicate. As a coach you must be able to communicate effectively in countless situations.

**EFFECTIVE COMMUNICATION**

Good communication is as stimulating as black coffee, and just as hard to sleep after. A communication can be said successful only if we are able to convince people for whatever we wanted to convey. Depending on the environment and circumstances the effectiveness of speech changes. It is therefore a dynamic interaction both affecting and being affected by many variables. Before communicating with athletes, effective communication coaches should consider:
why and who they want to communicate
where and when the message could be best delivered
what is it they want to communicate and how they are going to communicate the information

**SIX ELEMENT OF EFFECTIVE COMMUNICATION**

| | |
|---|---|
| Clear | Ensure that the information is presented clearly |
| Concise | Be concise, do not lose the message by being long winded |
| Correct | Be accurate, avoid giving misleading information |
| Complete | Give all the information and not just part of it |
| Courteous | Be polite and non-threatening, avoid conflict |
| Constructive | Be positive, avoid being critical and negative |

**BARRIER TO EFFECTIVE COMMUNICATION**

There are a wide number of sources of noise or interference that can enter into the communication process.
Language,defensiveness, distorted perceptions, guilt, project, transferenceetc.
misreading of body language, tone and other non-verbal forms of communication
noisy transmission (unreliable messages, inconsistency)
receiver distortion: selective hearing, ignoring non-verbal cues ,power struggles
self-fulfilling assumptions ,distrusted source, erroneous translation, value judgment, state of mind of two people
Perceptual Biases.,Interpersonal Relationships ,Cultural Differences

**SOME FINAL THOUGHT ON COMMUNICATING**

KISS (Keep It Short and Simple)
Emphasize praise and rewards to strengthen desired behaviors.
Positive communication helps athlete value themselves as individuals, athletes.
Be aware of the emotion expressed in your messages to athletes.
Set realistic goals about athletes' athletic performance abilities as well as their emotional and social behavior. Be consistent ,Keep your word.Be as good as your word.
When coaches provide information to the athletes that will allow them to take actions of effective change, it is important that they provide the information in a positive manner. Coaches' credibility is the single most important element in communicating effectively with athletes.

**WITH WHOM DO ATHLETES COMMUNICATE?** Athletes in different sports have to communicate with many different people in different ways. The elite athlete might communicate very openly and emotionally with a coach, say, that they have worked with for a long time – even more so than with their own parents. The same athlete may have to hold formal, contractual discussions or conduct press conferences. The variety of different people that an athlete's may need to communicate with is great, and include coaching staff, the media, fans, team-mates, scientists, family, officials (umpire/referee) and competitors.

**WHEN DO ATHLETES COMMUNICATE?**Apart from "all of the time", of course! There are times at which effective communication are key. These include:**In training –** getting more out of your coaching sessions, letting your coach know when you are experiencing difficulty and helping team-mates out with their training.**Before competition–** making sure your coach knows whether preparation is going well; making sure your coach's pep talk is helping you.**In competition –** using signals and code to communicate tactics, to help team-mates perform, to keep the team together, to request help; and**After competition –** feeding back on how you felt to your coach, asking for feedback from your coach, seeking emotional support; dealing with family & other important people.

**CONCLUSION:Coaches should:**Develop their verbal and non-verbal communication skills.Ensure that they provide positive feedback during coaching sessions.Give all athletes in their training groups equal attention.Communicate as appropriate to your athlete's thinking and learning styles.Ensure that they not only talk to their athletes but they also listen to them as well.Improved communication skills will enable both the athlete and coach to gain much more from their coaching relationship.

**REFERENCES**

Dayton, D. (2007). How sport and business connect. *Coach and Athletic Director, 77(2)*,34-35. Retrieved from Academic Search Complete database.
Diaz, S. (2006). Communication strategies of division I football coaches during winter
strength and conditioning drills. *Coach and Athletic Director, 75(9)*, 34-38. Retrieved from Academic Search Complete database.
Hoch, D. (2001). Communicating with your coaching staff. *Coach and Athletic Director,70(9),* 4. Retrieved from Academic Search Complete database.
Mahoe, S. (2007). Five ways to improve communication with your players. *Coach and Athletic Director, 76(7)*, 44. Retrieved from Academic Search Complete database.
Parry, D. M. (1959). The football coach as a speaker. *Today's Speech, 7(2),* 9-17.
Turman, P. D. & Schroadt, P. (2004). New avenues for instructional communicationresearch: Relationships among coaches' leadership behaviors and athletes'affective learning. *Communication Research Reports, 21(2),* 130-143.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp105-107**
**Journal Impact factor 0.5190**

# Emotional Intellegence Among Sports Women

**Dr. Yeshwant Kumar**
Associate professor,
Veterinary College,
College BIDAR

**Dr. Anil Kumar Edward**
Physical Director
Govt. First Grade
GANGAVATI

edward.sanil@yahoo.com KARNATAKA

**Introduction**

Although emotional intelligence is still a relatively new term in sport, it certainly is not a new concept. For years we have marveled at how the great athletes are able to "switch themselves on" to create amazing performances with incredible consistency. We would describe them as being composed, mentally tough, having the right psychology, a great sports mind, emotionally controlled or simply determined or focused. Today we recognize these athletes as having high levels of competency in the area of emotional intelligence.

**Emotional Intelligence:**

Emotional Intelligence is a relatively recent behavioral model, rising to prominence with Daniel Goleman's (1995) book called 'Emotional Intelligence'.Emotional Intelligence is an important consideration in human resources planning, job profiling, recruitment interviewing and selection, management, customer relations, customer service and in general, day to day life.

David Wechsler defined intelligence as "The aggregate or global capacity of the individual to act purposefully, to think relatively and to deal effectively with his environment". According to Salovey and Mayer (1990) Emotional Intelligence consisted of adaptive abilities:

a) Appraisals and expression in the self as well as others either through verbal or non-verbal components, in relation with perception and empathy

b) Regulation of emotions in the self and others;

c) Utilization of emotion that includes flexible planning, creative thinking, redirected attention and motivation.

Emotional intelligence is concerned with the awareness, appraisal and utilization of emotions for individuals and for teams. Emotional intelligence can be altered through training that focuses on the role of emotions in our behaviour. Emotions such as anxiety can be positive and negative. It is the combination of emotions, and the thoughts that are linked with these combinations that determines whether these emotions are motivational or demotivational. In a recent study, we looked at emotional states associated with success and failure in sport competition and academic examinations (3). The expansion of sport science as an academic study means that growing numbers of students experience the dual stresses of taking examinations and participating in competition. The results of this study are depicted in figure 1 which shows that a) emotions are strongly associated with success, and b) emotional profiles linked with success are somewhat different between sports competition and an examination.

Emotional intelligence can be summarised thus:

The ability to recognise different emotional states;

Assessing the effects of emotions on subsequent behaviour;

The ability to switch into the best emotional state to manage a particular situation.

In a recent study, we looked at emotional states associated with success and failure in sport competition and academic examinations (3). The expansion of sport science as an academic study means that growing numbers of students experience the dual stresses of taking examinations and participating in competition. The results of this study are depicted in figure 1 which shows that a) emotions are strongly associated with success, and b) emotional profiles linked with success are somewhat different between sports competition and an examination.

**Limitations**

The study is limited to effect of Emotional Intelligence among Sports women.

The study is limited to test on among Sports women of Veterinary College, Bidar.

Further, the study is limited to age and social-demography factors of Sports women.

**De-Limitation**

The study was delimited to age and social-demography factors of Sports women.
Further, the study was delimited to Sports women of Veterinary College, Bidar.
The study was further delimited to find the effect of Emotional Intelligence among sports women.

## Methodology

### Statement of the Problem

To study the Emotional Intelligence among Veterinary College, Bidar sports women.

### Objectives of the Study

To examine the level of Emotional Intelligence among sports women.
To know the role of social-demography on Emotional Intelligence among sports women.
To know the age factors influence on Emotional Intelligence among sports women.

### Hypothesis of the Study

There would be a significant influence of Emotional Intelligence among sports women.
There would be a significant role of social-demographic factors on Emotional Intelligence .
There would be a significant effect age factors influence on Emotional Intelligence .

### Sample:

The present investigation pertaining to **"Study the Emotional Intelligence of sports Women"** is in the framework of ex-post-facto research. Keeping the objectives in view, appropriate research design is adopted. The sample for the study is drawn from the women sports persons of Veterinary College, Bidar. 20 players were administered Emotional Intelligence scale to assess the differences.

### Collection of Data:

The data were collected from the Women sportsmen of Veterinary College, Bidar, who were participated in intercollegiate competition of different sports and games they were administered the **Emotional Intelligence** scale during the sports competitions. Following tools were used in this present study,

**Personal Data Schedule**: This is framed to collect information regarding the personal and socio demographic status of the sample.

**Emotional Intelligence Scale** (Short Form): This scale is developed by **Goleman (1995)** which consists of 30 items in its short form version which is used in the present study. This consists of 7 alternative responses. The scoring is done as per manual. The reliability and validity of the scale is satisfactory and adequate.

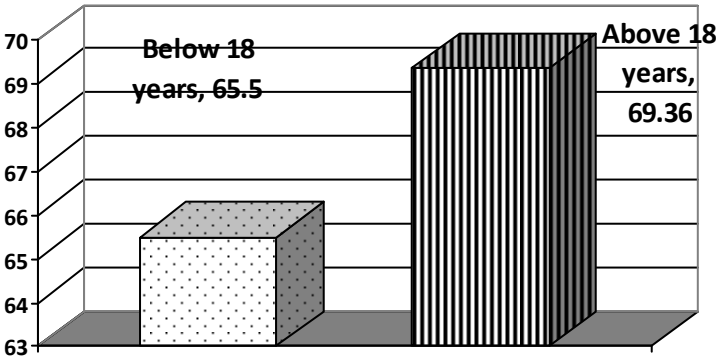
**Statistical procedure:** Keeping the objectives of the study in view, the following statistical techniques were applied. Mean, SD.and t-value

### Analysis and Interpretation

In this present study, an attempt is made to examine the extent to which the respondents differ on emotional intelligence levels. This can be achieved by computing the mean scores of emotional intelligence on two sample sub-groups of age and family income. The data are arranged and presented in the following tables.

**Table 1:Mean SD and t-values of Emotional Intelligence in Age (N=20)**

| Category | M | SD | t-value |
|---|---|---|---|
| **Below 18 years** | 65.5 | 7.10 | 1.97* |
| **Above 18 years** | 69.36 | 5.08 | |




***significant at 0.05 level**

Table-1 presents the data of two age group respondents in respect of emotional intelligence – a psychological variable. Again both age groups (N=20) are divided into two categories – above 18 years and below 18 years. As per the norms of the emotional intelligence scale one who score above high is categorized as belonging to high emotional intelligence while one who scores low is considered to be of low emotional intelligence.

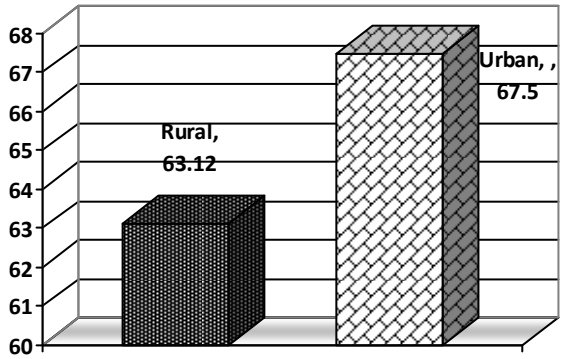
It can be observed in table- that higher age group has scored significantly higher (69.3) than the lower (65.5) and the t-value 1.97 which is significant at 0.05 level. This reveals that sports women of two age groups differ in emotional intelligence. This explains that sports women with higher age have more emotional intelligence, when compared to lower age respondents.

**Table 2**

**Mean SD and t-values of Emotional Intelligence in social-demographic factor (N=20)**

| Category | M | SD | t-value |
|---|---|---|---|
| **Rural** | 63.12 | 6.12 | 2.20** |
| **Urban** | 67.5 | 6.80 | |

****significant at 0.01 level**




It can be seen through table-2 that the respondents of Urban sports women group have scored a mean of 67.50 in emotional intelligence while the Rural sports women group have scored a mean 63.12. The t-value is 2.20 which is significant 0.01 level. This shows that there is significant difference in emotional intelligence level of sports women in relation to their social-demographic factor. Thus Urban sports women are more emotional intelligence than the Rural sports women sample.

## CONCLUSIONS

The above 18 age sports women have high emotional intelligence than the below 18 age.

The Urban sports women have high emotional intelligence than the Rural sports women.

## RECOMMENDATIONS

Large sample need to be taken for the effective generalizations about the findings of the study.

Studies should be conducted on different age groups.Comparative study among athletes and non-athletes should be conducted.There is a need to conduct further research on other variables like anxiety, cognitive competence, extraversion, neuroticism and attitude of sportsmen.

The demographic factors like sex, level of education and family income need to be considered by the future research studies.

## References

Journal of Vocational Behaviour 2004: 65, 71-95.

Mood and human performance: Conceptual, Measurement, and Applied issues. Nova Science Publishers 2006: 1-35.

Journal of Sports Sciences: 2005; 23, 1254-1255.

Tuning up performance – music and video as ergogenic aids. Peak Performance April 2006; issue 228: 5-7 Electric Word

Hales, R., & Travis, T.W. (1987). Exercise as a treatment option for anxiety and depressive disorders. Military Medicine,

Katon, W., & Schulberg, H. (1992). Epidemiology of depression in primary care. General Hospital Psychiatry, 14, 237

Kelley, G., & Tran, Z.V. (1995). Aerobic exercise and normotensive adults: A meta-analysis. Medicine and Science in Sports and Exercise, 27(10), 1371–1377.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp108-110**
**Journal Impact factor 0.5190**

# The Influence of Circuit Training for development of Endurance among University Hockey players of Andhra Pradesh

**Mr.C.Rajan,Physical Director**
**Anurag College of Engineering (JNTUH), Ghatkesar, Aushapur.&**
**Research Scholar JNTU(H).**
**Prof. P.Venkat Reddy**
**Dean, Faculty of Education, Osmania University, Hyderabad**

**Abstract:**
Circuit training is a form of conditioning combining resistance training and high-intensity aerobics. It is designed to be easy to follow and target strength building as well as muscular endurance. It was first proposed in the late 1950s as a method to develop general fitness by Morgan and Anderson a circuit format of nine to 12 stations. The initial routines were arranged in a circle, alternating between difference muscle groups by allowing only a short rest interval of 30-90 seconds, without recovery and with recovery between the exercises. Circuit Training is a form of Strength and endurance training that can improve strength, speed and endurance. The Purpose of the the present study to find out the effect of circuit training for the development of endurance among University Hockey Male players between the age group of eighteen to twenty one years.The sample for the present study is forty University Male Hockey players from various colleges of Osmania University in Andhra Pradesh. The experimental group is 20 University male Hockey players and controlled group is 20 University Hockey players. The six weeks of training were given to the experimental group which consists of circuit training on alternate days i.e. three sessions per week and controlled group were given general training. 12 Min Run Cooper Test were used for Pre Test and Post Test for both the experimental and controlled group to find out the effect of circuit training for development of endurance.This study shows that due to the Circuit Training the experimental group has shown vast improvement compare to the controlled group in Pre Test and Post Test results.It is concluded that due the Circuit training there will improvement of endurance among University Hockey players of Andhra Pradesh.

**Key Words:** Resistance training,strength, endurance etc.

**Introduction:** Endurance like strength is a conditional ability. It is primarily determined by energy liberation process. The ability of the human body to maintain a certain level of energy production forms the physiological basis of endurance. Endurance is directly or indirectly of high importance in all sports. Harre (1986) defines endurance as the ability to resist fatigue. Endurance is the ability to do sports movements with the desired quality and speed under the conditions of fatigue.
Circuit training is a very popular and effective variation for the improvement of endurance. In circuit training several exercise are done one after the other. Completing of one set of each exercise in rotation is called one round. There are normally three or more rounds in circuit training. In circuit training there are generally 5-12 exercises. Circuit training is a form of conditioning combining resistance training and high-intensity aerobics. It is designed to be easy to follow and target strength building as well as muscular endurance. It was first proposed in the late 1950s as a method to develop general fitness by Morgan and Anderson a circuit format of nine to 12 stations. The initial routines were arranged in a circle, alternating between difference muscle groups by allowing only a short rest interval of 30-90 seconds, without recovery and with recovery between the exercises. Circuit Training is a form of Strength and endurance training that can improve strength, speed and endurance
A good circuit training course works the different sections in the body individually. An example of a circuit may be of the following exercises.
**Upper-body**:Press ups,Bench dips,Pull ups,Medicine ball ,chest pass,Bench lift and Inclined press up

**Core & trunk**:Sit ups (lower abdominals),Stomach crunch (upper abdominals),Back extension chest raise

**Lower-body**:Squat jumps,Compass jumps,Astride jumps,Step ups,Shuttle runs,Hopping shuttles Bench squat
**Total-body**:BurpeesTreadmills.Squat thrusts,Skipping

Sample of Circuit Training Exercises.

**Objectives:**
1.To study the effect of circuit training for development of endurance.
.
**Research Hypothesis**
1.It is hypothesized that Circuit Training will have the effect for development of endurance.
**Experimental Design:**
The sample for the present study is forty University Male Hockey players from various colleges of Osmania University in Andhra Pradesh. The experimental group is 20 University male Hockey players and controlled group is 20 UniversityMale Hockey players. The six weeks of training were given to the experimental group which consists of circuit training on alternate days i.e. three sessions per week and controlled group were given general training.
**Research Methodlogy:**
The 12 Min Cooper Test were used for Pre Test for Experimental Group and Controlled Group and results was recorded.The controlled group was given the general training**.**The 6 weeks training were given to Experimental Group which consists of Circuit Training on alternate days.The Circuit Training includes general exercises which is done through continous,interval and repetition method for development of endurance.The Cooper Test 12 Min Run is used to assess the aerobic endurance .After Six weeks Training the Post Test were conducted experimental group and controlled group.
**RESULTS :**
This study shows that due to the Circuit Training the experimental group has shown vast improvement compare to the controlled group in Pre Test and Post Test results. Circuit training is well-suited for developing strength endurance or local muscular endurance. It is less suitable for building muscle bulk and despite some potential strength gains, circuit training is going to provide

less results in the way of maximal strength than outright The duration of some circuit training stations can be in the region of 45 to 60 seconds, and in some cases as long as two minutes. These circuits typically mean that the number of repetitions performed on each station is relatively high, putting each exercise further towards the endurance end of the intensity continuum. Those wishing to optimize increases in strength or muscle bulk can reduce the number of repetitions performed and increase the weight to be lifted or increase the intensity, when hydraulics or elastics are used. On the other hand, longer station length is quite appropriate for any aerobic stations included in the circuit. Station times can be reduced to 75 or 100 seconds when all of the participants have an adequate level of experience. Reduced station times will encourage the participants to lift heavier weights, which means they can achieve overload with a smaller number of repetitions: typically in the range of 25 to 50 depending on their training goals.

In this study due to the Circuit Training the experimental group has increased in endurance compare to Controlled group. Hence Circuit Training is useful for development of endurance along with the strength and all body fitness.

**Discussion:**

The Table No.1 showing the Mean,S.D.Values obtained by Experimental Group and Controlled Group in Pre – Test. There is difference 0f 98.25 Meters among the performance of both groups in Pre Test.

| Pre Test(Mtrs) Results of 12 min Cooper Test | N | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|
| Experimental Group | 20 | 3041.75 | 219.71 | 49.13 | 1.69453 | 38.00 | 0.10 |
| Controlled Group | 20 | 2943.50 | 137.71 | 30.79 | | | |

The Table No.2 is showing the Mean,S.D.values obtained by Experimental Group and Controlled Group in Post Test. Due to Interval Training given to Experimental group there is the difference of 420.50 M between Experimental Group and Controlled Group in Post Test as compared to 98.25 M in Pre Test.

| Post Test(Mtrs) Results of 12 min Cooper Test | N | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|
| Experimental Group | 20 | 3325.50 | 238.89 | 53.42 | 6.440721 | 38.00 | 0.00 |
| Controlled Group | 20 | 2905.00 | 167.87 | 37.54 | | | |

Table No.3 is showing the Pre-Test slight difference in performance of experimental and controlled group and in Post Test there is a vast difference in Performance of experimental and controlled. The Experimental group has improved a lot due to Circuit Training upto 283.75 Meters between Pre Test to Post Test. Due to the GeneralTraining the Controlled Group Performance has reduced to 38.50 Meters between Pre Test to Post Test.

| GROUP | Results of 12 min Cooper Test | Mean | N | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| Experimental Group | Pre Test(Mtrs) | 3041.75 | 20.00 | 219.71 | 49.13 | -15.82 | 19.00 | 0.00 |
| | Post Test(Mtrs) | 3325.50 | 20.00 | 238.89 | 53.42 | | | |
| Controlled Group | Pre Test(Mtrs) | 2943.50 | 20.00 | 137.71 | 30.79 | 2.35 | 19.00 | 0.03 |
| | Post Test(Mtrs) | 2905.00 | 20.00 | 167.87 | 37.54 | | | |

**Conclusions:** It is concluded that due to the circuit training exercises there is a improvement of endurance among University Male Hockey Players.

**Suggestions:** It is suggested that Circuit Training exercises can be included in regular schedule of Male Hockey Players for improvement of endurance.

**References:**

Science of Sports Training, 1991, Hardayal Singh.
Kraviz, Len (1996-00-00). New Insights of Circuit Training. University of New Mexico. Retrieved 2006-11-16.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp111-116**
**Journal Impact factor 0.5190**

# Comparison of speed and strength movements in school children

**Dr.P.Johnson**
**Assistant Professor, University College of Physical Education & Sports Sciences, Acharya Nagarjuna University, Nagarjuna Nagar, Guntur, A.P., India**

**Ch. Krishna Reddy**
**Doctoral Research Scholar, Acharya Nagarjuna University, Nagarjuna Nagar, Guntur, A.P. India.**

## ABSTRACT

The authors selected to understand and analyze the independent motor ability components among the male school children from basing on the age groups 8-10 years, 10-12 years, 12-14 years and 14-16 years. We have taken 200 students with 50 students in each group as sample for the present study. To measure the speed and strength, the investigators selected the tests like 20 yards shuttle run and Medicine ball throw, respectively, was conducted. The data analyzed with Analysis of Covariance (ANCOVA) taking the pre-test and post-test scores of motor ability components of the individuals to know the significant difference among the four groups. It is concluded that (i) 10 to 12, 12 to 14 and 14 to 16 years age children groups experienced significant improvements in speed factor of motor ability, when compared to 8 to 10 years age group children but there was no significant improvements among these three groups. (ii) to 16 and 12 to 14 years age group children experienced significant improvements when compared to the 8 to 10 and 10 to 12 years age groups children in the strength factor of motor ability due to more of physical maturation.

## INTRODUCTION

An individual must possess motor fitness to suit the physical activities and complex motor movements to participate more easily and to have graceful and smooth movements while executing various skills of games. The involvement of motor cortex and motor neurons and other sensory apparatuses is the main concept of motor fitness and hence the major and important component is neuromuscular co-ordination component. But, to execute the desired motor acts with sufficient grace and skill, an individual should also possess optimum amount of motor fitness components like speed and strength. Parallel development of physical fitness and motor fitness is highly essential for a child to become a prospective high achiever in the desired sport or physical exercise or to develop an inherent aptitude towards better Physical culture. Better grace and rhythm in various complex skills ensures confidence among the children to participate comfortably and confidently in further physical activities to promote themselves into better sports persons or at least in to a better physical fitness and health seekers.For being physically fit to participate in basic and vigorous movements, the individuals need to possess the qualities like speed, strength, endurance, flexibility and coordination. At the same time involving in physical activities will improve the individual's status of physical fitness. But, to be healthier and to lead disease free quality life, an individual should also possess other components like cardio-respiratory, and circulatory endurance, and ideal body composition. This new concept is now termed as Health Related Physical Fitness. The health related physical fitness, which includes the components of muscular strength; muscular endurance, cardio respiratory endurance, flexibility and ideal body composition can be developed with improvements in general physical fitness. In this pursuit, the physical educationists are interested to know the fitness concepts that are useful for maintaining good health and posture since childhood and also useful for producing

fine skills to participate and excel in sports competitions. For both these purposes the fitness is very essential. The fitness is identified as physical fitness. But, since the involvement in fitness programs requires motor fitness at optimum levels to be able to participate in various sporting skills. The motor fitness is also an important prerequisite to establish oneself as an outstanding sportsperson with outstanding complex skill prospectively. Improvement in general physical fitness and also the health related physical fitness can be attained by involving in various fitness program like jogging, dancing, participating in athletics, participating in various games activities etc. But, to participate in various physical skills, an individual's motor fitness levels should be optimum to suit the movements selected. The motor fitness demands maturation and consolidation of motor ability components. The parallel development of Motor fitness and Physical fitness is highly essential at the developing age. This ensures the child to become prospective skilled sportsperson and also highly fit individual. The present study would bring some constructive evidence, on the impact of kinesthetic sense on the movement and motor performance enrichment.The study provides knowledge on the development patterns of the motor ability and its related concepts, especially with relation to the age of the subjects.The study will initiate more such researches and can promote core interest in the domain of motor performance and its related topics, especially of the motor ability of the individuals. The purpose of the study was to compare and analyze on responsiveness in motor ability individual components in response to the selected physical movements, among the male school children in the age groups of 8 to below 10 years, 10 to below 12 years, 12 to below 14 years and 14 to below 16 years, and to find out if there existed any difference on the selected criterion variables.

**REVIEW OF LITERATURE**

Salonikidis K et al. (2008) aimed to diagnose the presence of laterality in tennis lateral movements and to compare the effects of ply metric training (CT) on performance in tennis-specific drills training (TDT), and combined training (CT) on performance in tennis-specific movements and power/strength of lower limbs. Sixty–four novice tennis players (21.1 +/- 1.3 years) were equally (n=6) assigned to a control (c), PT, TDT, or CT. Training was performed 3 times/ week for 9 weeks. Testing was conducted before and after training for the evaluation of reaction time (single lateral step), 4-m lateral and forward sprints, 12-m forward sprints with and without turn, reactive ability, power, and strength. There was a significant difference in lateral speed (side-steps) between the 2 sides ($P<0.05$). PT, TDT or CT improved the 4m lateral and forward sprints ($P<0.05$), PT and CT improved also the reaction time of the "slow" side ($P<0.05$), where as TDT and CT improved the 12- m sprint performances with and without turn ($P<0.05$). Power and strength improved in most tests PT and CT. Lateral and forward sprints were correlated ($r= - 0.50$ to $– 0. 75$: $P<0.05$) with power/strength. In conclusion, PT improved fitness characteristics that rely more on reactive strength and powerful push-off of legs such as, lateral reaction time, 4-m lateral and forward sprints, drop jump and maximal force. TDT improved all 4-m and 12-m sprint performances, where as CT appeared to incorporate the advantage of both programs and improved most test items. Tennis coaches should be aware that each training regimen may induce more favorable changes to different aspects of fitness.Markovik G et al. (2007) evaluated the effects of sprint training on muscle function and dynamic athletic performance and to compare them with the training effects induced by standard plyometric training. Male physical education students were assigned randomly to 1 of 3 groups (SG; n=30), polymetric group (PG: n=39), or control group (CG: n= 33). Maximal isentric squat strength, squat-and countermovement jump (SJ and CMJ) height and power, drop jump from 30-cm height, and 3 athletic performance tests (standing long jump, 20-m sprint, and 20- yard shuttle run) were measured prior to and after 10 weeks of training. Both experimental groups trained 3 days a week : SG performed maximul sprints over distances of 10-50 m where PG performed bounce-type hurdle jumps and drop jumps. Participants in the CG group maintained their daily physical activities for the duration of the study. Both SG and PG significantly improved drop jump performance (15.6 and 14.2 %), SJ and CMJ height (approximately 10 and 6 %), and standing long jump distance (3.2 and 2.8%), whereas the respective effect sizes (ES) were moderate to high and ranged between 0.4 and 1.1. In addition, SG also improved isometric squat strength (10%: ES= 0.4) and SJ and CMJ power (4% : ES = 0.4, and 7%: ES= 0.4), as well as sprint (3.1%: ES = 0.9) and agility (4.3 %: ES = 1.1) performance. The authors concluded that short-term sprint training produces similar or even greater training effects in muscle function and athletic performance than conventional pylometric training. This study provides support for theuse

of sprint training as an applicable training method of improving explosive performance of athletes in general.

## METHODOLOGY

**Selection of the Subjects:**The research problem selected was to understand and analyze the independent motor ability components among the male school children from 8 to 16 years basing on the age groups, like 8 to 10 years, 10 to 12 years, 12 to 14 years and 14 to 16 years. The researcher needed four groups of school children. For this the researcher took the help of the Physical Education Teachers to randomly select and keep them ready for the testing protocol arranged by the research scholar. A total of 200 students with 50 students in each group representing four age groups were involved in the research study. So, there were four groups called 8 to below 10 years group (8 to 10 group for the study), 10 to below 12 years group (10 to 12 group for the study), 12 to below 14 years group (12 to 14 group for the study) and 14 to below 16 years group (14 to 16 group for the study) with 50 children in each group.The selection of the subjects was purely on the random basis without any bias, selecting from the attendance sheets of the students after consulting the concerned physical education teacher. For this purpose the whole Osmania university area was divided on geographical basis into four segments and from each segment fifty subjects were drawn as already explained earlier. To establish more reliability to the protocol the researcher requested the Physical Education Teachers not to involve those children, who are regularly participating in the sports activities and are in receipt of regular physical training, since their values may show some deviation and may cause some impact on the results of the study.

**Measurement of speed:**

Measuring the 60 yards dash performance:- The subject starts from a standing position at the signal to go, and runs as rapidly as possible to the finish line. One trial is given. The score is recorded in seconds to the nearest tenth of a second. The time begins when the command "go" is given. In 60 yards, there should be no appreciable time lag due to the relative speed of sound versus the speed of light.

**Measurement of Strength:**

By measuring the six pound medicine ball put. Directions: The subject stands between two restraining lines which are 15 feet apart. He then attempts to propel the medicine ball out as far as possible without stepping on or over the restraining line. He should hold the ball at the junction of his neck: and shoulder and thrust it away from his body at an angle of approximately 45 degrees. He is given three throws. The best of three throws is recorded. The distance is computed to the nearest foot. A throw in which the subject commits a foul is not scored. However, if all three trails are fouls, he should *try until he makes a fair put.*

**Statistical Technique Used:**

The researcher analyzed the data with help of Analysis of Covariance (ANCOVA) taking the pre-test and post-test scores of the motor ability components of the individuals to know if there was any significant difference among the four groups in the responsiveness on them because of the experimental movements.

## ANALYSIS AND INTERPRETATION OF DATA

*Analysis on the Speed factor of the Motor ability measured by 60 yard dash:*

The table I depicts that there is significant influence of the selected experimental variables on the Speed aspect of the Motor ability measured through the 60 yard dash, since the obtained F value i.e. 9.525 is more when compared to the table F Value of 2.66.

Table I: Analysis of Covariance for 60 yard dash

| Source | df | SS | MS | F | Cr.F |
|---|---|---|---|---|---|
| BG | 3 | 1.259365 | 0.419788 | 9.525195 | 2.66 |
| WG | 196 | 8.637985 | 0.044071 | | |
| Total | 199 | 9.89735 | | | |

Table II depicts the post-test means and also the adjusted post test means of the four experimental groups on the selected criterion variable i.e., 60 yard dash performance in seconds. Post-test values of the 60 yard dash performance of the four groups were 11.15 sec, 10.58 sec, 10.15 sec and 9.87 sec respectively for 8 to 10, 10 to 12, 1 to 14 and 14 to 16 years age children

groups. But the adjusted post test means over the baseline values and average of the baseline values for these groups were 10.57 sec, 10.43 sec, 10.38 sec and 10.37 sec respectively.
Adjusted post test means over the baseline values (Mx) indicated that the 14 to 16 yrs age children group showed lowest adjusted average for the 60 yard dash performance with 10.37 sec, followed by 12 to 14 yrs age group with 10.38 sec, followed by 10 to 12 yrs age group with 10.43 sec and followed by 8 to 10 age group with 10.57 sec.

Table II: Pretest, Posttest and Post test adjusted means for 60 yard dash

| Groups | N | MX | MY | MY.X |
|---|---|---|---|---|
| 8 to below 10 | 50 | 11.38 | 11.15 | 10.57424 |
| 10 to below 12 | 50 | 10.922 | 10.582 | 10.42883 |
| 12 to below 14 | 50 | 10.506 | 10.146 | 10.37668 |
| 14 to below 16 | 50 | 10.216 | 9.868 | 10.36626 |

Figure I

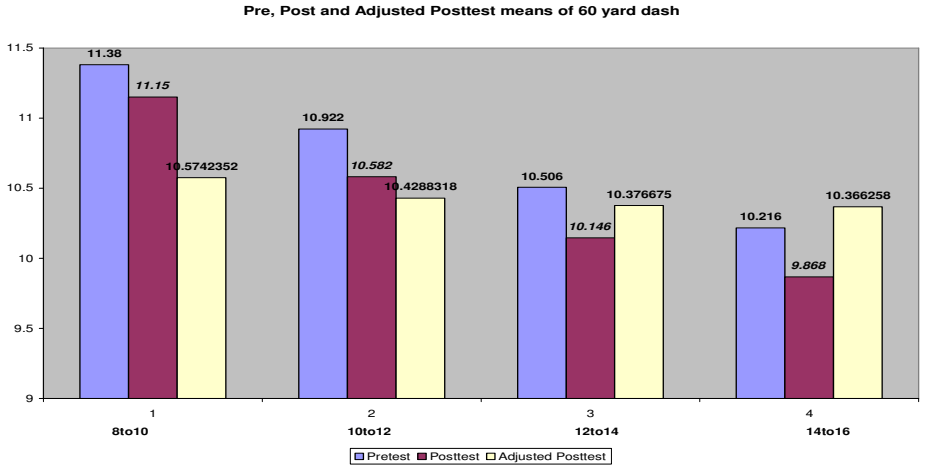



Table III: Scheffe's Post hoc individual comparison test for 60 yard dash
*Comparison Difference = 0.12*

| Groups & Values | 14 to below 16<br>10.36 | 12 to below 14<br>10.38 | 10 to below 12<br>10.43 |
|---|---|---|---|
| 12 to below 14<br>10.38 | -0.02<br>N. Sig | | |
| 10 to below 12<br>10.43 | -0.07<br>N. Sig | -0.05<br>N. Sig | |
| 8 to below 10<br>10.57 | -0.21<br>Sig | -0.19<br>Sig | -0.14<br>Sig |

To find out the source of significant difference and to find out which age group children showed more responsiveness on speed component of motor ability, Scheffe's Post hoc individual comparison test was conducted. As depicted in table III the four experimental groups were arranged in an ascending order as per their post test adjusted means of the criterion variable. If any two groups' difference is more than the comparative difference obtained i.e., 0.12, there is significant effect because of the experimental variables. The ordered difference between 14 to 16 years age children group and 12 to 14 years age children group (-0.02) and the ordered difference between 14 to 16 years age children group and 10 to 12 years age children group (-0.07) were not significant. It was also that the ordered difference between 12 to 14 years age children group and 10 to 12 years age children group(-0.05) was not significant indicating that the three groups viz., 14 to 16 years, 12 to 14 years and 10 to 12 years did not show significant training effect on speed factor of motor ability. The ordered differences between 14 to 16 group and 8 to 10 group (-0.21), between 12 to 14 group and 8 to 10 group (-0.19) and between 10 to 12 group and 8 to 10 group (-0.14) were all significant indicating that all the three groups experienced significant improvements in their speed factor when compared to the 8 to 10 years age children group.

Analysis on the Strength factor of the Motor ability measured by Medicine Ball Put:

The table IV depicts that there is significant influence of the selected experimental variables on the strength aspect of the Motor ability measured through the Six pound Medicine Ball Put, since the obtained F value i.e. 52.213 is more when compared to the table F Value of 2.66. Table V depicts the post test means and also the adjusted post test means of the four experimental groups on the selected criterion variable i.e. Medicine Ball put performance. 14 to 16 yrs age children group showed highest post test average of the Medicine Ball put with 29.98 ft, followed by 12 to 14 yrs age group with 26.57ft, followed by 10 to 12 yrs age group with 18.99 and followed by 8 to 10 yrs age group with 15.59 ft. Adjusted post test means over the baseline values (Mx) indicated that the 14 to 16 yrs age children group showed highest adjusted average of the Medicine Ball put with 24.98 ft, followed by 12 to 14 yrs age group with 24.87ft, followed by 10 to 12 yrs age group with 21.60 and followed by 8 to 10 yrs age group with 19.68 ft.

Table IV: Analysis of Covariance for Medicine Ball Put

| Source | Df | SS | MS | F | Cr.F |
|---|---|---|---|---|---|
| BG | 3 | 413.5032 | 137.8344 | 52.213 | 2.66 |
| WG | 196 | 517.4005 | 2.639798 | | |
| Total | 199 | 930.9037 | | | |

Table V: Pretest, Posttest and Post test adjusted means for Medicine Ball Put

| Groups | N | MX | MY | MY.X |
|---|---|---|---|---|
| 8 to below 10 | 50 | 13.648 | 15.588 | 19.67992 |
| 10 to below 12 | 50 | 15.332 | 18.998 | 21.60484 |
| 12 to below 14 | 50 | 20.21 | 26.568 | 24.87303 |
| 14 to below 16 | 50 | 23.962 | 29.986 | 24.98221 |

Figure II

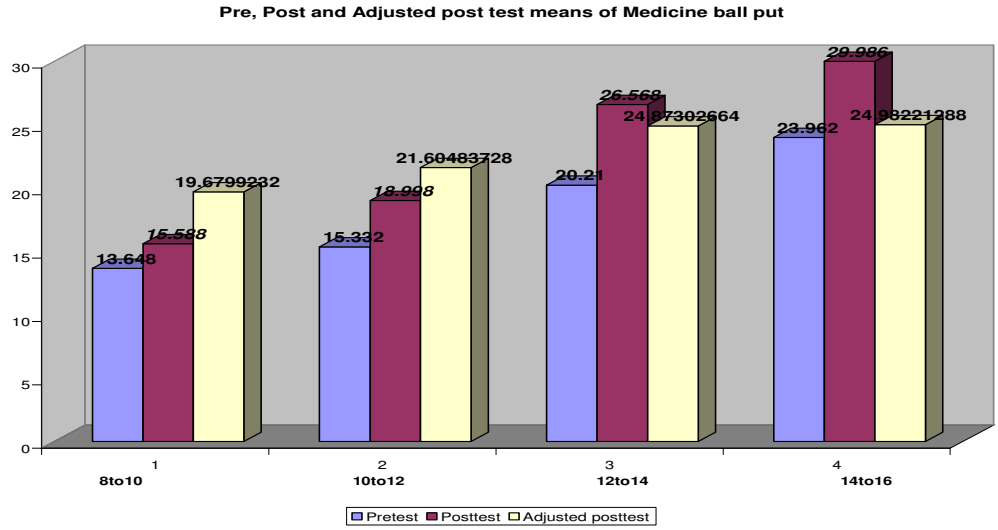



Table VI

Scheffe's Post hoc individual comparison test for Medicine Ball Put

*Comparison Difference = 0.92*

| Groups & Values | 14 to below 16<br>24.98 | 12 to below 14<br>24.87 | 10 to below 12<br>21.6 |
|---|---|---|---|
| 12 to below 14<br>24.87 | 0.11<br>N. sig | | |
| 10 to below 12<br>21.6 | 3.38<br>Sig | 3.27<br>Sig | |
| 8 to below 10<br>19.68 | 5.95<br>Sig | 5.19<br>Sig | 1.92<br>Sig |

To find out the source of significant difference and to find out which age group children showed more responsiveness on strength component, Scheffe's Post hoc individual comparison test was conducted. As depicted in table VI the four experimental groups were arranged in a descending order as per their post test adjusted means of the criterion variable. If any two groups' difference is more than the comparative difference obtained i.e., 0.92, there is significant effect because of the experimental variables. The obtained difference i.e. 0.11 between 14 to 16 and 12 to 14 age children groups was not significant indicating that there was no significant difference in responsiveness for these two groups on the strength component of motor ability due to the experimental variables. Whereas all the other ordered comparisons showed significant differences. The ordered comparative difference between the 14 to 16 years children group and 10 to 12 years group (3.38) and 8 to 10 years group (5.95) were significant. Also the ordered comparative difference between 12 to 14 years group and 10 to 12 years group (3.27) and 8 to 10 years group (5.19) were significant. The ordered comparative difference between the 10 to 12 years children group and 8 to 10 years group (1.92) was also significant. Increasing age groups of children of the study experienced increasingly significant increments in the strength factor of the motor ability due to the selected experimental exercises, except that there was no significant effect on the strength factor between the 12 to 14 and 14 to 16 age groups of children of the study. Among all the four age groups of children, 14 to 16 and 12 to 14 age groups have experienced more significant gains in strength factor due to the experimental exercises.

## CONCLUSIONS

The following conclusions were arrived with appropriate statistical analysis:

10 to 12, 12 to 14 and 14 to 16 years age children groups experienced significant improvements in speed factor of motor ability, when compared to 8 to 10 years age group children but there was no significant improvements among these three groups.14 to 16 and 12 to 14 years age children groups experienced significant improvements when compared to the 8 to 10 and 10 to 12 years age children groups in the strength factor of motor ability due to more of physical maturation.

The above research conclusions may be very useful in formulating the various training protocols for various purposes like Fitness training, Preventive Physical Therapy, Sports conditioning and Sports Training.

## BIBLIOGRAPHY


Babin J, Katić R, Ropac D, Bonacin D. *Effect of specially programmed physical and health education on motor fitness of seven-year-old school children*. Coll. Antropol. 2001 Jun; 25(1): 153-65.

Eadric Bressel, EdD, Joshua C Yonker, John Kras, and Edward M Heath, The Effects of 8-Week Strength, Plyometric and Combinational Trainings on Dynamic Balance of Teenage Handball Players, Journal of Basic and Applied Scientific Research 2011, 1(12), 3316-3321.

Ingle L, Sleap M, Tolfrey K. *The effect of a complex training and detraining programme on selected strength and power variables in early pubertal boys.* J.Sports Sci. 2006 Sep; 24(9): 987-97.

Jensen JL, Marstrand PC, Nielsen JB. *Motor skill training and strength training are associated with different plastic changes in the central nervous system.* J. Appl. Physiol. 2005 Oct;99(4):1558-68. Epub 2005 May 12.

Markovic G, Jukic I, Milanovic D, Metikos D. *Effects of sprint and plyometric training on muscle function and athletic performance.* J. Strength Cond. Res. 2007 May;21(2):543-9.

**Pasanen K**, **Parkkari J**, **Pasanen M**, **Kannus P**. *Effect of a neuromuscular warm-up programme on muscle power, balance, speed and agility: a randomised controlled study*. **Br J Sports Med.** 2009; 43(13):1073-8. Epub 2009 Jul 20.

Rosenkranz K, Kacar A, Rothwell JC. *Differential modulation of motor cortical plasticity and excitability in early and late phases of human motor learning*. J.Neurosci. 2007 Oct 31; 27(44): 12058-66.

Salonikidis K, Zafeiridis A. *The effects of plyometric, tennis-drills, and combined training on reaction, lateral and linear speed, power, and strength in novice tennis players.* J.Strength Cond Res. 2008 Jan; 22(1):182-91.

Santos EJ. Janeira MA. *Effects of reduced training and detraining on upper and lower body explosive strength in adolescent male basketball players*. J. Strength Cond. Res. 2009 Sep; 23(6): 1737-44.

Vishaw Gaurav, Sukhdev Singh, Mandeep Singh and Bharti Rathi, "A comparative study of arm and shoulder girdle strength and agility of college-level baseball pitchers and non-pitchers", Journal of Physical Education and Sports Management, 2011, 2(2), 17-20.

Wang JH., A study on gross motor skills of preschool children. J Res Child Edu. 2004; 19(1): 32-43.

Williams HG. Pfeiffer KA., O'Neill JR., Dowda M., McIver KL., Brown WH., Pate RR. *Motor skill performance and physical activity in preschool children*. Obesity (Silver Spring). 2008 Jun; 16(6):1421-6.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp117-118**
**Journal Impact factor 0.5190**

# Role of Computer Science and Robotics in the Field of Sports

**Vijayalaxmi.M.B[1], Dr.Rajkumar.P.Malipatil[2]**
**1 Dept. of Computer Science, Govt. First Grade College,**
**Bijapur, Karnataka (India).**
**vijayalaxmimca@gmail.com**
**2 Asst. Professor, School of Physical Education, Karnataka**
**State Women's University, Bijapur.**

## Introduction:

Computers are an important aid in teaching and evaluating the techniques in Sports, Games and physical Education. Computers help in giving the precise results in Sports competitions. Computer technology can be used in the development of sports performance and techniques. This is due to the fact that the use of data and media, the design of models, the analysis of systems etc increasingly requires the support of suitable tools and concepts which are developed and available in Computer Science.

## Support of Computer Science in Sports

Computers have the potential to be the single most powerful tools in sport science with the tools for capture, storage, management, retrieval, integration, analysis, interpretation, reporting, and dissemination. Knowing how to collect, store, access, retrieve and integrate information is critical to effective performance analysis and decision-making. Databases should form the underlying foundation of most other tools used in sport science as they provide the structure and access to the information that is the catalyst for most other applications. As the development of resources become more integrated, the value of computer science increases and their role in system design becomes essential. This includes the ability to retrieve previous data for comparison with new performance and the use of data to highlight issues for deliberation. Computer also stores useful multimedia repositories of sports information. As sport involves human motion, this can be quantified with numerical data, graphics, and audio/video recordings, the multimedia resources in this context are most valuable. The information can be accessed via creative interfaces that provide timely and efficient information that is tailored to each individual's unique requirements

.

**Virtual Reality Games** - Recently, the number of studies on virtual environment games is supporting sport skill learning. Most of the studies have focused on improving the quality of the environment created by virtual reality technology. When a trainee moves within a virtual environment shown on a display device, the trainee imagines the pictures 3-dimensionally. The virtual reality games aid the trainer as well as trainee to give the training related to sports in a cost effective way. It supports trainer to show different circumstances under which decision has to be chosen, how best has to be played, how to react to the opponent, etc. Sometimes it may not be possible to trainer to give every training in a real environment, then virtual reality games can be used as training aid for sports.

## Robotics

Robotics is the art and commerce of robots, their design, manufacture, application and practical use. Robots will soon be everywhere, in our home and at work. They will change our life style. When the Singularity happens, robots will be indistinguishable from human beings and some people may become Cyborgs: half man and half machine.

**Purposes of Robots:**

Robotized space vehicles and facilities Anthropomorphic general-purpose robots with hands like humans used for factory jobs - Intelligent robots for unmanned plants - Totally automated factories will be commonplace. Robots for guiding blind people Robots for almost any job in home or hospital, including Robo-surgery. Housework robots for cleaning, washing etc - Domestic robots will be small, specialized and attractive.

**Applications of Robotics**

Robotics is a multi disciplinary field of technology that recently receives extensive attention from robotics community. The focus on the robotics industry has contributed positively in economic growth and the improvement of the strategic needs [1]. The applications of Robots are in the field of Industry, Intelligent Systems, Medicine, Space, Underwater Robots, Military and Security, Recreations and Sports and so on.

**Robots in Recreations and Sports:**

Sports and recreations is one of the main areas of robotics industry. One of the main areas of robots in to make it look like humans. Those robots are called humanoid robot which a robot with its overall appearance, based on that of the human body, allowing interaction with made-for-human tools or environments. Examples of those are toys used for kids. Robots in sports are also another important issue like what is happening in soccer fields robots where teams used to play real matches using just robots.

**Field Robotics in Sports:**

Progress is constantly being made and new applications robotics. Very skilful personnel are needed to work for long hours with very high concentration for the football yard to be compatible with standards of Federation Internationale de Football Association (FIFA). In the other side, a Geographical Positioning System based guided vehicle or robot with three implements; grass mower, lawn stripping roller and track marking illustrator is capable of working 24 h a day, in most weather and in harsh soil conditions without loss of quality. The approach in [2] for the automatic operation of football playing fields requires no or very limited human intervention and therefore it saves numerous working hours and free a worker to focus on other tasks. An economic feasibility study showed that the current manual practices.

In [3] “Robot journalists” (actually automated software designed to turn facts into readable copy) stood to threaten the jobs of writers in fields like sports reporting. It looks like the results are actually starting to become alarmingly good. As a factual piece of writing the ‘robot’ still did an impressive job of journalists.

**Conclusion**

Computer Science has become an important interdisciplinary subject for Sport Science. Robotics is a multidisciplinary field of technology that recently receives extensive attention from robotics community. As robots play an important vital role in other applications they also play an vital role in sports. The focus on the robotics industry has contributed positively in economic growth and the improvement of the strategic needs in sports field.

**References**

[1] http://www.kacst.edu.sa/en/depts/NCRIS/Pages/research.aspx

[2] Field Robotics in Sports: Automatic Generation of guidance Lines for Automatic Grass Cutting, Striping and Pitch Marking of Football Playing Fields By Ibrahim A. Hameed, Claus G. Sorrenson, Dionysis Bochtis and Ole Green, Aarhus University, Foloum Research Center, Denmark, International Journal of Advanced Robotic Systems.

[3] ‘Robot Journalist’ writes a better story than human sports reporter, 18th April 2011 by Martin Bryant.

[4] Jenny Vincent, Pro Stergiou, Larry Katz: The Role of Databases in Sport Science: Current Practice and Future Potential. Int. J. Comp. Sci. Sport 8(2): (2009)

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp119-120**
**Journal Impact factor 0.5190**

# Influence Of Selected Yogic Asanas On Hip Flexibility And Shoulder Elevation Among College Men Students

**Dr.A.Raghu, P.E.T. Z.P.High School, Lalamkoduru, Rambilli Mandal, Visakhapatnam, A.P.**

**A.Pallavi, Assistant Professor, Dept of Physical Education, Andhra University**

**ABSTRACT**

The purpose of the study was to investigate the influence of selected yogic asanas on the improvement of trunk flexion, trunk extension and shoulder elevation. To achieve the purpose of the study, 20 students of First Year B.Com, Course at Prism Degree College, Visakhapatnam, Andhra Pradesh, India were selected at random as subjects. They were given selective asanas practice every day about 15 to 30 minutes for Eight Weeks duration. The data pertaining to the study were analysed by using dependent t-test. Finally, it was concluded that the eight weeks of asanas practice had significantly improved the selected dependent variables such as trunk flexion, trunk extension and shoulder elevation.

Key words : Trunk Flexion, Trunk Extension and shoulder Elevation

**INTRODUCTION**

The word Yoga is derived from the Sanskrit term " Yuj" which means to join or to unite or to bind. Yoga is the true union of the human being (Jeevathma) with the God (Paramathma). The merger of soul with God is possible through systematic yogic practice. Yoga is one of the gifts of our rich heritage. Yoga is not a religion, it is a science that regulaes the individual physiological and psychological behaviours. The great saint Patanjali was called as the Father of Yoga. According to him, Yoga is a process of controlling the mind's movement.

Raja Yoga

The systematic path that has been followed and practiced by our ancestors was called Yoga. The great saint, Patanjali had enumerated a systematic path to reach the goals of life known as Raja Yoga. There are refereed to as "Eight Limbs of Yoga" or Astanga Yoga. The Patanjali's Eight Limbs of Yoga are Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi. These eight limbs are inter linked with one another. Each limb leads progressively to the next higher stage of awareness and to spiritual life. The first five limbs deals with the individuals outward actions or external practice. It is called as Bahiranga yoga. Another three limbs are more and more internally mind-oriented. So it is called as Antaranga Yoga.

Asanas

The third limb of Raja Yoga is Asana. Asana means posture. According to traditional belief. Lord shia is said to have demonstrated 84 lakhs of asanas. Each asana is said to have wonderful physical and physiological values. The main purpose o asanas is to improve suppleness and flexibility the glands and regulation of blood flow.

The researchers have estimated that a phenomenal 70% to 80% o the world population suffer from disabling backache a some point or other in their lives. May researches have revealed that through systematic yogic asanas practice, one can improve joint moility and strengthen the back muscles and reduce the backache gradually. Keeping this concept in mind, the researchers made an attempt to investigate the influence of selected asanas on hip flexibility and shoulder elevation.The purpose of this study was to investigate the influence o selected yogic asanas on trunk flexion, trunk extension and shoulder elevation among college men students.

## METHODOLOGY

To achieve the purpose o the study, 20 male students studying first year B.Com, course at Prism Degree College, Visakhapatnam, Andhra Pradesh, India were selected at random as subjects. There age ranged from 18 to 21 years. The subjects were given eight weeks o asanas practice during early morning hours. A set o 8 to 10 Asanas were prescribed during the training period. The following variables namely hip flexion, hip extension and shoulder elevation were chosen as dependent variables. The data pertaining to the study were collected by using standardized test as recommended by Cureton's (1941) both before and after the training period of eight weeks. The concept o dependent t-ratio was employed to analysis the data, In all case, 0.05 level of fixed as confidence interval.

## RESULTS AND DISCUSSION ON FINDINGS

TABLE – I

Mean, Standard Deviation and t-Ratio Values of Pre and Post Test Data on Hip Flexion Hip Extension and Shoulder Elevation of Asanas Group

| Variables | Mean ± SD | | t-ratio | Table value |
|---|---|---|---|---|
| | Present | Post tent | | |
| Hip Flexion | 34.40 ± 3.15 | 37.62 ± 3.22 | 3.79* | 2.14 |
| Hip Extension | 23.40 ± 2.68 | 25.65 ± 2.72 | 3.26* | 2.14 |
| Shoulder Elevation | 18.25 ± 1.20 | 20.61 ± 1.25 | 7.38 | 2.14 |

* Significance at 0.05 level o confidence

From the table I, it was observed that the t-ratio values of hip flexion, hip extension and shoulder elevation are 3.79, 3.26 and 7.38 respectively. Since the t-ratio values are greater than the table value of 2.14 with df 14 at 0.05 level of confidence, it is implied that a eight weeks programme of selected asanas practice had significantly improved hip flexion, hip extension and shoulder elevation.

Asanas are considered as static stretching procedure adopted to stabilize the jopints and muscles of the body. The main purpose of all asanas is to establish stability and proper rhythm in the working o the neuro-muscular system. This helps the healthy functioning o the organism and also leads to suppleness and ease o movement. Thus, the joints and muscles are properly developed and strengthened through asanas practice. This may be one of the reason for the improved hip flexibility and shoulder elevation through a eight weeks programme of selected yogic asanas practice. The above findings are in corroboration with the findings of Prasad (1966) in which he concluded that yogic asanas practice made a very good contribution to flexibility. According to Dhanaraj (1995), the influence of yogic asanas had significantly improved flexibility and when it was discontinued for eight weeks a significant decline existed in flexibility. Hence, it is concluded from the results of the study that a eight weeks of selected yogic asanas had significantly improved hip flexion, hip extension and shoulder elevation.

## REFERENCE


Giri, C. " Yoga and Physical Fitness with special reference to Athletics" IATHPER Quarterly Journa 2 (6), 1966, p.237.

Gharate, M.L., "Effect of Yogic Training on Physical Fitness", Yoga Mimansa, Vol.15(4), January, 1973, p.31

Gately, K.K.et.al., Yoga and Your Heart, Bombay : Jaico Publishing House, 1983

Prasad, Ram Ladhn, " An Evaluation of Yoga system of Physical Education", Doctoral Thesis, Abstract in Completed Research in Health, Physical Education and Recreation (1966).

Dhanaraj, A.R.Effect of selected Yogic and Physical Exercises on Flexibility and Cardio-Respiratory Endurance of Madurai Kamaraj University Players, Unpublished Doctoral Thesis, Madurai Kamaraj University, 1995

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp121-122**
**Journal Impact factor 0.5190**

# A Comparative Study of Speed Among Long Jumpers And Triple Jumpers Of Hyderabad

**Dr.J.Prabhakar Rao, Principal, University College of Physical Education,OU**

**Abstract**: The aim of the present study to compare the speed among Long Jumpers and Triple Jumpers of Hyderabad. 20 Male Long Jumpers and 20 Male Triple Jumpers those who have participated in the Hyderabad District Athletics Championships for the year 2012-13 were taken for the study. The 50 Meters Run Test is used to measure the speed among Long Jumpers and Triple Jumpers. The study is limited to the Male Long Jumpers and Male Triple Jumpers of the Hyderabad. This study shows that the Long Jumpers are having good speed compare to Triple Jumpers. This study shows that the speed training is good among Long Jumpers as they are doing only one jump compare to triple jump as they are doing three jumps i.e.Hop,Step and Jump
Key Words: Speed, Long Jump, Triple Jump,Speed training etc.

**Introduction:**

The long jump is a track and field event in which athletes combine speed, strength, and agility in an attempt to leap as far as possible from a take off point. This event has been an Olympic medal event since the first modern Olympics in 1896 and has a history in the ancient Olympics.

Long Jump is divided into the following phases:

Approach, Takeoff, Flight and Landing

Approach Phase:

Objectives: To achieve optimum speed.

Characteristics: The Approach length varies between top class jumpers and medium class jumpers. Top Class Jumpers take 15 to 25 strides. Running technique is similar to sprinting. Speed increases continuously until the take off Board.

Take off:

Objectives: To maximise vertical velocity and to minimise loss in horizontal velocity.

Characteristics: Foot plant is active and quick with a down and back motion. Take off time is minimised, minimum bending of the take off leg. Thigh of the free leg is driven to horizontal position, ankle,knee and hip joints are fully extended.

Flight Phase:

Objectives:To prepare for an efficient landing.

Characteristics: Running action continues in the air supported by arm swing. Stride rhythm of the approach should not be changed. Running action must be finished at landing with both legs extended forward. In Hitch kich technique the Variation 1.5, 2.5 3.5 steps during the flight. It varies for each jumper.

Landing Phase:

Objective: To Minimize the loss of distance

Characteristics: Legs are almost fully extended. Trunk bent forward. Arms are drawn backwards, Hips are pushed forwards toward the touch down point.

Long jump sequence

Triple jump sequence

The triple jump sometimes referred to as the Hop, Step and Jump is a track and field sport, similar to the long jump, but involving a "hop, bound and jump" routine, whereby the competitor runs down the track and performs a hop, a bound and then a jump into the sand pit.

The triple jump has its origins in the Ancient Olympics and has been a Modern Olympics event since the Games' inception in 1896.The triple jump is divided into the following phases: Approach, Hop, Step, Jump. The Hop, Step and Jump can each be divided into take off, flight and landing. In the approach phase the jumper accelerates to a maximum controllable speed. In the hop phase the jumper executes the movement quickly and flatly, covering about 35% of the overall distance. In the step phase the jumper covers about 30% of the overall distance. The step is the most critical part of the triple jump. Its duration should be equal to the hop. In the jump phase the jumper takes off with opposite leg and covers about 35% of the overall distance.

Approach Phase:

Objectives: To reach maximum velocity and to position the body for the take off.

Characteristics: Approach length varies between 10 strides to 20 strides

Hop Phase:

Objectives: To achieve a long, flat flight with a minimal loss of horizontal velocity.

Characteristics: Thigh of the free leg is driven to the horizontal position. Take off direction is forward, not upward. Free leg is drawn back and take off leg is drawn forwards upwards than extended forwards to prepare for touch down.

Step Phase:

Objectives: To equal the duration of the hope i.e. to achieve the same height as in the hop.

Characteristics: Foot plant is active and quick. Free leg is almost completely extended. Double arm swing is used if posssible

Jump Phase:

Objectives: To take off powerfully at an optimum take off angle.

Characteristics: Foot plant is active and quick with a down and back motion. Double arm action is used. Hang or sail technique are used in the air. Legs are almost fully extended at landing.

**Methodology:**

AIM: To find out the Speed between Male Long Jumpers and Male Triple Jumpers .

SAMPLE: The sample for present study consists of 20 Male Long Jumpers and 20 Male Triple Jumpers between the age group of 19 to 22 years of Hyderabad District those who have participated in the Hyderabad District Athletics Meets during the year 2012-13.

TOOLS: 50 Meter Run is used to collect the data for speed.

Limitations: The study is limited to students of the Osmania University and 50 Meters Run is chosen for the study to find out the speed among Long Jumpers and Triple Jumpers.

**Results And Discussion:**

Table – I is showing the speed among the Long Jumpers and Triple Jumpers.

Table - I

| Test Item | Group | Number | Mean | Std. Deviation | Std.Error Mean | t | df | Sig.(2tailed) |
|---|---|---|---|---|---|---|---|---|
| 50 M Run | Long Jumper | 20 | 7.00 | 0.24 | 0.08 | -1.81 | 38.00 | 0.09 |
| 50M Run | Triple Jumper | 20 | 7.28 | 0.46 | 0.15 | | | |

It was found that the average speed of Long Jumpers are 7.00 and Triple Jumpers are 7.28. Long Jumpers are having good speed compare to the Triple Jumpers because the Long Jumpers are going for only one jump with high speed and triple jumpers are going to perform hop, step and jump. The standard deviation of Long Jumpers are 0.24 and Triple Jumpers are 0.46. The t-ratio is -1.81 and there is a significant relationship of 0.09 between Long Jumpers and Triple Jumpers.

**Conclusions:**

It is concluded that Long Jumpers are having good speed compare to the Triple Jumpers. Speed Training must be given to all Long Jumpers and Triple Jumpers to enhance the performance.

**Recommendations:**

The similar studies can be conducted on different sports and games.

**References:**

Science of Sports Training, Hardyal Singh
Wikipedia,Long Jump and Triple Jump
IAAF Run,Jump,Throw, The Official Guide to Teaching Athletics

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp123-124**
**Journal Impact factor 0.5190**

# A Comparative Study of Aerobic Endurance among Boxers and Judo Players of Osmania University

**Dr.K.Deepla, Associate Professor, Dept. of Physical Education, OU**

**Dr. I. Balram Reddy**
**Head, Dept. of Physical Education, OU, Hyderabad**

## Introduction:

Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. During aerobic (with oxygen) work, the body is working at a level that the demands for oxygen and fuel can be meet by the body's intake. The only waste products formed are carbon-dioxide and water which are removed by sweating and breathing.

Aerobic endurance can be sub-divided as follows:
Short aerobic – 2 minutes to 8 minutes (lactic/aerobic)
Medium aerobic – 8 minutes to 30 minutes (mainly aerobic)
Long aerobic – 30 minutes + (aerobic)

**Boxing** is a combat sport in which two fighters battle each other with their fists. The boxers were heavily padded gloves and fight in a square rope of area called a ring. A good bout between two well matched fighters is a fast violent display of strength and skills. The Boxers through powerful punches as such tries to win the bout on points. Good Boxer must be strong, quick, skillful and in excellent physical condition. They also should have the courage and determination to fight in spite of pain and exhaustion. In all amateur tournaments there shall be 3 rounds of 3 minutes each, a full one minute rest period shall be given between the Rounds.

**Judo** a modern martial art, combat and Olympic sport created in Japan in 1882 by Jigoro Kano. Its most prominent feature is its competitive element, where the object is to either throw or takedown an opponent to the ground, immobilize or otherwise subdue an opponent with a grappling maneuver, or force an opponent to submit by joint locking or by executing a strangle hold or choke. Strikes and thrusts by hands and feet as well as weapons defenses are a part of judo, but only in pre-arranged forms (kata) and are not allowed in judo competition or free practice (randori).

## Purpose(s) :

The Purpose of the present study to find out the Aerobic endurance among Boxers and Judo Players of the Osmania University those who have participated in the O.U.Inter College sports and games for the year 2012-13.

## Method(s):

The sample for the present study is Thirty Male Boxers and Thirty Judo Players between the age group of nineteen to twenty one years of Osmania University. The Twelve Minute Cooper Test were used to measure the Aerobic Endurance of Boxers and Taekwondo Players. The Boxers and Judo Players were made to run twelve minute in four hundred meters track at

Osmania University in the batch of ten Members and the results recorded based upon the distance covered in the twelve minutes.

**Result(s):**

This study shows that Boxers are having good Aerobic Endurance Compare to Judo Players and the Boxers has covered the more distance in twelve minute.

Table-I

| Cooper Test | | | | |
|---|---|---|---|---|
| Group | Mean | Std. Deviation | Std. Error Mean | N |
| Boxers | 3080.500 | 140.180 | 25.595 | 30.000 |
| Judo | 2639.833 | 190.719 | 34.822 | 30.000 |

| | Independent Samples Test | | |
|---|---|---|---|
| | t | df | Sig. (2-tailed) |
| | | | |
| Cooper Test | 2.06 | 58.000 | 0.000 |

Table I showing the Cooper Test results of Boxers and Judo Players. The Boxers has covered the distance of 3080.500 Meters and Judo Players has covered the distance of 2639.833 Meters in 12 Minutes Run. There is a significant difference between Boxers and Judo Players in Aerobic Endurance.

**Conclusions(s):**
It is concluded that Boxers are having good Aerobic Endurance compare to Judo Players. It may be due to the regular training of Boxing and requirement of Endurance is high compare to the Judo Players.

**Recommendations:**It is recommended that similar studies can be conducted on other sports and games.

**References:**

Science of Sports training, Hardyal Singh
Wikipaedia- Boxing and Judo

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp125-129**
**Journal Impact factor 0.5190**

# Players In Relation To Their Performance And Age

**Syed Muneer Ahmed, GHMC, Hyderabad & Hassan Al Moslim, KFUPM, Saudi Arabia**

**Abstract**
The main purpose of the study was to find out the effect of self-concept in relation to the performance and age of female tennis players. The sample consisted of 50 female tennis players performing at the Inter-college and inter-university level in the age groups of 17 to 22 years. The self-concept questionnaire (V.K.Mittal, 1994) was used to collect the data. The statistical tool used for the study was ANNOVA 2X2. The results of the study indicated the University Female Tennis players were found significantly better on physical, social, temperamental, educational, intellectual and total self-concept as compared to the college level female tennis players. Female players of second age group (20-22 years) were found significantly better on physical and intellectual aspects of self-concept as compared to the first age group (17-19). No significant difference was found between these groups on other variables of self-concept.

## Introduction

In every area of human activity the way a person thinks about himself is critical to his achievement. Self-perception interacts with other psychological variables to influence his efforts subsequently his behaviour. Sports competition outcomes are directly influenced by the assessment of self-effectiveness. Self-concept is one of the psychological constructs that has been extensively researched in the field of sports. It has a prominent role in human behaviour, with positive self-image central to the adaptive functioning and everyday happiness of the individual (Harter, 1986, 1988). Moreover, it is the central aspect of personality and several identifiable personality traits - self-confidence, consistency, assertiveness, assurance, regard, respect, and esteem (Salokun, 1990a). It is important to note that self-concept, like many psychological constructs, can have many different definitions. For example, Pangrazi (1982) defined self-concept as "a system of ideas, attitudes, values, and commitments that constitute a person's inner world." According to Burn (1982), "self-concept is composed of all beliefs and evaluations you have about yourself." Fox (1990) described self-concept as "a self-description, whereby a series of statements are used such as 'I am male, “I am a student,' to formulate a multifaceted personal picture." Thus, it can be concluded that self-concept is an aspect of affective behaviour and an indicator of an individual's behaviour and emotional and mental well-being. Self-concept is influenced by many factors, such as age, sex, academic achievement, and socioeconomic status. Body image is also an important element of self-concept development. How persons feel about themselves is related to how they feel about their body. Height, weight, girth, eye colour, complexion, and general body proportions are very much related to feelings of personal adequacy (Hamacheck, 1978). A person's physical self is the outer shell which houses all of his inner feelings and as such it deserves to be recognized and understood for whatever its potential is for eliciting social responses which contribute to an individual's overall concept of himself (Rosen & Ross, 1968; Lerner & Gellert, 1969; Secord & Jourard, 1953; Balogun, 1986; Zion, 1965). Self-concept may be affected by athletic participation. Research on self-concept, found a significant effect of athletic participation (Schumaker, et al. 1986, Salokun, 1990 and Smith, 1986). But there is not much Research on self-concept that covers up comprehensively various disciplines and does not focus on all the relevant issues related to sports performance. Hence, the purpose of this study was to find out the variable of self-concept in relation to varying levels of performance and age of female tennis players.

## Method

The subjects selected for the study were50 female tennis players performing at the Inter-college and inter-university level in the age groups of 17 to 22 years. The self-concept questionnaire developed by V.K.Mittal, 1994 was used to collect the data. The inventory provides separate dimensions of self-concept viz., physical, social, intellectual moral, educational and temperamental self-concepts. The subjects were divided into batches of 10 each based on their ages and the questionnaire was administered where there was minimum distraction. The test items were read out to the players and they were told to follow the instructions carefully. The statistical tool used for the study was ANNOVA 2X2.

## Results and Discussion

The results related with respect to the Psychological Variable of Self-concept on Female Tennis players in relation to their Performance and Age are presented in the tables 1 to 7 .

**Table 1**

**Showing the results of 2x2 ANOVA of the groups based on performance (College and University) and age (First and Second Group) and their interaction effect with Mean and SD values on the variable physical self-concept**

| Mean/SD | Sources of Variance | SS | DF | MS | F-Value |
|---|---|---|---|---|---|
| | **PERFORMANCE** | | | | |
| 32.93±1.13 | College | 1.68 | 1 | 1.68 | 43.58** |
| 34.47±1.31 | University | | | | |
| | **AGE** | | | | |
| 33.14±1.32 | 1ST Group (17-19 Yrs.) | 0.27 | 1 | 0.27 | 7.23** |
| 34.26±1.36 | 2nd Group (20-22 Yrs.) | | | | |
| | Performance X age | 0.09 | 1 | 0.09 | 2.33 |
| | Within | 0.0038 | | | |

*P<.05, ** P<.01

Table 1 indicates the results on the variable of physical self-concept with the mean and Standard Deviation of the University Female tennis players showing 34.47±1.31 and that of the College players being 32.93±1.13with an F-value of 43.58 which demonstrated that there was significant difference among the two groups with regard to their performance. Significant differences were also noted between the two age groups (17-19 yrs. & 120-22 Yrs.) at p<0.01 level of confidence. The results indicate that the older athletes scored higher as compared to the younger athletes the mean and SD value of former being 34.26±1.36 as compared to the later which was 33.14±1.32. However the performance by age interaction is not significant.

**Table 2**

**Showing the results of 2x2 ANOVA of the groups based on performance (College and University) and age (First and Second Group) and their interaction effect with Mean and SD values on the variable intellectual self-concept**

| Mean/SD | Sources of Variance | SS | DF | MS | F-Value |
|---|---|---|---|---|---|
| | **PERFORMANCE** | | | | |
| 32.93±1.13 | College | 0.56 | 1 | 0.56 | 10.42** |
| 35.24±1.89 | University | | | | |
| | **AGE** | | | | |
| 33.81±1.33 | 1ST Group (17-19 Yrs.) | 1.7 | 1 | 1.47 | 27.08** |
| 35.36±1.61 | 2nd Group (20-22 Yrs.) | | | | |
| | Performance X age | 0.15 | 1 | 0.15 | 2.76 |
| | Within | 0.054 | | | |

*P<.05, ** P<.01

In table 2 the results of 2X2 ANOVA has been given with regard to the intellectual self-concept. The F-value as indicated demonstrates significant differences between college and university female tennis players at p>0.01 level of confidence on the intellectual self-concept. The mean and SD values of the two groups showed that the university female tennis players have scored higher than the college players with the values being 35.24±1.89 as against the reading of 32.93±1.13 respectively. Significant differences have also been found between two age groups

(17-19 yrs. & 120-22 Yrs.) at p<0.01 level of confidence. The mean and SD values of the groups clearly showed that older players scored higher than the younger players. The values were 35.36±1.61 and 33.81±1.33respectively. However, the performance by age interaction was not significant.

**Table 3**

**Showing the results of 2x2 ANOVA of the groups based on performance (College and University) and age (First and Second Group) and their interaction effect with Mean and SD values on the variable Social self-concept**

| Mean/SD | Sources of Variance | SS | DF | MS | F-Value |
|---|---|---|---|---|---|
| | **PERFORMANCE** | | | | |
| 31.54±1.44 | College | 0.79 | 1 | 0.79 | 22.50** |
| 32.45±0.72 | University | | | | |
| | **AGE** | | | | |
| 31.14±1.49 | 1ST Group (17-19 Yrs.) | 0.00 | 1 | 0.00 | 0.01 |
| 32.20±0.83 | 2nd Group (20-22 Yrs.) | | | | |
| | Performance X age | 0.00 | 1 | 0.00 | 2.02 |
| | Within | 0.035 | | | |

*P<.05, ** P<.01

In table 3 the results of 2X2 ANOVA pertaining to the social self-concept are explained. The F-value as indicated demonstrates significant differences between college and university female tennis players at p<0.01 level of confidence on the social self-concept. The mean and SD values of the two groups showed that the university female tennis players have scored higher than the college tennis players with the reading being 32.45±0.72 and 31.54±1.44 respectively. No significant differences were found between the two age groups (17-19 yrs. &20-22 Yrs.). This apart the performance by age interaction also did not found to be significant.

**Table 4**

**Showing the results of 2x2 ANOVA of the groups based on performance (College and University) and age (First and Second Group) and their interaction effect with Mean and SD values on the variable temperamental self-concept**

| Mean/SD | Sources of Variance | SS | DF | MS | F-Value |
|---|---|---|---|---|---|
| | **PERFORMANCE** | | | | |
| 28.76±3.93 | College | 3.66 | 1 | 3.66 | 8.95** |
| 30.55±3.89 | University | | | | |
| | **AGE** | | | | |
| 29.36±3.91 | 1ST Group (17-19 Yrs.) | 0.07 | 1 | 0.07 | 0.18 |
| 29.95±4.09 | 2nd Group (20-22 Yrs.) | | | | |
| | Performance X age | 0.00 | 1 | 0.00 | 0.00 |
| | Within | 0.409 | | | |

*P<.05, ** P<.01

In table 4 the results of 2X2 ANOVA pertaining to the temperamental self-concept are explained. The F-value as indicated demonstrates significant differences between college and university female tennis players at p<0.01 level of confidence on the social self-concept. The mean and SD values of the two groups showed that the university female tennis players have scored higher than the college tennis players with the reading being 30.55±3.89 and28.76±3.93respectively. No significant differences were found between the two age groups (17-19 yrs. & 20-22 Yrs.). Besides the performance by age interaction also did not yield significant results.

**Table 5**

**Showing the results of 2x2 ANOVA of the groups based on performance (College and University) and age (First and Second Group) and their interaction effect with Mean and SD values on the educational self-concept**

| Mean/SD | Sources of Variance | SS | DF | MS | F-Value |
|---|---|---|---|---|---|
| | **PERFORMANCE** | | | | |
| 27.44±4.76 | College | 19.56 | 1 | 19.56 | 36.70** |
| 31.27±4.23 | University | | | | |
| | **AGE** | | | | |
| 29.01±4.93 | 1ST Group (17-19 Yrs.) | 1.70 | 1 | 1.70 | 3.20 |
| 29.70±4.09 | 2nd Group (20-22 Yrs.) | | | | |
| | Performance X age | 0.29 | 1 | 0.29 | 0.54 |
| | Within | 0.533 | | | |

*P<.05, ** P<.01

In table 5 the results of 2X2 ANOVA pertaining to the educational self-concept are explained. The F-value as indicated demonstrates significant differences between college and university female tennis players at p<0.01 level of confidence on the social self-concept. The mean and SD values of the two groups showed that the university female tennis players have scored higher than the college tennis players with the reading being 31.27±4.23and27.44±4.76respectively. No significant differences were found between the two age groups (17-19 yrs. &20-22 Yrs.). Besides the performance by age interaction also did not yield significant results.

**Table 6**

**Showing the results of 2x2 ANOVA of the groups based on performance (College and University) and age (First and Second Group) and their interaction effect with Mean and SD values on the variable moralself-concept**

| Mean/SD | Sources of Variance | SS | DF | MS | F-Value |
|---|---|---|---|---|---|
| | **PERFORMANCE** | | | | |
| 30.37±3.48 | College | 0.99 | 1 | 0.99 | 3.18 |
| 31.27±4.23 | University | | | | |
| | **AGE** | | | | |
| 30.53±3.31 | 1ST Group (17-19 Yrs.) | 1.7 | 1 | 0.17 | 0.56 |
| | 2nd Group (20-22 Yrs.) | | | | |
| | Performance X age | 0.39 | 1 | 0.39 | 1.25 |
| | Within | 0.313 | | | |

*P<.05, ** P<.01

In table 6 the results of 2X2 ANOVA pertaining to the moral self-concept are explained. The F-value as indicated demonstrates no significant differences between college and university female tennis players on the moral self-concept.No significant differences were found between the two age groups (17-19 yrs. &20-22 Yrs.). Besides the performance by age interaction also did not yield significant results.

**Table 7**

**Showing the results of 2x2 ANOVA of the groups based on performance (College and University) and age (First and Second Group) and their interaction effect with Mean and SD values on the variable totalself-concept**

| Mean/SD | Sources of Variance | SS | DF | MS | F-Value |
|---|---|---|---|---|---|
| | **PERFORMANCE** | | | | |
| 185.04±9.48 | College | 105.64 | 1 | 105.64 | 46.70** |
| 195.56±8.98 | University | | | | |
| | **AGE** | | | | |
| 187.70±10.34 | 1ST Group (17-19 Yrs.) | 0.29 | 1 | 0.29 | 0.13 |
| 192.90±10.32 | 2nd Group (20-22 Yrs.) | | | | |
| | Performance X age | 0.04 | 1 | 0.04 | 0.02 |
| | Within | 2.261 | | | |

*P<.05, ** P<.01

Table-7 gives a clear picture of the results of 2X2 ANOVA pertaining to the total self-concept. The F-value as indicated demonstrates significant differences between college and university female tennis players at p< 0.01 level of confidence on the total self-concept. The mean and SD values of the two groups showed that the university female tennis players have scored higher than the college tennis players with the reading being 195.56±8.98 and 185.04±9.48respectively. No significant differences were found between the two age groups (17-19 yrs. &20-22 Yrs.). Besides the performance by age interaction also did not yield significant results.

The analysis of the data of the study speaks in favour of the University Female tennis players whose performance scored higher than their counterparts, the college tennis players on the physical, intellectual, social, temperamental, educational and total self-concepts. However no significant difference was found between these groups on the moral self-concept. These findings lead to the assumptions that the selection of female tennis players to university teams differentiates from the rest with respect to self-concept. It is a forgone conclusion that persons who possess low self-esteem usually achieve less than those who have higher self-esteem. Higher self-concept by interacting with goal setting, motivation and self-efficacy appears to form a good base to achieve a difficult task. This in a way will be a lesson for the coaches to pay full attention to those players who lack on these variables of self-concept but are otherwise are physically fit. This affirms the belief that the strength of players' conviction in their own effectiveness is likely to affect their coping with difficult situations.However, research has to be

very clear to give credence to the fact whether age and experience leads to improvements in physical and intellectual self-concept. If it affirmates the above fact then growing through sports should be considered as the best way to develop personality. Besides, to understand whether it increases performance that leads to better self-concept or it is improved self-concept that leads to better performance which should be probed thoroughly.

## Conclusion

The conclusions lead to very interesting observations which will lead the teachers of physical education and coaches to monitor their wards perceptions about their physical, intellectual, social and temperamental aspects of the 'self' for the female tennis players. The above aspects will help in removing discrepancies between the capabilities and the perceived capabilities of the players which in turn should return help in optimising the process of training and performance in sports competition especially for the female tennis players.

## References


Elgin,S.L. (2000). State anxiety of women basketball players prior to competition, *Perceptual and Motor Skills,* 83(2):375-383.

Esfahani.and Soflu, H.G.(2010). The comparison of pre-competition anxiety and state anger between female and male volleyball players.*World Journal of Sport Sciences,* 3(4):2237-242.

Eysenck, M.W. and Calvo, M.G.(1992). Anxiety and performance: the processing efficiency theory .*Cognition and Emotion,* 6, 409-434.

Khan, K.S. and Ali, D. (2010). A comparative study of state anxiety among elite and non-elite Indian Universities high jumpers. *Entire Research,*2(1):81-83.

Martens, R., Burton, D., Vealey, R., Bump, L. and Smith, D.(1990). The competitive state anxiety Inventory-2(CSAI-2).*Competitive Anxiety in Sport,* (117-190). Champaign, IL: Human Kinetics.

Mellalieu, S.D.., Neil, R. and Hanton, S. (2006). Self-confidence as a mediator of the relationship between competitive anxiety intensity and interpretation. *Research Quarterly for Exercise and Sport,* 77(2):26-270.

Patel, S. (2011).Comparison of competitive state anxiety components among individual, dual and team sports.*Asian Journal of Physical Education and Computer Science in Sports,* 4(1):148-150.

Powell, K.K. (2009). *The Impact of event group and gender on the relationship between sport anxiety and performance in track and field athletes,* Thesis (M.A.) Abstract , The American University, 48-02:1261.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp130-133**
**Journal Impact factor 0.5190**

# Effect of isometric, isotonic and combined isometric and isotonic exercise on strength and jumping parameters.

**Nita V Chaudhary[1] and Rachana N Patel[2]**
**[1,2]Research Scholar.**

**Abstract:**
The purpose of the study was to determine the effect of isometric, isotonic and combined isometric-isotonic exercises on leg strength and vertical jumping performance. The subjects were 60 male untrained students of Shree N.H. Sarvajanik Vidhyalaya School of average age between 16 to 19 years at Dhinoj-Patan. The subjects were equally assigned using random sampling procedure to three experimental groups which participated in weight training programme for a period of six weeks and one control group. In this tree group, first group performed isometric weight training, second group performed isotonic weight training and third group participated combination of isometric and isotonic weight training exercises. Three groups of fifteen subjects each acted as experimental groups while the fourth group o f15 subjects was control group.
The data on leg strength and vertical jumping performance were recorded before, after every two weeks and at the end of the experimental period of six weeks. The significance of mean differences between the pre-test and post-test scores in each of the variables was analyzed by way of analysis of variance and covariance (F-ratio). The level of significance selected was 0.05. The t-value for leg strength was 6.49 for isometric group, 3.86 for isotonic group and 2.08 for combined group but isometric and isotonic groups were found significant at 0.05 level of confidence with 14 degree of freedom, where as combined group and control group did not show any significant difference. Analysis showed that there was a significant difference between post-test means (15.75) and adjusted post-test means (122.43), where as the pre-test means did not indicate any significant difference among the groups. The t-test for vertical jumping performance showed that there was a significant difference in combined group as compared to other groups. The analysis showed that the improvement of strength in different biweekly training programme was significant in isometric and isotonic groups. The analysis showed that the improvement of vertical jumping performance in different biweekly training programme was significant in combined group.
**Keyword:** Isometric, Isotonic, weight training, leg Dynamometer and belt, strength and jumping parameters

**Introduction:**
A great deal of publicity, both in the professional literature and the press, has accorded isometric exercise as a means of physical fitness improvement. Actually, this form of exercise has been known for a long time by professional physical educators and by weight-training and 'body-beautiful' devotees. Numerous studies have been conducted on isometric exercises, many of which were related to comparisons with isotonic exercises. The impression is given that a few seconds of isometric exercises three times a week will suffice to meet all of one's physical fitness needs. Studies show that this form of exercise has value: however they also demonstrate definite limitations. These limitations should be stressed as they are too generally ignored.
Strength is one of the most important components of physical fitness, which affects the performance in all activities in some form or other. Weight training is not usually thought of as an end in itself, but as a means to an end. The primary objective is not to learn to lift as much weight as possible but to increase strength and power for application to the relevant sport the emphasis should be on the correct exercise, or the power the muscle exerts. The best way to develop strength is through an organized program of weight training. Strength and power are accessible to all. In dynamic (Isotonic) muscle contraction, the muscle either lengthens or shortens. The dynamic muscle contraction results in movement of the body limb or of the whole body. This type

of contraction is most frequent as most of the sports activities are dynamic activities. Hettinger and Muller claimed that if isometric contraction was held just for 6 seconds at 2/3 of maximum strength once a day and for five days a week, the strength improves at a rate of 5 percent per week. Isometric exercises for strength improvement are more common in sports in which there are static phases during the competition activity, e.g. gymnastics, hammer throw, archery etc. Rasch and Morehouse did equate efforts in isometric and isotonic training by comparing the effect of pressing and curling dumbbells with a static movement exerted for the same time at two-thirds of each subjects strength. Mathews and Kruse examined the effects of isotonic exercise of the elbow flexor muscle on the ergo graph and isometric exercise of the same muscles; the training period were for four weeks.

**Methodology:**

Random group design was used for this experimental study because it was considered the most appropriate. The subjects numbering 60 were equally divided into three experimental groups and one control group and each group consisting of 15 subjects. The three experimental groups were given weight training programme for a period of eight weeks including the period utilized for pre-tests and post tests. The control group did not participate in any activity during the experimental period. The training programme for three experimental groups were different, one group performed isometric weight training exercises, second group performed isotonic weight training exercises, and third group trained with combination of isometric and isotonic weight training exercises. The fourth group served as the control. The subjects trained thrice a week i.e. on Mondays, Wednesday and Fridays.

The difference between the pre-test and post-test means of each group in the chosen variable was tested by applying t-test, in order to find out difference, if any on each of the chosen variables before and after the experimental treatment. The mean difference method was applied for this purpose. In order to find out the differential effects of the three exercise regimens, analysis of variance and covariance (F-test) were carried out for the four groups with respect to the mean gains in each chosen variables. To find out the significance of improvement of the biweekly training effect analysis of variance was used. A post-hoc test was applied in cases where F-ratios were significant, to find out which of the differences of the paired means were significant. For testing the hypothesis, the level of confidence was set at 0.05.

**Analysis and Result of the study:**

The data were examined by applying mean difference method (t-ratio) to find out the significant differences if any, between the pre-test and post-test means of chosen variables. The data were further examined by applying analysis of variance as well as by analysis of covariance (F-ratio) of the three experimental groups and the one control group to find out the inter-group variability. To find out the significance improvement of the biweekly training effect analysis of variance was used and same post-hoc t-test was applied to find out the significance differences of the paired means. The subject of the experimental and the control groups were selected at random and the four groups were not equated with reference to the factors examined. Hence, the differences between the initial means of the group at the pre-test had to be taken into account during the analysis of the post-test differences between the mean. This was achieved by the application of analysis of co-variance where the final means were adjusted for differences in the initial means and the adjusted means were tested for significance.

The significant difference between the pre-test and post-test means of the three experimental groups and the control group in leg strength and their t-ratio are presented in Table-1.

**Table-1**

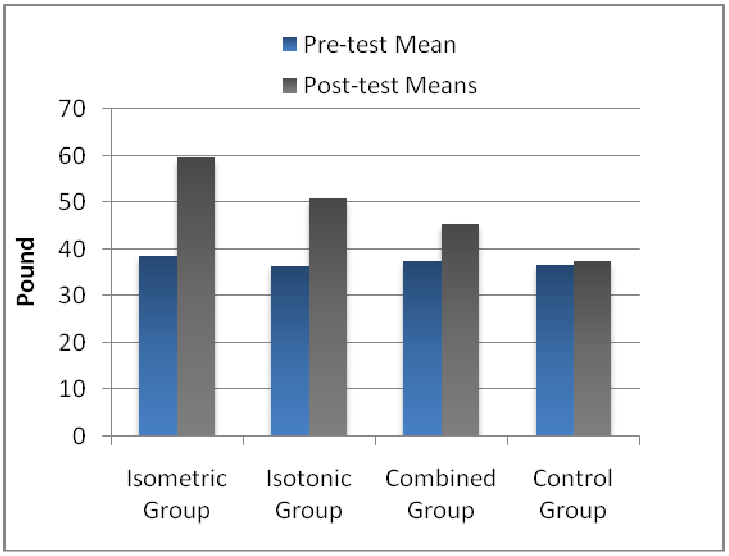
Significance of Difference between Pre-test and Post-test Means of the Three Experimental Groups and the Control Group in Leg Strength

| Groups | Pre-test Means | Post-test Means | Difference between Means | DM | t-ratio |
|---|---|---|---|---|---|
| Isometric | 38.47 | 59.67 | 21.20 | 3.265 | 6.49* |
| Isotonic | 36.40 | 50.93 | 14.53 | 3.765 | 3.86 |
| Combined | 37.27 | 45.33 | 08.06 | 3.872 | 2.08 |
| Control | 36.60 | 37.40 | 00.8 | 2.931 | 0.27 |

*Significance at .05 level of confidence.

The pre-test and post-test mean differences in leg strength for groups (isometric, isotonic, combined isometric-isotonic and control) were 21.20, 14.53, 8.06 and 0.8 respectively (Fig.1).

Figure-1




The significant difference between the pre-test and post-test means of the three experimental groups and the control group in jumping performance and their t-ratio are presented in table-2.

**Table-2**

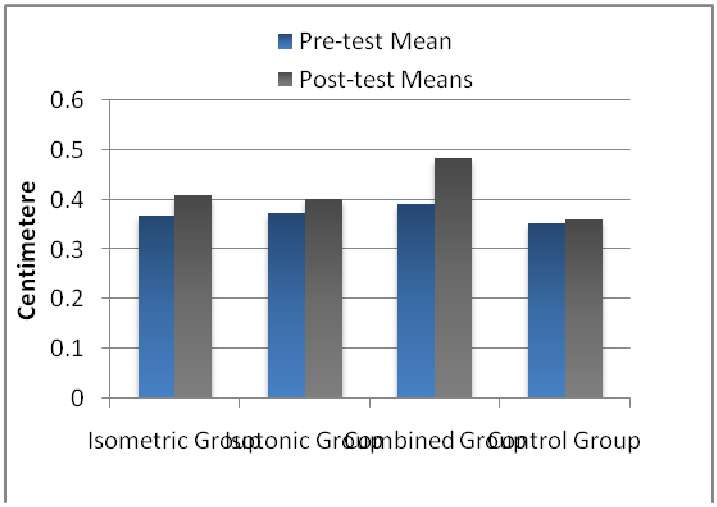
Significance of Difference Between Pre-test and Post-test Means of the Three Experimental Groups and the Control Group in Jumping Performance.

| Groups | Pre-test Means | Post-test Means | Difference between Means | DM | t-ratio |
|---|---|---|---|---|---|
| Isometric | .368 | .409 | .041 | .02 | 2.05 |
| Isotonic | .372 | .401 | .029 | .02 | 1.45 |
| Combined | .391 | .483 | .092 | .02 | 4.60* |
| Control | .353 | .361 | .008 | .02 | .40 |

*Significance at .05 level of confidence. For 14 degree of freedom t-value needed for significance at .05 level was 2.14.

The pre-test and post-test mean differences in jumping performance for groups (isometric, isotonic, combined isometric, isotonic and control) were 0.041, 0.029, 0.092 and 0.008 respectively (Fig-2).

Figure-2



**Conclusion:**

Within the limitations imposed and the experimental conditions, the following conclusions were considered appropriate:

Weight training method was an effective method in developing leg strength of the boys. The group which performed isometric weight training exercises produced better results compared to the performance of other two groups.

Weight training method was an effective method in improving vertical jumping performance. The group which performed the combination of isometric-isotonic weight training exercises produced better results than the other two groups.

Improvement of leg strength from the first week to second week training period was found to be superior to the other period for a short duration training programme for the beginners.

Development of vertical jumping performance from the $4^{th}$ week to $6^{th}$ week training period was found to be superior to the other period for a short duration training programme for the beginners.

**Bibliography:**

[1] "Basic understanding of Physical Fitness" *Physical Fitness Research Digest* 1 (July 1971):1.

[2] Jack Wilmore, "Circuit Weight Training" *Scholastic Coach* 46 (August 1976):28.

[3] Gene Hooks, *Application of Weight Training to Athletics* (Englewood Cliffs: N.J. Prentice Hall, Inc., 1965).

[4] Frank W. Dick, *Sports Training Principles* (Lepus Books London, 1980), p.182.

[5] Vidyasagar, *Training Systematics in Throwing* (Patiala: The Netaji Subhas National Institute of Sports, 1979), pp.2-3.

[6] Hardyal Singh, *Sports Training: General Theory and Methods* (Patiala: Phulkian Press, 1984), p.15.

[7] Philip J. Rasch and Laurence E. Morehouse, "Effect of static and Dynamic Exercises on Muscular Strength and Hypertrophy" *Journal of Applied Physiology* 11 (1957):29.

[8] Donald K. Mathew and Kruse Robert, "Effects of Isometric and Isotonic Exercises on Elbow Flexor Muscle Groups" *Research Quarterly* 28 (December 1957): 26.

[9] Blanerd Bangerter, "Contributive Components in the Vertical Jump" Research Quarterly 39 (October 1968):432.

[10] Richard A. Berger, "Effects of Dynamic and Static Training on Vertical Jump Ability" *Research Quarterly* 37 (December 1966): 419.

[11] David H. Clarke and H. Harrison Clarke, *Research Process in Physical Education, Recreation and Health,* (Engle-wood Cliffs; N.J. Prentice Hall, Inc., 1970), p.210.

[12] Henry E. Garrett, *Statistics in Psychology and Education* (Bombayl Vakils, Jeffer and Simons Pvt. Ltd., 1969), pp.269-299.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp134-135**
**Journal Impact factor 0.5190**

# Suicidal Behaviour among adolescent students

**T.Prithi Reddy, Ph.d Scholar, Faculty of Education, OU,Hyd**

**Introduction:** Adolescence period is the most crucial period in the life of human beings. It is a period of transition from childhood to adulthood which implies many developmental changes.Popularly this is known as the teenage years from 13 years to 19 Years. Adolescence is period of rapid physical, physiological and psychological development during which an adolescent student has to face several problems that may lead to turmoil and conflict resulting in stress and strain. The Problems in adolescent may lead to anxiety, depression and mental illness which may lead to suicide.Suicide is the second leading cause of death - following motor vehicle accidents - among teenagers and young adults. On average, adolescents aged 15 to 19 years have an annual suicide rate of about 1 in 10,000 people. Among youths 12 to 16 year of age, up to 10% of boys and 20% of girls have considered suicide. Gay and lesbian adolescents are more likely to attempt suicide than their heterosexual peers. Suicide rates are 5 to 7 times higher among First Nations and Inuit teens.The teen years are an anxious and unsettling period as boys and girls face the difficulties of transition into adulthood. It is a period in life that is often confusing, leaving teens feeling isolated from family or peers.Unfortunately, some may at one point or another perceive suicide as a permanent answer to problems that are more often than not just temporary. The self doubts, confusion, and pressures to succeed or conform can come at a high price for troubled adolescents.Girls generally attempt suicide more often than boys, but boys are about 4 times more likely to die from the suicide attempt. This is because the methods that boys choose - often using firearms or hanging - are more lethal than those chosen by girls, namely drug overdoses or cutting themselves.

## Causes of Adolescent Suicide

Many troubling and difficult situations can make a teen consider suicide. The same emotional states that make adults vulnerable to considering suicide also apply to adolescents. Those with good support networks (e.g., among family and peers, or extracurricular sport, social, or religious associations) are likely to have an outlet to help them deal with their feelings. Others without such networks are more susceptible during their emotional changes, and may feel that they're all alone in times of trouble.Apart from the normal pressures of teen life, specific circumstances can contribute to an adolescent's consideration of suicide. It's especially difficult when adolescents are confronted with problems that are out of their control, such as:

divorce ,a new family formation (e.g., step-parents and step-siblings),moving to a different community,physical or sexual abuse ,emotional neglect ,exposure to domestic violence alcoholism in the home and substance abuse

**Many suicides are committed by people who are depressed.** Depression is a mental health disorder. It causes chemical imbalances in the brain, which can lead to despondency, lethargy, or general apathy towards life. Almost half of 14- and 15-year-olds have reported feeling some symptoms of depression, which makes coping with the extensive stresses of adolescence all the more difficult. Symptoms of depression in youth are often overlooked or passed off as being typical "adolescent turmoil."Another serious problem that can lead teens to suicide - or aid in their plans to end their lives - is the easy access many of them have to firearms, drugs, alcohol, and motor vehicles. For the general population, about 30% of suicides involve firearms. Of all firearm-related deaths that occur, about 80% are suicides.

**Warning signs and risk factors**

**Suicidal tendencies don't just appear out of the blue: People usually display a number of warning signs** when things seem so wrong in their lives that they've simply given up hope. Because adolescence is such a turbulent time, it may be difficult to distinguish the signs that lead to suicide from the changing, sometimes uncertain but otherwise normal behaviour of teens.

**Behaviour changes to watch for are:**withdrawal from family and peers,loss of interest in previously pleasurable activities,difficulty concentrating on schoolwork, neglect of personal appearance ,obvious changes in personality,sadness and hopelessness ,changes in eating patterns, such as sudden weight loss or gain ,changes in sleep patterns ,general lethargy or lack of energy,symptoms of clinical depression,violent actions, rebellion, or running away ,drug and alcohol use ,symptoms that are often related to emotional state (e.g., headaches, fatigue, stomach aches) loss of ability to tolerate praise or rewards .

More obvious signs that an adolescent may be suicidal include low self-esteem and self-deprecating remarks. Some teens come right out and talk or write about their suicidal thoughts - this should be taken seriously, and not ignored with the hope that it's a passing phase. Any previous attempts at suicide are loud and clear cries for help, which demand responses before it's too late.

**How to help:**It's essential that you take suicidal behaviour or previous attempts seriously - and get assistance quickly**.** Aside from professional treatment, a suicidal teen needs to know there are people who care, and who are available to talk to. Good support means listening to what's troubling somebody without passing judgment on his or her feelings. A person should be reassured that there are always solutions to problems or ways other than suicide for coping with them. Giving an adolescent the chance to open up and talk about his or her feelings will help relieve some of the distress of those intense emotions, and make that person feel less alone.

**Don't hesitate to bring up the subject of suicide, and to ask direct questions.** Somebody who hasn't considered ending their life isn't going to adopt the idea simply because the possibility has been raised. On the other hand, for individuals who are thinking about suicide, your concern will only be reassuring. At the same time, people can take the opportunity to open up about their distress.Some parents may find that their adolescent child resists their advances and isn't willing to confide in them. When teens insist their parents just "don't understand," it might be a good idea to suggest they talk to a more objective or emotionally neutral person. This can include other family members, religious leaders, a school counsellor, a coach, or a trusted doctor.**Restricting access to firearms and ammunition is also an important preventive measure.** Weapons kept in the home increase the risk that suicide attempts will be successful, by giving a suicidal adolescent the means to take their own life.

**Getting treatment**

**It is very important to seek professional help for the adolescent who may be suicidal.** Guidance counsellors at schools or counsellors at crisis centres can help ensure that a distressed teen receives the needed assistance.As the vast majority of adolescents who commit suicide have depressive symptoms, recognition and evaluation of clinical depression - a treatable medical condition - is essential. Physicians, including psychiatrists, provide both one-on-one counselling and medical treatment for the biochemical causes of depression.Psychological counselling will help a teen develop effective mechanisms for coping with problems. These will be of value long after adolescence has ended, when a person has to face many of the stresses routinely encountered during adulthood.

References:.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp136-137**
**Journal Impact factor 0.5190**

# Impact Of Aerobic And Anaerobic Training On Blood Lipid Profiles

***M. Ravinder Rao **Dr.Viplav Duth Shukla ***Dr.E.Yadaiah**

*** Physical Director, Govt. Degree College, Khairatabad, Hyderabad.**
**** Lecturer in Chemistry, BJR Govt. Degree College, Bazarghat, Hyderabad.**
*****Lecturer in Chemistry, Govt. Degree College, Khairatabad, Hyderabad.**

**ABSTRACT:** The aerobic training and anaerobic training reduce the Total Cholesterol, Triglycerides and LDL cholesterol levels. Different types of exercise programms on the lipid profiles of the individuals might contribute for the enhancement of knowledge in this area, and will be certainly useful to create different protocols of exercise to different individuals basing on the requirements of the individuals. Awareness of Anaerobic training and Aerobic training will help in creating new ideas, and may lead to considerate the knowledge on the effects of exercise on the individuals health related physical fitness. Lack of excercise (Detraining) for one month may increase the Total Cholesterol, Triglycerides and LDL cholesterol levels.

Key words*: Aerobic training, Anaerobic training, Lipid profiles.*

**Introduction:**

In general, active lifestyle has been recognized as the very best source to maintain and develop optimum fitness levels especially of health related physical fitness. Inactive and indolent life styles would cause to increase various precipitating factors of deadly degenerative diseases like Diabetes Mellitus, Hypertension, Coronary Heart disease etc., American college of sports medicine, which is one of the premier institutes on sports medicine, endorses the idea of active life style, to protect one's health in good condition and to escape from various degenerative diseases.Inactive lifestyle will lead an individual to become obese, and this obesity of an individual is identified as the major risk factor of health of an individual. Obesity leads to major health risks like hypertension, diabetes, heart problems, arthritis, back pain etc [1](Larry G. Shaver).According to Harrold, "The concepts of health related physical fitness include the elements of muscular strength, muscular endurance, circulo-respiratory endurance, flexibility and freedom from obesity". [2] (Harrold M. Barrow et.al. 4th edition.)

Aerobic metabolism and aerobic training:

When oxygen is available in sufficient quantities, aerobic metabolism provides energy for the working cells of the muscle, while the breakdown of glucose from glycogen. Where a series of chemical reactions take place simultaneously. Performances of long duration activities like recreational jogging, long walking are aerobic activities/ training. As the work is prolonged and the glucose supply is nearly depleted a greater contribution of the energy fuel comes from the stored fat as well as from the fattyacids in the blood. [3](Larry)

Anaerobic metabolism and anaerobic training:

Anaerobic metabolism is otherwise called as anaerobic glycolysis is particularly important and necessary to attend physical activities, when the body is unable to supply oxygen sufficiently or when the activity is very short and high intensity, short duration. For example when the body is unable to supply oxygen to the cells insufficient quantities such as in sprinting. Those exercises that are performed using the anaerobic metabolism are called anaerobic activities/training.

Lipoproteins:

Lipoproteins are the organic compound formed from lipids and proteins that transport fat and cholesterol through the blood stream and limp, lipids and sterols circulate as a part of macro molecular complex, known as lipoproteins. There are the means by which insoluble lipids are able to circulate in aqueous medium. Lipoproteins consist of various combinations of cholesterol, triglycerides and phospholipids with specific peptides known as apolipoproteins. LDL: LDL cholesterol is a specific kind of lipoprotein that is the form in which cholesterol in transported in the blood. LDL cholesterol is called "Bad' cholesterol.

HDL: HDL cholesterol is a group of proteins found in the blood plasma and limph that are combined with lipids. They transport cholesterols from the tissue the liver to be broken down and excreted HDL cholesterol is called "Good" cholesterol.

VLDL: VLDL-C is specific kind of lipoprotein when found in excess in the blood is thought to increase the risk of author sclerosis by carrying cholesterol to the tissue.

Aerobic training protocol:

To initiate and to maintain the utility of oxygen during the each training session for a longer period, the following physical exercises can be incorporated in each training session for a period of three months. All the time the idividuals should monitor their pulse rates to see that their pulse rate may not go beyond 60% to 70% of their maximum heart rate. The protocol of Aerobic training as follows:

1. Walking for ten minutes slowly increasing the pace.
2. Calisthenics and light stretching immediately after walk.
3. Slow and continuous jogging for four kilometers keeping their heart rate at 60% to 70% of the maximum heart rate.
4. Warm down and cooling the body slowly.

The above routine can be continued for four times per week and for two months continuously.

Anaerobic training protocol:

Anaerobic training consists of following protocol of exercises, which will initiate Anaerobic metabolic energy releasing path way or as a major source of energy. Fast and vigorous exercise protocol should be implemented.The actual training protocol for three months as follows in each session.

1. Slow jogging for one kilometer and then for stretching and calisthenics.
2. Acceleration sprints, with a speed of 50% to 60% of the maximum speed for 10 times with a recovery period of 3 minutes for each repetition, while walking back slowly.
3. Cool down the body by slow limbering down exercises.

The above routine can be continued for four times per week and for two months continuously.

Performing the aerobic training and anaerobic training for stipulated period will have impact on the levels of blood lipid profile. The change in the lipid profile will also depend on the type of the training, volume of load [4](Hardayal Singh 1991) and duration. The impact of training on lipid profile will also depend on the continuation of exercise. Lack of exercise (detraining) will alter the lipid profile and increase in LDL occurs [5](Carol S, Cooke et al.).

**Conclusion:**

Hence it is concluded that, the aerobic training and anaerobic training reduce the Total Cholesterol, Triglycerides and LDL cholesterol levels. It also strongly emphasize that, lack of excercise (Detraining) for one month may increase the Total Cholesterol, Triglycerides and LDL cholesterol levels.

*References:*

Larry G. Shaver, *Essentials of exercise Physiology*; Burguess publishing co.. Minnesota; 1982.

Harold M. Barrow, Rosemary Mc. Gee and Kathleen A. Tritschler, *Practical measurement in Physical Education and Sport*, Lee and Febiger of Philadelphia, U.S.A: Fourth edition., (1989)P.103.Arthur C. Guyton: *Text book of Medical Physiology*; W.B. Saunders Company; 1991.p.780. Hardayal singh, Science of sport training; D.V.S.publications, New Delhi.1991.

Carroll S. Cooke CB. Butterly J. et.al. *Association leisure time physical activity and obesity with altherogenic lipo protein lipid markers among non-smoking middle aged men*, Scandinarian Journal of medicine and sciocucien spoax:2001:11(1):P-38-46

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp138-141**
**Journal Impact factor 0.5190**

# Prediction Model To Estimate The Peak Expiratory Flow Rate Of Healthy Indian College Male

**Sukanta Saha[1] & Brajanath Kundu[2]**
**[1]Department of Physical Education, Memari College, Memari, Burdwan, West Bengal, India**
**[2] Department of Physical Education, Visva-Bharati University, Santiniketan, West Bengal**

**ABSTRACT**
The aim of the study was to establish a multiple regression model for predicting Peak Expiratory Flow Rate (PEFR) of the Indian college level male students considering selected anthropometric and physiological predictors. Peak expiratory flow rate (PEFR), an important test to assess overall lung function, was measured on 625 healthy college level Indian male students of 18-30 years in age ranged with the help of Mini Wright's Peak Flow Meter in a standing position. Anthropometric and physiological measurements i.e. age, height, weight, BMI, chest circumference, % fat, BSA, and $Vo_{2max}$ were calculated using standard procedures. Statistically significant positive correlation ($p<.01$) were found between PEFR and age, BMI, chest circumference and $Vo_{2max.}$ whereas height and % fat were found significantly ($p<.01$) negative correlation. The prediction equation for Indian college level (18-30 years) male students was developed on the basis of independent variables i.e. age, height, weight, BMI, chest circumference, % fat, BSA, and $Vo_{2max.}$ Multiple regression analysis produced a model resulting in $R^2$ = 72.7% and $R^2$ (adjusted) = 72.4%, with a prediction equation as follows: PEFR= 2027 - 19.7 Height (Cm) - 7.96 Weight (kg) + 1.70 Chest Circumference (cm) + 5.05 $Vo_{2max.}(ml{\cdot}kg^{-1}.min^{-1})$ - 37.5 BMI - 3.10 % Fat + 1598 BSA($m^2$) + 0.691 Age(Y).
**Key Words: Peak Expiratory Flow Rate, Anthropometry, Multiple Regression etc**

## INTRODUCTION

Peak expiratory flow rate (PEFR) is the maximum rate of airflow achieved during a forced expiration after maximal inspiration. It is well established that lung functions including PEFR are affected by sex, age, height, chest circumference, body surface area, ethnicity, posture, environment, diurnal variations, physical activity etc (1-8, 10-12, 15, 16). Peak expiratory flow rate recording is one of the useful and simple parameter in the evaluation, monitoring, management and follow up of the lung function status in the general population and also making a diagnosis and monitoring treatment of patients with bronchial asthma and chronic obstructive lung disease.The portability of the peak flow meter and the simplicity of the PEFR test make it particularly suitable for epidemiological studies of respiratory function. PEFR measurement by peak flow meter is an easy way to measure lung functions in the field study.Many studies on PEFR in the general population have been carried out previously, both in India (2-4, 7, 8, 11) and abroad (1, 5, 6, 10, 12, 15, 16). Various authors have used multiple regression analysis to explore the relationship between PEFR and age, height and weight (7, 10-12). However, these authors did not used % body fat, BMI, body surface area, chest circumference and $Vo_{2max.}$ for predicting PEFR. Therefore, taking into anthropometric and physiological considerations, the present study was carried out to establish a prediction equation of peak expiratory flow rate values of college level male students in West-Bengal on the basis of age, height, weight, BMI, chest circumference, % body fat, body surface area and $Vo_{2max.}$ The objectives of the present study are:

1.To assess the selected anthropometric and physiological characteristics and PEFR of the subjects;

2.To explore the interrelationships between PEFR and selected anthropometric and physiological characteristics; and

3.To develop a regression equation on the basis of intercorrelaions where PEFR become the dependent variable and anthropometric and physiological characteristics are the independent variables.

## MATERIAL AND METHODS

### 2.1. Subjects

The present study was conducted on the students of nineteen (19) colleges located in nine (9) different districts of West-Bengal in India. Six hundred twenty five (625) male students (age range 18-30 years) were randomly selected and participated in this study. The subjects gave their written acceptance beforehand to act voluntarily as the subjects in this study. They were all non- smokers and so-called non-athletes but usually engaged in their daily living activities.

All institutional policies concerning the human subjects in research were followed. Ethical approval from the competent authority of the institutions was taken.

After selection of the subjects the anthropometric measurements such as height, weight, chest circumference, seven skinfolds (Pectoral, Axilla, Abdominal, Suprailiac, Subscapular, Triceps and Midthigh) were measured using standard procedures. The physiological measurements i.e.$Vo_{2max}$ and Peak Expiratory Flow Rate (PEFR) were also obtained using prescribed methods. Following formulas were used to calculate BMI, body surface area, % body fat and $Vo_{2max.}$ :

### 2.2. Body Mass Index (BMI):

BMI = [Weight in Kg. ÷ (Height in mts.)$^2$]

### 2.3. Body Surface Area (BSA) as per Mosteller's Formula (1987):

BSA ($m^2$) = [{Height (cm.) × Weight (Kg.)} ÷ 3600]$^{1/2}$

### 2.4. Body density as per Jackson and Pollock's (1978) equation:

Body density = 1.112 – 0.00043499($\sum$7skf) + 0.00000055($\sum$7skf)$^2$ – (0.00028826($X_2$)

Where, $\sum$7skf = sum of 7 skinfolds in mm i.e. Pectoral, Axilla, Abdominal, Suprailiac, Subscapular, Triceps and Midthigh. $X_2$ = Age in years.

### 2.5. % Body Fat as per Siri Equation (1956):

% Body Fat = [(4.95 ÷ Body Density) - 4.5] × 100

### 2.6. $Vo_{2max.}$:

Modified Queens College Step Test was used for assessing $Vo_{2max.}$

$Vo_{2max.}$ (ml.kg$^{-1}$.min$^{-1}$) = 111.33 – (0.42 × step test pulse rate, beats/minute)

### 2.7. Peak Expiratory Flow Rate:

Peak Expiratory Flow Rate (L.min$^{-1}$) was measured in standing position using Mini Wright's Peak Flow Meter. Prior to measuring PEFR, clear instructions were given regarding the technique of the test and it was also demonstrated to each subject. The test was performed three times on each subject and the best of the three attempts was selected for data computation.

### 2.8. Statistical Analysis:

After data collection, data analysis was performed using Statistical Package for Social Sciences (SPSS, Version 10.0). Mean, standard deviation (SD), minimum value, maximum values were obtained for all the selected variables. Multiple coefficients of correlations were performed to determine the relationships among the variables. Step-wise multiple linear regression equation was used to develop a standard prediction model. Peak Expiratory Flow Rate (PEFR) was the dependent variable while age, height, weight, BMI, body surface area (BSA), chest circumference, % body fat, and $Vo_{2max}$ were the independent variables.

## RESULTS

The Mean and SD of the age, height, weight, BMI, Chest circumference, % Body fat, Body Surface Area (BSA), $Vo_{2max}$ and PEFR of the subjects were shown in the Table-I. BMI, % fat, BSA, $Vo_{2max}$ and PEFR of 22.14 (Mean age) years aged male subjects were within the normal range as evident by different authors (3- 6, 10, 12).

Table- I

Mean and SD of Anthropometric and Physiological characteristics of the College Male Subjects (18-30 yrs in age)

| | Mean | SD | Minimum Value | Maximum Value |
|---|---|---|---|---|
| Age (Yrs) | 22.14 | 2.28 | 18.00 | 30.00 |
| Height (cm) | 168.20 | 5.53 | 153.00 | 189.50 |
| Weight (Kg) | 59.19 | 5.98 | 42.50 | 82.50 |
| BMI ($Kg/m^2$) | 20.91 | 1.70 | 15.04 | 26.77 |
| Chest Circumference (cm) | 86.62 | 4.91 | 73.00 | 108.50 |
| % Fat | 13.06 | 3.47 | 6.13 | 22.41 |
| BSA ($m^2$) | 1.66 | 0.10 | 1.35 | 2.01 |
| $Vo_{2max.}$( $ml.kg^{-1}.min^{-1}$) | 52.56 | 6.65 | 6.65 | 47.49 |
| PEFR ($l.\ min^{-1}$) | 505.10 | 55.40 | 350.00 | 600.00 |

A good number of studies (1-3, 7, 10-12) were carried out in India and abroad for the development of prediction equation of PEFR as dependent variable on the basis of age, height, weight, body surface area (BSA), bone- free lean body mass (BF-LBM), bone mineral content (BMC), fat mass (FM), body composition, fat distribution, body mass index (BMI), chest circumference as the independent variables. It is a fact that there is a close relationship between $Vo_{2max.}$, an important physiological condition, and PEFR. The present authors considered age, height, weight, chest circumference, $Vo_{2max.}$, % fat, body mass index ( BMI), body surface area(BSA) as independent variables to predict PEFR. The intercorrelaions matrix among the variables was arranged in the Table-II.

Table- II

Inter-Correlations Matrix of the Anthropometric and Physiological characteristics of the subjects

| | Age | Height | Weight | BMI | Chest Cir | % Fat | BSA | $Vo_{2\ max.}$ | PEFR |
|---|---|---|---|---|---|---|---|---|---|
| Age | _ | | | | | | | | |
| Height | -0.05 | _ | | | | | | | |
| Weight | 0.13** | 0.59** | _ | | | | | | |
| BMI | 0.21** | -0.06 | 0.76** | _ | | | | | |
| Chest Cir | 0.20** | 0.32** | 0.66** | 0.56** | _ | | | | |
| % Fat | -0.054 | 0.069 | 0.27** | 0.28** | 0.27** | _ | | | |
| BSA | 0.10** | 0.74** | 0.97** | 0.60** | 0.63** | 0.24** | _ | | |
| $Vo_{2\ max.}$ | 0.26** | -0.34** | -0.00 | 0.27** | 0.08* | -0.48** | -0.08* | _ | |
| PEFR | 0.28** | -0.34** | 0.04 | 0.32** | 0.16** | -0.42** | -0.05 | 0.82** | _ |

**** Significant at the .01 level** ***Significant at the .05 level**

Table- III

Prediction values of PEFR based on age, height, weight, BMI, chest circumference, % body fat, body surface area (BSA), $Vo_{2max.}$

| **Predictor** | **Coefficient** | **SE Coefficient** | **T** | **P** |
|---|---|---|---|---|
| Constant | 2026.8 | 481.6 | 4.21 | 0.000 |
| Height | -19.67 | 4.69 | -4.19 | 0.000 |
| Weight | -7.96 | 6.84 | -1.16 | 0.245 |
| Chest Circumference | 1.69 | 0.33 | 5.14 | 0.000 |
| **$Vo_{2max.}$** | 5.05 | 0.25 | 19.63 | 0.000 |
| BMI | -37.54 | 11.41 | -3.29 | 0.001 |
| % Fat | -3.10 | 0.45 | -6.78 | 0.000 |
| BSA | 1598.4 | 541.3 | 2.95 | 0.003 |
| Age | 0.69 | 0.54 | 1.26 | 0.207 |
| S = 29.13 | | $R^2$ = 72.7% | $R^2$ (adjusted) = 72.4% | |

The Multiple linear regression model was developed to predict PEFR.

**The Prediction Model of PEFR for the College level Indian Male Students:**

**PEFR= 2027 - 19.7 Height(Cm) - 7.96 Weight(kg) + 1.70 Chest Circumference(cm) + 5.05 $Vo_{2max.}$($ml.kg^{-1}.min^{-1}$) - 37.5 BMI - 3.10 % Fat + 1598 BSA($m^2$) + 0.691 Age(Y).**

## DISCUSSIONS

Pearson's Product Moment correlation was employed to obtain coefficient of correlations between PEFR and height, weight, chest circumference, $Vo_{2max.}$, BMI, % fat, BSA and age and an intercorrelaions matrix was developed (Table-2). The PEFR was significantly ($p< .01$) correlated with age, BMI, Chest circumference and $Vo_{2max.}$ Most studies reported that height and weight were positively and significantly correlated with PEFR whereas a negative but significant ($p< .01$) correlation with height and insignificant correlation between PEFR and weight were observed in this study. % body fat was negatively and significantly ($p< .01$) correlated with PEFR and also BSA was found negative and insignificant relation with PEFR as evident in the Table-II. Highest correlation was observed with $Vo_{2max.}$ ($r = 0 .82$). Some studies (3, 4, 8, 16) suggested that weight and BSA were the independent predictors of PEFR but in this study the coefficient of correlation between weight and PEFR was positive but insignificant on the other hand BSA and PEFR were found negative and insignificant. The linear model was simple, convenient and adequately explained the variations in peak expiratory flow rate. The coefficients of multiple determinations was moderately high ($R^2$=72.4%) that indicated that a high percentage of the variation in PEFR can be explained by the variation in the independent variables. Thus, this equation is reasonably reliable in predicting PEFR.

## CONCLUSIONS

1.The prediction model for PEFR developed in this study is a reliable, valid for the college level students as the study conducted on a large sample covering large area in West Bengal, India.

2.This prediction model may be utilized by the Physical Educationists, Sports Scientists, Clinicians, and Pulmonary Physiology researchers for the research and clinical diagnosis of lung function and PEFR for 18-30 years of age ranged male.


## ACKNOWLEDGEMENTS

Authors were grateful to the students who participated as subjects in this study. Authors also acknowledge the concerned Heads of the institutions for granting necessary permission and cooperation for conducting human studies.


## REFERENCES


1. Benjaponpitak S., Driekwattanachai C., Kraisarin C., Sasisakulporn C. Peak expiratory flow rate values of students in Bangkok. *J Med Assoc Thai*. 1999, **82**(1): 137-143.
2. Bondopadhyay P., Verma S.S., Lakhera S.C., Kishore N., Ghadiok A.K., Kain T.C., Butani B. Age and height as predictors of peak expiratory flow rate in Indian girls. *Ann Hum Biol*. 1993. **20**(2): 147-153.
3. Das K.K., Dhundasi S.A. A study on predictors of peak expiratory flow rate in Muslim subjects (aged 18 to 20 years) of Karnataka. *Indian J Physiol Pharmacol*. 2002, **46**(3): 321-327.
4. De A.K., Roy A.S., Ray A., Debnath P.K. Simple anthropometry and peak expiratory flow rate in elite south Asian athletes. *J Sports Med Phys Fitness*. 1991, **3**(4): 596-598.
5. Dhungel K.U., Parthasarathy D., Dipali S. Peak expiratory flow rate of Nepalese children and young adults. *Kathmandu University Medical Journal*. 2008, **6**(3): 346-354.
6. Ebomoyi M.I., Iyawe V.I. Variations of peak expiratory flow rate with anthropometric determinants in a population of healthy adults Nigerians. *Niger J Physiol Sci*. 2005, **20**(1-2): 85-89.
7. Gupta C.K., Mathur N. Statistical models relating peak expiratory flow rates to age, height and weight in men and women. *J Epidemiol Community Health*. 1982, **36**(1): 64-67.
8. Jain S.K., Kumar R., Sharma D.A. Peak expiratory flow rate in relation to body surface area in north Indian adults. *J Assoc Physicians India*. 1982, **30**(7): 429-431.
9. Mathur N., Rastogi S.K., Husani T., Gupta B.N. Lung function norms in healthy working women. *Indian J Physiol Pharmacol*. 1998, **42**: 245-251.
10. Mohamed E.I., Maiolo C., Iacopino L., Pepe M., Di Daniele N., De Lorenzo A. The impact of body-weight components on forced spirometry in healthy Italians. *Lung*. 2002, **180**(3): 149-159.
11. Prasad R., Verma S.K., Agrawal G.G., Mathur N. Prediction model for peak expiratory flow in north Indian population. *Indian J Chest Dis Allied Sci*. 2006, **48**(2): 103-106.
12. Pulickal A.S., Fernandez G.V. Peak expiratory flow rate in healthy rural south Indian school children predicated from body height. *Indian J Public Health*. 2007, **51**(2): 117-119.
13. Raju P.S., Prasad K.V., Ramana Y.V., Balakrishna N., Murthy K.J. Influence of socioeconomic status on lung function and prediction equations in Indian children. *Pediatr Pulmonol*. 2005, **39**(6): 528-536.
14. Rastogi S.K., Mathur N., Clerk S.H. Ventilatory norms in healthy industrial male workers. *Indian J Chest Dis Allied Sci*. 1983, **25**: 186-195.
15. Santana H., Zoico E., Turcato E., Tosoni P., Bissoli L., Olivieri M., Bosello O., Zamboni M. Relation between body composition, fat distribution and lung function in elderly men. *Am J Clin Nutr*. 2001, **73**(4): 827-831.
16. Wese F.X., Gaum L.D., Lui T.P., Wong A.K., Hardy B.E., Churchill B.M. Body surface related flow rate nomograms in a normal pediatric population. *Acta Urol Belg*. 1989, **57**(2): 467-474.

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp142-143**
**Journal Impact factor 0.5190**

# A Comparative Study Of Speed Among Lawn Tennis Players And Badminton Players Of Osmania University

**Prof.L.B.Laxmikanth Rathod, Secretary, Inter University Tournaments, OU**

**Introduction:**

Tennis is a athletically challenging sport. It requires flexibility, strength, power, agility, speed, body composition, and aerobic & anaerobic fitness. Players must train train to the best of their ability. There is an array of training equipment for tennis, some to strengthen a specific area in a player's athletic needs. But there are some products that are more basic, and can help any player training at any age. For a trainee to be at their athletic peak is crucial in succeeding at tennis. And this equipment is sure to help anyone who wants to be better.Tennis training aids will assist you in training for tennis. They can come in the form of raquets, balls, and many other things.Speed plays very important role in the performance of Tennis.

.

The Physical demands on tennis players have changed considerable in the last few years. This may be for a number of reasons, for instance modern technology has produced lighter, stronger rackets and faster tennis balls.Physical strength,speed and fitness must be developed if a player is to compete successfully in matches that may be long and demanding.

**Badminton** is a racquet sport played by either two opposing players (singles) or two opposing pairs (doubles), who take positions on opposite halves of a rectangular court that is divided by a net. Players score points by striking a shuttlecock with their racquet so that it passes over the net and lands in their opponents' half of the court. Each side may only strike the shuttlecock once before it passes over the net. A rally ends once the shuttlecock has struck the floor, or if a fault has been called by either the umpire or service judge or, in their absence, the offending player, at any time during the rally.

The shuttlecock (or shuttle) is a feathered (or plastic, mainly in uncompetitive games) projectile whose unique aerodynamic properties cause it to fly differently than the balls used in most racquet sports; in particular, the feathers create much higher drag, causing the shuttlecock to decelerate more rapidly than a ball. Shuttlecocks have a much higher top speed, when compared to other racquet sports. Because shuttlecock flight is affected by wind, competitive badminton is played indoors. Badminton is also played outdoors as a casual recreational activity, often as a garden or beach game.

Since 1992, badminton has been an Olympic sport with five events: men's and women's singles, men's and women's doubles, and mixed doubles, in which each pair consists of a man and a woman. At high levels of play, especially in singles, the sport demands excellent fitness: players require aerobic stamina, agility, explosive strength, speed and precision. It is also a technical sport, requiring good motor coordination and the development of sophisticated racquet movements.

.
Maintaining good flexibility is important not only to reduce injuries, but the movements and footwork of the sport also demand great flexibility. Therefore, try to warm-up and cool-down properly when training. I know we are all pressed for time and find it difficult to find time to warm up and stretch, but it is very important and will help many players actually improve their game.

**Methodology:**
AIM: To find out the Speed between Male Badminton and Male Lawn Tennis Players .

**Sample:**
The sample for present study consists of 20 Male Badminton and20 Male Tennis Players of Osmania University those who have participated in the O.U. Coaching for the year 2012-13.

**Procedure Of Data Collection**:
The Badminton and Lawn Tennis Players are made to run 50 Meters in each batch of two members. The timing is taken by the Qualified Officials at L.B.Stadium.
50 Meters Run:
Purpose: To measure the speed among the Table Tennis and Lawn Tennis Players.
Equipment:
Two stop watches or one with a split second timer.
Description:
It is preferable to administer this test to two players at a time. Both have to take standing start position behind the starting line. The starter will use the command on your marks and gun will be fired.
Rules:
The starter may take any position behind the starting line. On the command on your marks and gun fire the student runs as fast as he can across the finishing line. Do not slow up until you across the finish line. Then he may down slow gradually.
Scoring: The score is the elapsed time to the nearest tenth of a second between the starting signal and the instant the student crosses the finish line.

**Results And Discussion:**
Table – I is showing the speed among the Badminton and Lawn tennis Players.

Table - I

| Test Item | Group | Number | Mean | Std. Deviation | Std.Error Mean | t | df | Sig.(2tailed) |
|---|---|---|---|---|---|---|---|---|
| 50 M Run | Lawn Tennis | 20 | 7.10 | 0.24 | 0.08 | -1.81 | 38.00 | 0.09 |
| 50M Run | Badminton | 20 | 7.38 | 0.46 | 0.15 | | | |

It was found that the average speed of Lawn Tennis Players are 7.10 and Badminton Players are 7.38. Lawn Tennis Players are having good speed compare to the Badminton players.

**Conclusions:**
It is concluded that Lawn Tennis are having good speed compare to the Badminton Players. Speed Training must be given to all Lawn Tennis Players and Badminton Players to enhance the performance.
**Recommendations:**
The similar studies can be conducted on different sports and games.

**References**:
Science of Sports Training, Hardyal Singh
Wikipaedia Lawn Tennis and Badminton

**ISSN 0975-7732**
**Asian Journal of Physical Education and Computer Science in Sports**
**Volume.7 No.1 pp144-145**
**Journal Impact factor 0.5190**

# A Comparative Study on Anxiety among Volley Ball and Kabbadi Players of Medak District in Andhra Pradesh

**C.M.Pruthvi Raju**
**P.G. H.M.Z.P.H.S.Kanna Ram Medak**

## INTRODUCTION:

**Volleyball** is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964.The complete rules are extensive. But simply, play proceeds as follows: a player on one of the teams begins a 'rally' by serving the ball (tossing or releasing it and then hitting it with a hand or arm), from behind the back boundary line of the court, over the net, and into the receiving team's court. The receiving team must not let the ball be grounded within their court. The team may touch the ball up to 3 times but individual players may not touch the ball twice consecutively. Typically, the first two touches are used to set up for an attack, an attempt to direct the ball back over the net in such a way that the serving team is unable to prevent it from being grounded in their court.

The rally continues, with each team allowed as many as three consecutive touches, until either (1): a team makes a *kill*, grounding the ball on the opponent's court and winning the rally; or (2): a team commits a *fault* and loses the rally. The team that wins the rally is awarded a point, and serves the ball to start the next rally. A few of the most common faults include:

causing the ball to touch the ground outside the opponents' court or without first passing over the net;

*catching and throwing* the ball;

*double hit*: two consecutive contacts with the ball made by the same player;

four consecutive contacts with the ball made by the same team.

net foul: touching the net during play.

foot fault: the foot crosses over the boundary line when serving

The ball is usually played with the hands or arms, but players can legally strike or push (short contact) the ball with any part of the body.

A number of consistent techniques have evolved in volleyball, including *spiking* and *blocking* (because these plays are made above the top of the net, the vertical jump is an athletic skill emphasized in the sport) as well as *passing*, *setting*, and specialized player positions and offensive and defensive structures.

Kabbadi is a South Asian team sport. The name is derived from the Tamil word ( "kai" (hand), "pidi" (catch), which is translated into "Holding Hands"Two teams occupy opposite halves of a small swimming pool / field and take turns sending a "raider" into the other half, in order to win points by tackling members of the opposing team; then the raider tries to return to his own half, holding his breath and chanting the word "Kabaddi" during the whole raid. The raider must not cross the lobby unless he touches any of his opponents. If he does so then he will be declared as "out". There is also a bonus line which ensure extra points for the raider if he manages to touch it and return to his side of the field successfully.

In the international team version of kabaddi, two teams of seven members each occupy opposite halves of a field of 10 m × 13 m in case of men and 8 m × 12 m in case of women. Each has three supplementary players held in reserve. The game is played with 20-minute halves and a five-minute halftime break during which the teams exchange sides.

Teams take turns sending a "raider" to the opposite team's half, where the goal is to tag or wrestle ("confine") members of the opposite team before returning to the home half. Tagged members are "out" and temporarily sent off the field.
The goal of the defenders is to stop the raider from returning to the home side before taking a breath. If any of the seven players cross the lobby without touching the raider he will be declared as "out".
The raider is sent off the field if:
the raider takes a breath before returning or
the raider crosses a boundary line or
a part of the raider's body touches the ground outside the boundary (except during a struggle with an opposing team member).
Each time when a player is "out", the opposing team earns a point. A team scores a bonus of two points, called a "lona", if the entire opposing team is declared "out". At the end of the game, the team with the most points wins.
*Anxiety* invokes a feeling of fear or a perception of threat and which may be specific to *&* particular situation.

**Method:**

The sample for the present study is twenty male volley ball players and two male kabbadi Players those who have participated at the Inter School Level in Medak District. Sinha's Comprehensive Anxiety Test are used in the study. Each instruments were administered individuals as well as a small group. Prior to administration of test through informal talk was explained the subjects procedures of the test.Each instrument were administered individuals as well as a small group. While collecting the data for the study the later approaches were adopted. The subjects were called in a small group of 10 subjects arid there seating arrangements were made in a classroom. Prior to administration of test, through informal talk appropriate rapport form. Following the instructions and procedures suggested *by* the author of the tests, the tests were administered and a field copy of each lest were collected. Following the same procedure, the whole data were collected.

**Results:**

This study shows that Volley Ball Players are having the low anxiety compare to Kabbadi Players and their achievement Motivation is also to achieve the high level of performance compare to the Kabbadi Players

**Discussion:**

**Table –I:**Anxiety of Volley Ball Players and Kabbadi Players

| Players | Mean | S.D. | SE | N | df | "t" |
|---|---|---|---|---|---|---|
| Volley Ball | 37.60 | 3.95 | 0.56 | 20 | 38 | 6.02** |
| Kabbadi | 42.74 | 4.56 | 0.64 | 20 | | |

In table – I it shows that Volley Ball players are having the 37.60 mean compare the Kabbadi Players mean is 42.74, that means Volley Ball Players are having the less Anxiety compare to the Kabbadi Players.

**Conclusion**

It is concluded that Volley Ball Players are having the less Anxiety compare to the Kabbadi Players.

**Recommendations: :**

It is suggested that Volley Ball and Kabbadi Players must be given Psychological training to improve their psychological variables to excel in the competition. Similar studies can be conducted on other sports and games.

**References**

Wikipaedia Volley Ball and Kabbadi