

# **International Journal of Law, Education, Social and Sports Studies (IJLESS)**

*Multidisciplinary, an open access, peer-reviewed and refereed Journal*

<http://www.ijless.kypublications.com>

[editorijless@gmail.com](mailto:editorijless@gmail.com)

**ISSN:2394-9724**



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## **KY PUBLICATIONS**

6th Line, Bharathpet  
Guntur-522002, A.P., India  
[www.kypublications.com](http://www.kypublications.com)

**INTERNATIONAL JOURNAL OF LAW, EDUCATION, SOCIAL AND SPORTS  
STUDIES (IJLESS)  
ISSN:2394-9724**

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## STUDY OF PERSONALITY TRAITS OF SPORTSMEN (Handball, Shuttle & Long jump)

**D. HEMACHANDRARAO**

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The science of behaviour and experience is known as a separate discipline called Psychology. The behaviour and experience that is gained by an individual through the process of physical education – an integral part of Education is called Sports Psychology.

### PSYCHOLOGY

Literally means knowledge of the soul. “psyche” means soul, “Logos”, science. The term soul could not satisfactorily be explained. So psychology was defined as the science of mind. This too raised several doubts. To the question “what is mind”, some replied “no matter” and when the question was “what is matter”, the onerous reply was “never mind”. Some psychologist analysed the mind and said that the mind could think, feel and see. These are the states or structure of mind. This is the view of a separate school or psychology. “Structuralisation” developed by Edward Bradford Titchener, Director of Cornell University. The mind was regarded as consciousness, which could be studied by introspection, that is, looking within. Psychology thus came to be defined as science of consciousness.

The most accepted definition is that, psychology is the science of behaviour and experience. Behaviour includes all manifestation of life. As a pure science, psychology is concerned primarily with systematic study of behaviour and other verification through experimentation.

### SPORTS PSYCHOLOGY

Lather states that “Sports psychology is an area which attempts to apply psychological facts and principles to learning, performance, and associated human behaviour in the whole field of sports”.

A majority of research work undertaken in Physical education is focused on the physiological areas of human performance. But, many psychologists and coaches say that in a competition, - competition is ten percent physical, and ninety percent mental. Usually in a competitive situation, the probability is that both teams possess nearly the same physical skills and fitness levels. But beyond that the winner is determined by mental preparation. Hence the purpose of Sports Psychology is to understand, explain, predict and control behaviour of players and athletes.

### PSYCHOLOGICAL FACTORS IN SPORTS

“A race is won in the mind” said by Donschellander. And it is quite acceptable that for doing anything and everything first of all the player must feel well. Then only he can perform great. It is not only applicable to the player but also the entire population. Feeling better is the result of an alerted emotional state which is known as mental toughness.

Thus, Psychology entered physical education much earlier than did sports. The terms such as psychological conditioning, psychological preparation and psychological training have become a commonality in the field of sports. Rather these processes have entrenched themselves in the entire programme of sports everywhere. No training in sports field is complete without psychological study and psychological training of sportsmen. Likewise psychological training and psychological preparation is very essential for Sportsmen, policemen and public sector employees apart from college sportsmen. The psychological factors can decisively affect either way for betterment and for the worse.



Man is the most intelligent and admirable being among all the creations of God. His quest for knowledge is eternal and insatiable and education completely modifies the behaviour and personality of the individual. Swami Vivekananda said that education is the manifestation of perfection which is already in man.

Human beings differ in terms of abilities, attitudes, intelligence, learning, beliefs and moral values. Personality is the characteristic pattern of behaviour and modes of thinking that determine a person's adjustment to the environment. Behaviour is the result of interaction between personality characteristic and the social characteristics.

The science of behaviour and experience is known as a separate discipline called Psychology. The behaviour and experience that is gained by an individual through the process of physical education – an integral part of Education is called Sports Psychology.

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## **PSYCHOLOGICAL FACTORS IN SPORTS**

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Since Palmer (1933) and Dugan (1937) carried out their investigations into the personality of physical Education students there has been a growing interest in this area of study within the profession. This interest became established in the work of Kane (1962) and Hardman (1962) since when there have been many reported studies. Out of such evidence has developed the idea of a stereo typed personality in both physical education teachers and high level sport participants. Kane for example, showed that athletic ability was positively related to stability and extroversion and this view is quite widely held. Performances. The perusal of these articles, books gave a good amount of knowledge for the better guidance of the current study.

Hardman in his studies "A dual approach to the study of personality and performance in sport " points out the major limitations in empirical studies which attempt to relate personality to performance in sport in drawing of conclusions from purely descriptive data. Such an approach represents four developmental stages in scientific investigation.

Such an approach represents four developmental stages in scientific investigation

- a) A descriptive approach: In the field of Personality and games playing ability, this would be exemplified by, for example, an investigation into the personality characteristic of riflemen and a comparison of this group with groups of players in other sports.
- b) The Progressive stage: To continue the analogy phenomena observed at the descriptive stage, it might be suggested that the greater cortical excitation of the introvert facilitates the accurate execution of the precise and confined task of rifle-shooting, whereas the extrovert, with a lesser degree of cortical excitation, would lack the required control of motor output necessary for such a task.
- c) Empirically supporting stage: To continue the earlier example, a laboratory experiment would be conducted in which matched groups of introverts and extroverts would be required to learn a skill which is tough to involve the same degree of precision as the rifle-shooting situation.
- d) A predictive stage: In rifle shooting for example a decision might be made to select only introverts for international teams in order to enhance the chances of success in competition.



As explained by Hardman in the above example, the Personality traits when compared with the performances of the players of different games and different groups can described their present situations, by comparison, they can be studied of their present performances, the training yet they have to get for better performance and we can draw useful conclusions through analyzing the personality traits of the groups.

## **DIFFERENT TYPES OF PERSONALITY TESTS**

Review of studies revealed that there are number of tests available through which we can determine the personality traits of the subjects. Some of which are:

1. Cattell's Sixteen Personality Factor.
2. Minnesota Multiphasic Personality Inventory.
3. California Psychological Inventory
4. Eyesenck Personality Inventory
5. Guilforce Personality Inventory, Etcetera

At the outset some reviews relating to different personality tests are resented.

Fletcher and Dowell administered Edwards Personal Performance Schedule (EPPS) to 950 male freshmen. These subjects were divided into two groups who had participated in high school athletics and those who have not. The two groups were found to differ in the dominance, aggression and order scales of EPPS.

A study of Schendal compare athletes to non athlete in ninth and twelvth grades and in college on California Psychological Inventory. He found that 9<sup>th</sup> and 12<sup>th</sup> grade athletes generally possessed more desirable personal social, psychological characteristics than non athletes. However, at the college level the non athletes generally possessed more desirable characteristics than the athletes.

First problem is connected with personality development of high class sports persons. The personality of the sports persons, as that of any other human, is a product of the development of a society. At the same time it differs by certain specific features related to the specific nature of their activity.

Adequate assessment and well directed development of psychological capacities of sports persons are also significant. The problem is connected with the task of psycho diagnostics of capabilities, organization of psychologically based selection in sports and development of special capacities.

Control over the psycholgocial work capacity of the sports persons, during the preparation for important competitions and during the participation in them are also important. Here we can mention the wide spectrum of means for auto and latero regulations, intervening at the motivation sphere and high feelings of sports persons. Preparation of sports for important competitions takes place at the phase of psychological loads connected with their presence, for a certain period, in camps away from their families, work, study and with continuous assessment of their chances of winning in the community competitions.

Considerable loads that the sports persons execute make it essential to conduct intensive search of means for psychological recovery to stimulate forms of rest, to determine the possibilities of training at different stages of the recovery process.

It is necessary to conduct the study of sports collective, personal connections, structure of small groups that enable not only to control the specialties of psychological atmosphere in the term but also to select means for the formation of collective and for the co optimization of the activities.

Kennedy critically analysed the effects of sports participation on the modification of various personality traits possessed by an individual before starting his/her career in sports. Here too he emphasized on the most commonly found personality traits in the champion athletes as stated by Ogitive. These traits are 1. Emotional 2. Tough wide 3. Self assurance 4. Basic trust in people 5. Psycholoigcal endurance 6. Concentration. The author summarized that personality triats possessed by an individual and modified, that is, brought from potentiality to reducibi8lity by the sports participation (Coach programme and competition)., to a level that is measurable in either positive or negative terms, especially in the gifted and successful athletes.



Gruben and Perkins conducted a study on the personality traits of sports women, result indicated that women physical education majors were more happy go lucky, sober, serious, tough minded and had more favourable alert pose scores.

Whiting and Stennbridge divided won swimmers into two categories. Analysis of the scores Mandelay Personality inventories given to university male won swimmers indicated that students in category I had a lower extroversion mean than those in category II, but results were only significant at the 10 percent level.

Flanagen, conducted a study using personality inventory used for the purpose of possessing personality traits of fencers and other physical activity groups. The inventory consisted of 4 different types of items measuring ascending submission, masculinity extroversion, introversion and emotional stability – emotional instability. The inventory was administered to six groups of male college who were taking activity course on a voluntary basis ex-fencing, badminton, basketball, volleyball, boxing and swimming at the University of California. A total of 221 students participated in the study. Results of he personality inventory showed group differences, some of statistical differences with respect to four personality traits. Fencers were more ascendant than Basketball players, volleyball players and boxers. Fencers also possessed to be more feminine than Basket ball players. Badminton players demonstrated in terms of their inventory

The purpose of this study is to find out and differentiate the Personality traits among sportsmen of Kho-kho, Athletics and Badminton of the junior college students in the age group of 16 to 19 using Cattell's 16 Personality Factors questionnaire.

For achieving this purpose three groups, as mentioned above, were selected from various Junior Colleges in Andhra Pradesh. This chapter described the sample, the criterion measure, the reason for selecting the criterion measure, tool used, the sixteen factors, orientation, experimental control, randomization administration of the questionnaire, scoring of the questionnaire and the design of the study.

## THE SAMPLE

Thirty Badminton sportsmen from various Junior Colleges were selected randomly who are participating in various tournaments in Andhra Pradesh. Another 30 sports men from the Athletics discipline also randomly selected to serve as subjects of this study among the sportsman of Junior College in Andhra Pradesh. Randomly selected 30 Khokho players of the Junior Colleges in Andhra Pradesh is assigned as subjects of the study, which is treated another group for group comparisons. The age group of the subjects were from 16 to 19. care was taken so that the sample selected for this study represents that particular set of population.

The selected subjects has participated various sports and games right from district level to National level competitions. Apart from their participation of games and sports in open competitions, they do specialize and practice in their particular interested areas daily. The subjects were also encouraged by into collegiate competitions. Thus, the subjects are all active participants of sports and games in their disciplines.

The criterion measure chosen for this study was the sten scores achieved by each subject on each of the personality dimensions as measured by 16 PF questionnaire.

## PF QUESTIONNAIRE

1. 16 PF consists of scales carefully oriented and grouped to basic concepts in human personality structure research.
2. This firmly based on the personality sphere concept – a design to insure initial converge for all the behaviour that commonly enters ratings and the directionally description of personality.
3. This is specially planned and carefully arranged according to the common interest and attitude of students.
4. Coverage of personality is ensured by the sixteen functionally independent and psychologically meaningful dimensions isolated by extensive analytic research during twenty years.
5. This is an objectively scoreable test. This also give s the most complete coverage of personality possible in a brief time.
6. this has high validity, objectivity and reliability to its credit.



7. Experience with the 16 PF inventory shows that the use of the sixteen traits gives actual prescriptions superior to those from single scale measure.

8. Form B of the 16 PF questionnaire is meant for the literate group.

To collect the data from the subjects Raymond B. Cattell's sixteen Personality Factor Questionnaire Form B was used. In order to ensure the interpretation of questions, a list of all the sixteen factors, their names and their meanings are provided with the questionnaire.

This is an objectively scorable test. This also gives the most complete coverage of personality factors in a brief time. This has been widely accepted and used throughout the world on variety of population samples. Further reliability, objectivity and validity of this is beyond any suspicion. Besides, this has been very successfully used in studies of such sportsmen.

## **PF TEST**

The 16 PF questionnaire is an objectively scorable test devised by basic research of twenty years in psychology has given the most complete coverage of personality possible in brief time. Form B is the most appropriate for literate group and college students. The test can be scored by hand. The definitions and interpretations for the sixteen personality factors are furnished herewith Capsule Description of the Sixteen Primary Personality Factors are given below:

### **FACTOR A**

Reserved, Detached, Critical (Sizethymia)

The person who scores low (sten 1 to 3) on Factor A tends to be stiff, cool, skeptical, and aloof. He likes things rather than people, working alone, and avoiding compromises of viewpoints. He is likely to be precise and "rigid" in his way of doing things and in personal standards and in many occupations these are desirable traits. He may tend, at times, to be critical, obstructive or hard.

Versus

Outgoing, Warmhearted, Easy-going, Participating (Affectothymia)

The person who scores high (sten of 8 to 10) on Factor A tends to be good natured, easy going, emotionally expressive (Hence naturally Affectothymia), ready to cooperate, attentive to people, soft-hearted, kindly, adaptable. He likes occupations dealing with people and socially impressive situations. He readily forms active groups. He is generous in personal relations, less afraid of criticism, better able to remember names of people.

### **FACTOR B**

Less Intelligent Concrete thinking (Lower scholastic mental capacity)

The person scoring low on Factor B tends to slow to learn and grasp, dull given to concrete and literal interpretation. His dullness may be simply a reflection of low intelligence or it may represent poor functioning due to psychopathology.

Versus

More Intelligent Abstract-thinking, bright (Higher Scholastic mental capacity).

The person who scores high on Factor B tends to be quick to grasp ideas, a fast learner, intelligent. There is some correlation with level of culture, and some with alertness. High scores contraindicate deterioration of mental functions in pathological conditions.





## “EFFECTIVE OF COORDINATIVE TRAINING PROGRAMME ON HOCKEY ABILITY OF COLLEGE PLAYERS”

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### ABSTRACT:

The aim of the study is to find out the “Effective of coordinative training program on hockey ability of college players”. For the purpose of the study 100 male hockey players were selected from different colleges, Tirupati, Chittoor Dist. in the state of Andhra Pradesh. They were randomly selected as subjects and their age group between 18 to 21 years took part in the study. Pre test was conducted for the 100 subjects on selected skills confined to this study was restricted six(6) skills namely Dribbling, Shooting, Receiving, Tapping, Rolling and Flick. The experimental subject groups are participated in respective coordinative training program between 6.30 & 8.30 am. The data collected were analyzed statistically by using the hull scale from the mean and standard deviation. And the covariance (ANCOVA) was used since the training groups were involved wherever the ratio was found to be significant for adjustment post mean “shcffe’s” test was applied to determine the paired means difference was significant. In all the cases 0.05 level of significant was fixed. The study revealed that training has a statistically significant influence in developing the selected subjects among Hockey players.

### INTRODUCTION

- The Hockey was formalized in England 1876, the game is popular throughout Europe, Pakistan, Newzealand, Asia, Africa and India. It is the “National Game of INDIA”. F.N.S.Creek, (1986)
- The main objectives of physical education are to promote physical fitness which in term it helps to health happiness.
- Sports & Games is world wide phenomenon today. The world realized the importance of sports for the modern civilization.

### SIGNIFICANCE OF THE STUDY

- The finding of the study will explore the performance of college players in hockey skills such as Rolling & Flick, Stopping & Tapping, Dribbling & Shooting.
- The result of the study will be helpful to assess the playing ability of college hockey players through the skill test.
- The skill test will be the research tool for physical educationist and sports scientists to design and execute several researched studies in hockey ability of college players.

### HYPOTHESIS

- It is hypothesized that the effective of coordinative training programme will significantly improvement of speed on hockey ability due to the relative among college hockey players.
- It is hypothesized that there may be significant improvement of explosive power due to related effective coordinative hockey ability among college Hockey Players.

### NEED OF THE STUDY

- The coordinative hockey training programme among college hockey players its commendable contribution to one’s level of ability.

- We hypothesized that concurrent of the coordinative training programme may have significant influence for know the efficacy of effect of development that on hockey ability among college hockey players.

## METHODOLOGY

- The main purpose of the study is "Effective coordinative Training Program on hockey ability of college Players". Hence, it is to achieve that the purpose of the study 100 male Hockey players were selected from different colleges at Chittoor, dist. In Andhra Pradesh served as subject.
- The subject were selected at random by lot method. The age groups of the subjects were ranged between 18 to 21 years.

## SUBJECTS & VARIABLES

- 100 male Hockey players from Various colleges in AP in the age groups 18 to 21 years were selected their consent.
- The selected subjects were randomly assigned to both the concurrent training and control groups of twenty five each.
- The selected criterion variables were assessed using standard tests and procedures, prior to and immediately after the training.

## TRAINING PROTOCOL

- The training period the experimental groups underwent their respective training programme four days per week for eight weeks in addition to their selected subjects and regular activities.
- Every day the workout lasted for 30 to 45 minutes approximately including warm-up & warm-down period.

## EXPERIMENTAL DESIGN.

- The experimental design used in this study was random group design involving hundred subjects who were divided in to four groups of twenty five each.
- This study consisted of two independent variables such as coordinative training programme on ability of college hockey players.
- The data collected from the four groups before and after the experimental period were statistically examined for significant improvement by dependent 't' test.

## STATISTICAL TECHNIQUE

The analysis of covariance (ANCOVA) was used as a statistical procedure with four groups were involved the 'F' ratio was found to be significant for adjusted post means, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. In all the cases, the level of confidence was fixed at 0.05 level for significance.

## RESULT OF THE STUDY

Table – 1: Mean and Standard Deviation of Skill Test Score:

SLNo.	SKILL TEST	UNIT OF MEASUREMENT	TEST SCORE MEAN	TEST SCORE STANDARD DEVIATION
1.	Rolling & Flick	Points	25.48	4.65
2.	Stopping & Tapping	Seconds	32.15	1.51
3.	Dribbling & Shooting	Points	13.01	2.58

**Table-2: Correlation Coefficient of Skill Test Items for Reliability:**

Sl.No.	SKILL TEST	r	LEVEL OF SIGNIFICANCE
1.	Rolling & Flick	0.942	0.01
2.	Stopping & Tapping	0.990	0.01
3.	Dribbling & Shooting	0.967	0.01

The table value required for 248 df for 0.01 level of significance is 0.164

**TABLE-3: Correlation Coefficient of Skill Test Items for Validity:**

Sl.No	SKILL TEST	r	LEVEL OF SIGNIFICANCE
1.	Rolling & Flick Vs Henry-Friedel field hockey test	0.466	0.01
2.	Stopping & Tapping Vs Chapman Ball control test	0.277	0.01
3.	Dribbling & Shooting Vs Henry-Friedel field hockey test	0.393	0.01

The table value required for 248 df for 0.01 level of significance is 0.164

**Table-4: Correlation Coefficient of Skill Test Items for Objectivity:**

Sl.No.	SKILL TEST	r	LEVEL OF SIGNIFICANCE
1.	Rolling & Flick	0.962	0.01
2.	Stopping & Tapping	0.825	0.01
3.	Dribbling & Shooting	0.932	0.01

The table value required for 248 df for 0.01 level of significance is 0.164

## CONCLUSION

- The result of the study revealed that all the skill items such as *Rolling & Flick, Stopping & Tapping, Dribbling & Shooting* are reliable.
- The finding of the study explored that all the three skill test items are having validity and objectivity.
- As the skill tests have fully satisfied the scientific authenticity such as reliability, validity, objectivity and norms, the battery of skill test in hockey can use widely for the different Universities & Colleges of male hockey players of Andhra Pradesh.
- With the help of these skill test items, the Physical Educationists and Coaches can classify and identify the ability of college *HOCKEY* players.

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## EFFECTS OF WALKING AND JOGGING PROGRAMMES ON PHYSICAL PHYSIOLOGICAL AND BIOCHEMICAL VARIABLES AMONG OBESE MEN

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The human body is built for physical activity and movement. Throughout the ages, man has had to be physically active in order to procure his daily food and to succeed in the battle for survival. Improved standard of living and increasing affluence, however, have led to a decreased emphasis on physical fitness and locomotive power and in the industrialized world modern man has become more and more sedentary both at work and during his leisure hours. The need for physical activity, however, remains as great as ever, which is why sport is so important, particularly as a leisure pursuit.

Physical activity is an important ingredient in the quality of life because it increases energy and promotes physical, mental and psychological well-being in addition to conferring worthy health habits. Physical inactivity is considerably more dangerous than physical activity. A healthy person has been defined as an individual who is not obviously ill and whose physical and mental functions correspond to those of the average person in the same age group at the same period of time.

The World Health Organisation has defined health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Good health means that all organs of the body are working efficiently. The importance of the proverb, Health is Wealth, 'If health is lost everything is lost', is realized more in its absence than by its presence. Youth is not a time of life, it is a state of mind. The importance of health is more than education, money and other material comforts. Happiness is intimately concerned more with good physical and mental health than other outside factors. At this stage, we need to know the essential conditions to keep our self-healthy.

The primary health goals are to avoid premature death and to avoid preventable diseases. Components related to these goals include heredity, environment, habit and health status. Behaviour that contributes to a healthy life includes regular exercise, proper nutrition, adequate sleep, relaxation and abstinence from tobacco, excess alcohol and non-essential drugs. Regular physical activity helps prevent and delay premature development of a variety of major health problems.

The scholar had gone through all the relevant literatures, which were available to him. He has gone through general books, periodicals, journals, unpublished thesis, and also collected literature from Lakshmi Bai National Institute of Physical Education (LNIPE) Gwalior, Alagappa University, Karaikudi, Y.M.C.A., Madras and Annamalai University, Chidambaram. The reviews that are presented here may focus light on the background for this study.

Roy' studied the effect of army conditioning exercises of varying repetitions upon the physical fitness indices of 7<sup>th</sup> and 8<sup>th</sup> grade boys. Improvements in physical fitness index scores were determined from exercise with set, series of calisthenics. Nine experimental conditions with 5 subjects in each were established using three time lengths three weekly exercise programmers. The exercise periods were Five, Ten and Fifteen minutes in length, the combination of days were Tuesday, Thursday, Monday, Wednesday, Friday and all five of these days. Improvement was measured with the physical fitness index. The data were treated by analysis of significant differences in physical fitness index means were not obtained between any of these conditions as



any combination of them. However there as significant mean physical fitness index gain on the part of all subjects at the end of six weeks of calisthenics exercises.

Chetia under took a study to find out the relationship of leg length, thigh-girth, calf girth and abdominal strength to standing broad jump on 44 College male students. The results indicated that there were significant relationships between standing broad jump and leg length, calf girth and abdominal strength.

Santo<sup>3</sup> selected 76 college Men to study the effect of conditioning programme on cardio-respiratory fitness of college men. The subjects were divided into 4 different groups; three of which participated in different conditioning programme, one was a control group which had no formal physical conditioning programmes. The different conditioning programmes were 1. Cooper's Aerobic programmes 2. Interval conditioning programme 3. Regular Physical Education programme and 4th was control group.

Cardio-respiratory fitness was measured by using Harvard step test, the 12 minutes Run/Walk, a three minutes shuttle run and one minute lateral jumps. It was concluded that interval conditioning, aerobic conditioning and regular physical education groups improved significantly in cardio-respiratory fitness in comparison to the control group.

Leshkevitch<sup>4</sup> studied the influence of sequence of Exercises in training undertaken in the development of the physiological foundation of speed, strength and Endurance in youthful sportsmen, three groups of boys aged 12-14 were given physical training four times a week for three months to determine the effects of sequence of exercises. The observed change suggest that the speed, strength, endurance is the optimal sequence.

Olsen and Edel Stain<sup>5</sup> studied the spot reduction of subcutaneous adipose tissue. Skinfold measurements were taken on both arms of 32 High School boys. One arm served as control, the 71, other arm completed three sets of 7 km. Curb and three sets of 71:m schedule for six weeks. The results indicated that hard exercise in a specific area of the arm causes a reduction of the adipose tissue in that

Burke and Brush<sup>6</sup> studied physiological and anthropometric measures of young women who had been training regularly by running approximately 50 miles per week for two years. Anthropometric measures included segment of lengths, diameters, 114 skin folds and circumferences. He found out that these women athletes were low in subcutaneous body fat for this age and sex.

Cureton in his study of champion athletes has stated that all round athletic ability is characterised by wide shoulder width compared to hip width. Davenport's Crural index is a valuable guide for the selection of individual built in an agility pattern for bony leverage, higher values is leg length, trunk length, indicated agility types. Relatively greater height and arm span indicate ability of lazing and throwing.

Seltzers conducted a study with 175 subjects to correlate serious anthropometric measures with endurance performance in i) treadmill, ii) pack test, iii) step test and demonstrated a virtual absence of relationship between statute weight. Chest circumference, leg length, lower leg length with the criteria both before and after a training period. He also concluded that Ponderal Index =  $\text{Height}^3 / \text{Weight}$  which correlate  $.29 \pm 0.49$ . Individuals poor in this index were poor in performance. He concluded that there was no evidence of any advantage of the tall, long-legged individuals compared to those with short statute in the pack and step test.

In this chapter, the investigator explained the methods and materials used for his study. It includes - Selection of Subjects, Selection of Variables, Experimental Design, Criterion measures, Administration of Training Schedule, Reliability of data, Instrument reliability Tester's Competency and Reliability of the Tests, Orientation of the Subjects, Test Administration and Statistical Technique employed.

## **SELECTION OF SUBJECTS**

The subjects were selected from Sri-Vivekananda High School, Giddalur, Prakasam District, Andhra Pradesh, who are studying in class VIII and IX. The Head master of the above mentioned school was officially approached and the scholar personally-requested him to co-operate in conducting the test. According to the School Records, the average age of the subjects was ranging between Fourteen to Sixteen years.



The subjects were assigned at random to one control group and one experimental group, each consisting of Ninety (90) subjects. The control group was asked not to take part in either compulsory or optional physical education activity class or any other form of physical activity. The experimental group was asked to take part in selected physical activities for 10 weeks.

## **SELECTION OF VARIABLES**

Afternoons-tilting experts in the field and also going through the available literature on the subject, the following Anthropometric and physiological variables were selected for this study.

### **ANTHROPOMETRIC VARIABLES**

- a. Height
- b. Weight
- c. Abdominal Girth
- d. Arm girth
- e. Calf girth
- f. Hip girth
- g. Thigh girth
- h. Fore Leg Length
- i. Thigh length
- j. Leg length
- k. Crural index
- l. Percentage of Body fat - Biceps, Triceps, Supra illiac and sub-scapular skin folds.
- m. Body mass index
- n. Fat Weight
- o. Lean Body Mass.

### **PHYSIOLOGICAL VARIABLES**

- a. Resting Heart rate
- b. Resting Systolic Pressure
- c. Resting Diastolic Pressure
- d. Hemoglobin
- e. Serum Cholesterol.

## **EXPERIMENTAL DESIGN**

The study was formulated as a random group design and equal number of subjects :were assigned (90) to each group. The total number of one hundred and eighty (180) subjects were selected 1,P randomly from class VIII and IX and were divided into two groups randomly. The groups were as follows:

Group 'A' - Control Group

Group 'B' - Experimental Group

### **ADMINISTRATION OF TRAINING SCHEDULE**

The investigator prepared the training schedule for the experiment.- The experimental subjects took training under the supervision of the investigator who was assisted by trained Physical Education Teachers. The training programme was-- conducted thrice a week for ten weeks with 45 minutes duration i.e. from 7.00 to 7.45

a.m. The—time-table for training schedule was prepared by... the investigator in consultation with the School authority.

The programmes of different physical activities we prepared with great care. Exercises were chosen primarily to warm-up the complete body.

The following are the selected physical activities for the study:

- 1 General warming up :
  - a. Brisk walking .



## b. Jogging

Physical exercise is an activity in which every human being engages to one degree or another during the COIISC Of his life. Regulate intense physical activity has a number of physiological benefits.

1. It improves the efficiency of eioadatury system, indicated by the teduction of required coronary blood ta rest and during exercise.
2. 11 decreases the resistance in the blood vessels of the musculature, there by decreasing arterial Illood pressure'.
3. Participating in physical activities develops pllysique: contributes to building up of self-confidence and reduction of anxiety levels in organism.
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## IMPORTANCE OF SPORTS IN EDUCATION

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Education doesn't mean only books and marks. Learning includes competitive spirit, continuous practice and cooperating with others and adjusting to hard realities. Games and sports first break the daily monotony and infuse entertainment, health and activeness. The growth and development of body is very important in life. Sports and games gradually build our character which will help to boom into a fully grown personality. Our educational prowess are useless without strong physique and good health. Long hours of work and sharpness of brain also depend of physical agility. How to work together, how to lead, how to follow, how to overcome challenges, how to accept failure all is learnt in games and sports.

Sports and games give a big boost to the development of good psychology in students. Games like Basketball, football, hockey etc make one to practice a lot, master some skills. These improves the stamina, energy and instill agility in mental thinking. In course of time they learn to perfect interpersonal skills, communication skills. Team spirit and responsibility in children develop the children as responsible citizens. They are essential for building a strong and rich country.

Mental and Moral development is possible only with the introduction of sports. Our enjoyments are dependable on our health. Health is dependable on strong body. Games and sports develop many good qualities of head and heart. They increase the power of endurance; they infuse discipline, fair play and team spirit. So games and sports are indispensable for the all round development of a student. There was a famous saying 'The battle of Waterloo was won on the play-grounds of Eton' this saying shows us the importance of sports.

Sports open up a wide vistas of learning: Increasing knowledge about the world, awareness about the culture, customs and habits of the people. This makes us gain knowledge through observation, interaction, communication and comparison. Sports and games give new life to those who lag behind in studies. His or her interest in games and sports make give them an opportunity to gain a scholarship, and even a respectable job and pull them away from abject poverty.

Sports a silent teacher. It makes a man aware of life realities. It teaches them to become strong from within. It moulds the students to follow rules and also make them as law-abiding citizens. As it maintains a fine balance between work and play students without any stress can face examinations and get through the examinations. We can see our students relax from their daily hectic academic work and pressure after playing cricket, basketball or volleyball. They will also learn tolerance, patience and can handle pressure well in day to day activities.

There are many important skills that a student will benefit from playing sports : for instance , in sports you have to learn to workout with other players in the team. When others do not work out well and you are serious in workouts the team's performance will not be good at all. When everybody works with devotion and coordination the team can come out in flying colours. This skill can be applied in real life. Especially in keeping up a job. The most important factor in keeping up the job is ability to communicate with others and work in coordination with others. Student masters these skills in sports and games.

None can deny the benefits we discussed in the above statements. But the present-day education system gives much importance to studies and only an eyewash service to games and sports in schools and





colleges. Many schools and colleges do not have enough playground to allow their students to play. Students are more attached and attracted to computer games and TV games. This makes them turn obese and are becoming patients to hypertension and depressions.

For an all-round development of the child games and sports should be seriously incorporated in daily curriculum. Playground is a must for all schools and colleges. Sports equipment and sports scholarships are a must to encourage them in schools and colleges. We all know that a sound mind dwells in sound body. In reality we do not practice this maxim. Students participating in games and sports will never succumb to depressions and suicides. Life is a struggle with victories and failures. The students with sports background can face troubles successfully.

Swami Vivekananda said, "We can reach heaven by playing football rather than by reading Gita." This the great swamiji stressed the need for physical activity. Swamiji while touring America participated in wrestling matches to exhibit his physical fitness. They were astonished by his physical strength and endurance capacities.

Our body is a machine—a bio machine. A machine needs oiling at regular intervals to perform well. If you don't do it it will stop performing. Our body too needs sports to keep it away from decaying. Sports make us realize that winning and losing are not important but trying is very important. We learn to win and lose gracefully. Books may not give this live experience. Sports and games makes life complete and teaches more than books and libraries.



## SPORTS PEDAGOGY

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### Abstract

Confidence is an athlete's best friend. It is an athlete's belief in his or her ability to perform. It is also a core mental skill because of its impact on other parts of one's life, like school and relationships with family and friends. Discipline, patience, and balancing time and energy are the challenging components of playing a sport. Connecting with others and learning about trust and teamwork is rewarding. It is also a great opportunity to build self-confidence by learning to get along with all kinds of people. Playing sports provides a great place to relax. Sports can help the child success throughout his life. No longer the sole domain of boys, sports help girls and boys build confidence. They learn that they can practice, improve and achieve goals. Other benefits: they learn to recognize their strengths, accept or strengthen their weaknesses, handle defeat, expand their circle of friends and learn teamwork. Another confidence-boosting bonus: they stay fit and learn to respect their bodies.

**Sports Pedagogy** is the academic field of study, which is located at the intersection between sports and education. As a discipline, sport pedagogy is concerned with learning teaching and instruction in sports physical education and related areas of physical activity, sport pedagogy is mostly regarded as a sub-discipline of sports and sciences. Its theoretical grounding is also underpinned by the general education sciences. As a scientific sub discipline sport pedagogy is therefore allied to both fields, sport science and education.

### SPORTS BOOST-UP THE CHILDREN'S CONFIDENCE IN EDUCATION

**Introduction:** Sport Pedagogy is about learning in practice. It refers both the ways in which children and Young people learn *and* the pedagogical knowledge and skills that teachers and coaches need to support them to learn effectively. Sport pedagogy is the study of the place where sport and education come together. Sports as a ladder to climb up the rungs of education, and although some of them struggle with lessons and assignments, they manage to make it through. Sports can help a person how can manage his time, mingle with others, adaptation of culture. Indirectly sports teach how can live in the society? Education helps full pledge person, sports do that.

**Increasing knowledge about the world:** Inter-country sports meets help in spreading awareness about the culture, customs and habits of people from different parts of the world. We learn a lot through observation, interaction, communication, and comparison.

**Trial and error method helps new invention:** Science and math are practice subjects, for the perfection of subject student do practice subjects. Trial and error is also an excellent tool for inventors. The inventor will first imagine a device they would like to invent, and then they may go through the trial and error process to find the best ways of inventing the device. When we introduce sports in education, it gives pleasant atmosphere to a student learn more. He tries again and again until he get the result. Sports help develop life skills.



**Teach and coach:** Coach teaches and demonstrate to the student, this way student can learn

Anything easily. Montessori Method in primary stage is very useful for the child to learn comfortable. play and study are the soul of a body. We give the importance to education as well as fitness of the body. We train up our body through games.

**Understanding and controlling group Behavior:** Planning, organizing and structuring for an effective meeting is critical to success. But it is not enough. Ultimately the make and break issues revolve around the people dynamics in the meeting. And it is not accomplished by random acts of kindness or wishful thinking. Group dynamics skills are required for life.

**An academic discipline or field of study:** It is a branch of knowledge that is taught and researched as part of higher education. The study of sport pedagogy has three dimensions that interact to form each pedagogical encounter. *Knowledge in context* what is regarded as essential or valuable knowledge to be taught, coached or learnt is contingent upon historical, social and political contextual factors that define practice learners *and learning* at the core of sport pedagogy is expertise in complex learning theories, and a deep understanding of diversity and its many impacts on the ways in which young learners can learn, teachers-tracing and coaches-coaching effective teachers and coaches are lifelong learners who can harness the power of sport for diverse children and young people. Gaining knowledge and understanding of the three dimensional concept of sport pedagogy is the first step towards ensuring that the rights of large numbers of children and young people to effective learning experiences in and through sport are not denied.

**Self-esteem:** In psychology, the term **self-esteem** is used to describe a person's overall sense of self-worth or personal value. When you are with bunch of people and do "silly" things. The biggest advantage of playing together is that you will have immediate feedback and tons of fun at the same time. Basically this is the time when you are with your family, friends or with your loved ones and ready to have some fun. Or you are in the school participating, organizing or designing games or certain activities. Whenever people are together to do or create something, when they have the same goals or tasks to solve, their relationships are improving immediately. The notion of working together as a group will boost their self-esteem and confidence and will give each participant a sense of belonging. You can call it team work or team building if you like.

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Sport Pedagogy-Kathleen Armou.



## DENOTATION OF GLOSSORY SPORTS

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### ABSTRACT

The emergence of network-enabled devices and the promise of ubiquitous network connectivity has made the development of pervasive computing environments an attractive research goal. A compelling set of applications enabled by these technology trends are context-aware, *location-dependent* ones, which adapt their behavior and user interface to the current location in space, for which they need to know their physical location with some degree of accuracy. The quantity of videos generated by digital technologies has increased the need for automatically annotating video content and for techniques that support retrieving that content. Content based video annotation and retrieval therefore has become an active research topic. Although we can successfully apply many of the results in content-based image retrieval to videos, additional techniques are necessary to address videos' unique qualities. For example, videos add the temporal dimension, requiring object dynamics. Furthermore, although people often think of a video as just a sequence of images, it's actually a compound medium, integrating diverse media such as realistic images, graphics, text, and audio. Also, application contexts for videos are different than those for images and therefore call for different approaches to help users annotate, query, and exploit archived video data. The huge amount of data that video streams deliver necessarily calls for higher levels of abstraction when we annotate content. This therefore requires us to investigate and model video semantics. Because of the type and volume of data, general-purpose approaches are likely to fail since semantics inherently depend on a specific application context. Many researchers have addressed semantic modeling of content in multimedia databases. Researchers have also reported on concrete video retrieval applications by high-level semantics in specific contexts such as movies, news, and commercials.

Due to their enormous commercial appeal, sports videos represent important application semantic significance. In fact, we primarily distinguish studio and interview shots from sports action shots and then further decompose the sports videos into their main visual and graphic content elements, including sport type, foreground versus background, text captions, and so on. We extract relevant semantic elements from videos by combining several low-level visual primitives such as image edges, corners, segments, curves, and color histograms, according to context-specific aggregation rules.

In this article, we illustrate three modules of our system, which performs semantic annotation of sports videos at different layers of semantic significance, using different elements of visual content.

#### I. Architecture

- II. The actual architecture of a system supporting video annotation and retrieval depends on the application context and, in particular, on end users and their tasks. Although all application contexts demand a reliable annotation of the video stream to effectively support selection of relevant video segments, it's evident that, for instance, service providers (such as broadcasters and editors) and consumers accessing a video-on-demand service have different needs.<sup>7</sup>

For both the old and new media, automatic annotation of video material opens the way for economically exploiting valuable assets. In particular, in the specific context of sports videos, two logging approaches exist, which let broadcasting companies reuse recorded mater.



An example of reusing footage logged for posterity is selecting the best footage of a famous athlete to provide a historical context for a recent event. An example of production logging is selecting highlights, such as soccer goals or tennis match points, to produce programs that contain one day's best sports actions. In both scenarios, we should be able to automatically annotate video material, which is typically captured live, because detailed manual annotation is mostly impractical. The level of annotation should enable simple text-based queries. The annotation process includes such activities as segmenting the material into shots, grouping and classifying shots into semantic categories (such as type of sport), and supporting queries and retrieval of events that are significant to the particular sport. To achieve an effective annotation, we should The videos that comprise the data set we used for the experiments in this article include a variety of typologies. We drew most of the videos from the BBC Sports Library, which in turn collected them from other BBC departments and other broadcasters. The data set comprises more than 15 video tapes, each lasting from 30 to 120 minutes. The videos were mostly captured from digital video tapes and, in some cases, from SVHS tapes. Digital video is the lowest acceptable standard for broadcasting professionals, and it provides digital quality at full PAL resolution.

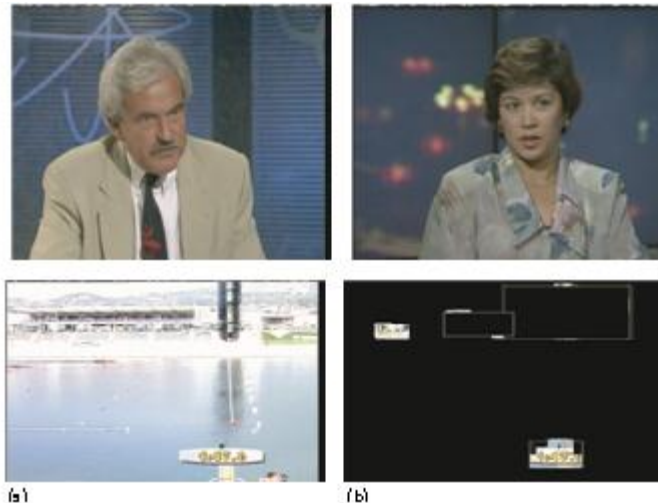
Many of the videos in this sample collection are from the 1992 Barcelona Olympics while some contain soccer games from other events. Thus, we used various types of sports to perform our experiments. The videos differ from each other in terms of types of sports (outdoor and indoor sports) and the number of athletes (single player or teams). Also, the videos differ in terms of editing—some are live feeds from a single camera for a complete event, some include different feeds of one event edited into a single stream, and others only feature highlights of minor sports assembled in a summary. We weren't able to make assumptions on the presence of a spoken commentary or superimposed text because that depends on a number of factors, including the technical facilities available on location and the agreements between the hosting broadcaster and other broadcasters. Figure 1, which includes sport sequences interwoven with studio scenes, shows the typical structure of a sports video; some videos might include superimposed graphics (such as captions or logos). Our anchorman/interview shot classification module provides a simple preliminary classification of shot content, which subsequent modules can also exploit and enhance. This type of classification is necessary because some video feeds contain interviews and studio scenes featuring an anchorman and athletes. One example of this is the Olympic Games, where the material to be logged is often pre-edited by the hosting broadcaster. The purpose of this module is to roughly separate shots that contain possible sport scenes from shots that do not. To this end, we can follow a statistical approach to analyze visual connection use any predefined shot content model as a reference. In fact, our system doesn't require this latter constraint to be able to correctly manage interviews, which don't feature a standard studio set-up, because athletes are usually interviewed near the playing field and each interview has a different background and location. Also, detecting studio scenes requires such independence of a shot content model because each program's style is unique and often changes. This would require us to create and maintain a database of shot content models.

Studio scenes have a well-defined syntax: shot location is consistent within the video, the number of cameras and their view field is limited, and the sequence of shot content is often a repeating pattern. An example of such a structure is in Figure 2, which displays the first key frames of shots comprising a studio scene.

III. Identifying graphic features

IV. In sports videos, graphic objects may appear anywhere within the frame, even if most of the time they're in the lower third or quarter of the image. Also the vertical and horizontal ratio of the graphic object zones varies—for example, a team roster might occupy a vertical box and one athlete's name might occupy a horizontal box (see Figure 1). For text graphics, character fonts can vary in size and typeface and may be superimposed either on an opaque background or directly on the image

captured by the camera. Graphic objects often appear and disappear gradually, with dissolve or fade effects. These properties call for automatic graphic object localization algorithms with the least amount of heuristics and possibly no training. Past research has used several features such as edges and textures as cues of superimposed graphic objects.<sup>8,9</sup> Such features represent global image properties and require the analysis of large frame patches. Moreover, natural objects such as woods and can present a local combination of such features that the algorithms might wrongly classify as a graphic objects.



To reduce visual information to a minimum and preserve local saliency, we've elected to work with image corners, extracted from the images' luminance information. This is appealing for the purpose of graphic-object detection and localization because it prevents many misclassification problems arising with color-based approaches. This is particularly important when considering the characteristics of TV standards, which enforce a spatial sub sampling of the chromatic information, causing the borders of captions to be affected by color aliasing. Therefore, to enhance the readability of characters, producers typically exploit luminance contrast because luminance isn't spatially sub sampled and human vision is more sensitive to it than to color contrast. Another distinguishing feature of our approach is that it doesn't require any knowledge or training on superimposed captions features. The first stage performs a classification in terms of the categories of playing field, player, and audience, with a twofold aim. On the one hand, this provides an annotation of video material that is meaningful for users' tasks. On the other hand, it's instrumental for further processing, such as identifying sports type and detecting highlights playing field shots typically feature large, homogeneous color regions and distinct long lines;

- in player shots, the player's shape appears distinctly in the foreground and the image's background tends to be homogeneous or blurred (either because of camera motion or lens effects); and
- in audience shots, individuals in the audience aren't always clear but the audience as a whole appears as a texture.

These observations suggest that basic edge and shape features could significantly help differentiate between playing field, player, and audience scenes. It's also worth pointing out that models for these classes don't vary significantly across different sports, events, and sources





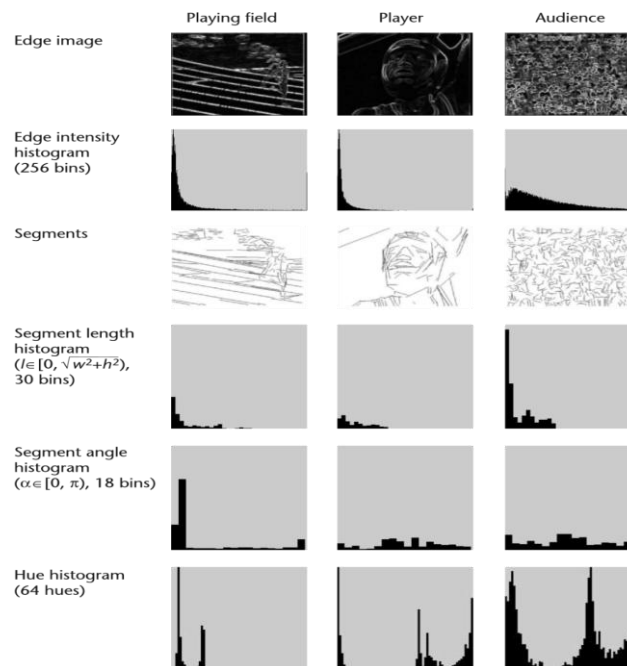
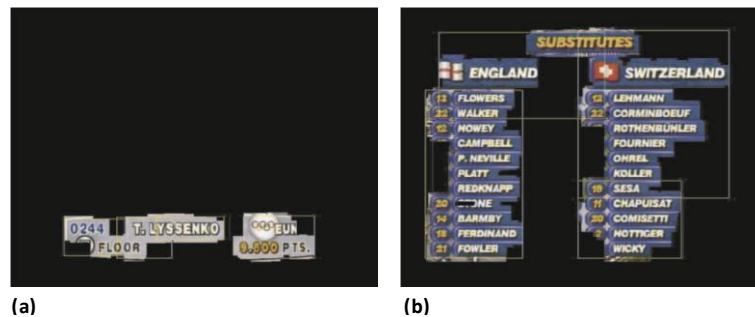
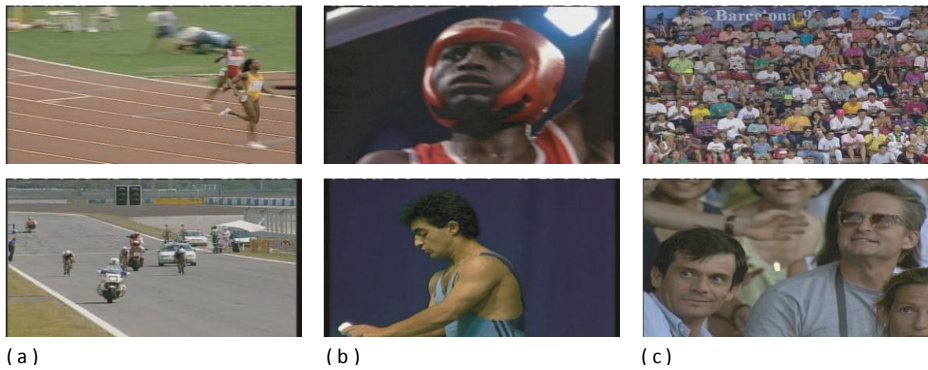


Figure 3

We propose that identifying the type of sport in a shot relies on playing field detection. In fact, we can observe that most sports events take place on a playing field, with each sport having its own playing field;

### III.Future work

Besides refining the techniques we describe in this article, our future work includes introducing new semantic elements for a given semantic layer, such as motion and framing terms (for example, close-up versus long



shots); increasing the overall level of semantic description (for example, by adding descriptors for events and relevant highlights); and transitioning from elements of visual content to relationships among elements (spatiotemporal relations). We're also implementing shape-analysis techniques to support highlight detection (for example, by identifying playing field lines, goals, hurdles, and so forth). Eventually, our work should yield an exhaustive annotation of sports videos, letting us select highlights in a sports event to enhance production logging or extract metadata to achieve posterity logging. For example, we expect our system to detect (missed) goals, penalties, or corner shots in a soccer game by combining (camera) motion patterns, information on the location of players with regards to playing field lines, and other relevant markers. When accessing historical archives, users could benefit from richly annotated files, helping them retrieve specific shots (or types of shots) on demand

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## COMPUTER SCIENCE IN SPORTS

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### ABSTRACT

Computer science in sport is an interdisciplinary discipline that has its goal in combining the theoretical as well as practical aspects and methods of the areas of informatics and sport science. The main emphasis of the interdisciplinary is placed on the application and use of computer-based but also mathematical techniques in sport science, aiming in this way at the support and advancement of theory and practice in sports. The reason why computer science has become an important partner for sport science is mainly connected with "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".

Going back in history, computers in sports were used for the first time in the 1960s, when the main purpose was to accumulate sports information. Databases were created and expanded in order to launch documentation and dissemination of publications like articles or books that contain any kind of knowledge related to sports science. Until the mid-1970s also the first organization in this area called IASI (International Association for Sports Information) was formally established. Congresses and meetings were organized more often with the aim of standardization and rationalization of sports documentation. Since at that time this area was obviously less computer-oriented, specialists talk about sports information rather than sports informatics when mentioning the beginning of this field of science.

Based on the progress of computer science and the invention of more powerful computer hardware in the 1970s, also the real history of computer science in sport began. This was as well the first time when this term was officially used and the initiation of a very important evolution in sports science.

In the early stages of this area statistics on biomechanical data, like different kinds of forces or rates, played a major role. Scientists started to analyze sports games by collecting and looking at such values and features in order to interpret them. Later on, with the continuous improvement of computer hardware - in particular microprocessor speed - many new scientific and computing paradigms were introduced, which were also integrated in computer science in sport. Specific examples are modelling as well as simulation, but also pattern recognition, design, and (sports) data mining.

As another result of this development, the term 'computer science in sport' has been added in the encyclopedia of sports science in 2004.

First applications of computers in sport science were reported in the middle of the sixties. In particular, computational numerical evaluations of biomechanical investigations and statistical analyses were performed with the mainframe computers available at that time. The facilities provided by computer and video technique have long been utilized when setting up measuring systems for collecting data to analyse sports movements biomechanically. The development of opto-electronic systems for obtaining kinematic data may serve as an example. Biomechanics has, however, not only made use of (technical) tools provided by informatics. Concepts and methods have also widely been applied and even further developed. Modelling, which is one of the central topics of computer science in sports, has a long tradition in biomechanics. Currently



an increasing use of alternative modelling techniques like neural networks, fuzzy logic or genetic algorithms for modelling complex physical and biological processes can be observed.

Manifold examples can be given, which demonstrate that not only does computer science give valuable support to biomechanics but also computer science benefits from biomechanics. (1) One of the critical issues of computer animation is the generation of human motions that appear natural and realistic. Biomechanical simulations based on human body models may be used to create motion data fulfilling this condition. (2) The dynamics of multibody mechanical systems (such as the segmented human body) can be described by a differential-algebraic equation, which is difficult to solve. If elastic components are involved, the task becomes even more difficult. Problems of that kind give (and have given) impetus to numerical computing to develop efficient integration algorithms used in the simulation. (3) The use of multimedia in aspects related to sport is currently a widely discussed topic in sports science.

Computer interactive learning and teaching programs used for education in sports biomechanics provide excellent means for demonstrating the potential of multimedia. Multimedia is just one field applicable for teaching biomechanics and computer science in sports interdisciplinary. Data acquisition, data bases, modelling and simulation are others. Selective examples from the author's own work in this interdisciplinary area will be presented. Some thoughts on the future perspectives of this fruitful cooperation will conclude the lecture. Coaching is one of the earliest areas of application of computer science in sports. It may be divided into three different activities, preparation, control and debriefing of competition. These stages create different conditions for support of coaching by computer science with the stage of competition control being most demanding, because data acquisition, data processing and data-based interventions have to take place during and at the site of the competition.

The history of computer science and coaching was marked by continuous technological progress and growing conceptual insights in the process of coaching. Although there is considerable support in processing observational data including video data, it has to be acknowledged that central activities of coaching are not affected yet, e.g. analyses of strengths and weaknesses or the central task of strategy development and implementation. Conceptual advice for these tasks of coaching is obtained by qualitative research methodology, e.g. for assessment and intervention.

Nevertheless, there are excellent perspectives for coaching and computer science. Real-time position analysis will allow support during competition. Analyses on more abstract levels than just positions will become possible using methods of artificial intelligence. This will result in new options with at this time unforeseeable impact for the work of coaches.

## INTRODUCTION

Coaching is one of the earliest areas of application of computer science in sports. Especially in game sports analysis tools from computer science were introduced very early, that means almost as soon as they were technologically available. Interestingly enough, in the seventies of the last century parallel developments occurred in different countries dealing with the same problems without knowing about each other (Baca, 2006; Hughes, 2000; Perl, Lames & Miethling, 1997). This situation has improved a lot after founding the International Association of Computer Science in Sport (IACSS) in 2003 that organizes biannual meetings for the exchange of knowledge and recent developments in this area. Still, applications from the area of coaching make up many of the contributions to these conferences and to the International Journal of Computer Science in Sports (IJCSS).

The reason for the attractiveness of computer science to sports coaches is simple. Imagine a football game with 22 players going on for 90 minutes. Since almost any action is of relevance for coaching, acquisition and data processing of behavior in football deal with an overwhelming number of behavioral items during a match. In fact, satisfying observational systems in many sports have only become possible through the aid of computer science.



Although pointed out already 30 years ago, some of the aims of introducing computer science into coaching are still far from being achieved nowadays. There are different reasons for this. First of all, there was too much optimism concerning the impact of computer science developments into sports practice. The willingness of practice to adopt computer science technology into their daily work, but also the capabilities of computer science in these early times were largely overestimated. The nature of the problems in the coaching process was not well understood.

Especially the fact, that coaching comprises activities that are only to be supported by computer science if severe problems of artificial intelligence are solved. The solution of these problems has come into the reach of computer science only recently. Finally, there was large scale failure in supporting coaching by computer science simply because one didn't know how to conduct a scientific intervention in sports practice appropriately. Income of these areas there has been much progress in recent years. Especially technological developments allow us nowadays to think about projects that are actually able to realize the 30-year-old. A clear demonstration for the evolution and propagation towards computer science in sport is also the fact that nowadays people do research in this area all over the world. Since the 1990s many new national and international organizations regarding the topic of computer science in sport were established. These associations are regularly organizing congresses and workshops with the aim of dissemination as well as exchange of scientific knowledge and information on all sort of topics regarding the interdisciplinary discipline.

## **Historical survey**

As a first example, in Australia and New Zealand scientists have built up the Math Sport group of ANZIAM (Australia and New Zealand Industrial and Applied Mathematics), which since 1992 organizes biennial meetings, initially under the name "Mathematics and Computers in Sport Conferences", and now "MathSport". Main topics are mathematical models and computer applications in sports, as well as coaching and teaching methods based on informatics.

The European community was also among the leading motors of the emergence of the field. Some workshops on this topic were successfully organized in Germany since the late 1980s. In 1997 the first international meeting on computer science in sport was held in Cologne.

The main aim was to spread out and share applications, ideas and concepts of the use of computers in sports, which should also make a contribution to the creation of internationalization and thus to boost research work in this area.

Since then, such international symposia took place every two years all over Europe. As the first conferences were a raving success, it was decided to go even further and the foundation of an organization was the logical consequence.

This step was accomplished in 2003, when the International Association of Computer Science in Sport (IACSS) was established during the 4th international symposium in Barcelona, when Prof. Jürgen Perl was also chosen as the first president. A few years earlier, the first international e-journal on this topic (International Journal of Computer Science in Sport) was released already. The internationalization is confirmed moreover by the fact that three conferences already took place outside of Europe - in Calgary (Canada) in 2007, Canberra (Australia) in 2009 and Shanghai (China) in 2011. During the symposium in Calgary additionally the president position changed - it has been assigned to Prof. Arnold Baca, who has been re-elected in 2009 and 2011. The 9th Symposium on Computer Science in Sport took place in Europe again, in Istanbul (Turkey) in 2013. During this conference Prof. Martin Lames was elected as the new president of the IACSS.

This chapter starts with some remarks on the process of coaching. It makes clear the requirements for giving support in this area. After that the technological standards for preparing and analyzing a competition are lined out. A final paragraph glances into the future and describes the state of the art and possible developments in real time analysis of sports, which supplies coaches with tactical and strategic hints during a game.

## **2 Coaching**



This paragraph starts with a definition of what we want to understand exactly by coaching. After this coaching is divided into three different activities, preparation, control and debriefing of competition.

These activities are analyzed with respect to the demands they pose to support by computer science. Since it is difficult to describe the potential impact of computer science to coaching for every sport and every group of sports, most examples used come from team sports like football, volleyball and basketball. Things may be quite different in other sports, and the arguments lined up here have to be carefully transformed to further areas of application.

## **Definition of coaching**

Coaching comprises all activities in training that are directly related to a special competition. These activities may occur before, during or after a competition and are termed preparation, control and debriefing of competition respectively. By training we mean coaching as well as all the other activities not related directly to a special competition (Hofmann, Lames & Letzelter, 2002). This definition of coaching differs a little bit from its meaning in English or American, where coaching is more comprehensive. The advantage is that we are now able to distinguish between more long-term oriented or routine measures and those related to a special competition. To make it clear, coaching activities are considered of being a subset of training activities. What are those activities in coaching? Because we have basically a short term range for the measures, we find dominantly activities where we can induce changes on a short term range. That means we are for example talking about cognitive aims like a game strategy. We try to build up inappropriate mental attitude towards the competition, and we have the big issue of motivation which is considered to be very essential by many people. To a lesser extent we find physical adaptations as the aim of coaching because in general this takes longer periods than available for coaching. It is short-sighted to assume that support by computer science contributes only to cognitive aspects of coaching, e.g. developing and implementing a winning strategy. There are good reasons to assume that a decent support in this area, a well-elaborated and well-founded game strategy obtained with the help of up to date technology exhibits very much an influence on motivational and psychological aspects. Up to now this assumption remains hypothetical, though, unless some research is conducted to enlighten that interesting question.

## **A conceptual framework for coaching**

Although we want to restrict the reach of the term coaching to the narrower field of activities in training related to a special competition, it is useful to distinguish different stages in coaching. Especially, the role of computer science is different in those phases. This point will be discussed after a brief introduction of the three stages. Three stages of coaching we want to distinguish. The criterion applied is simply the temporal position of the activities relative to the competition one is preparing for. Coaching activities before competition are called preparation of competition, those during a competition are termed competition control and all coaching activities after a competition belong to the stage of competition debriefing. What are specific aims, what are typical settings of these three stages?

The preparation for a special competition is the first task in coaching. The big issue in this phase is the competition strategy, i.e. an action plan based on an analysis of my own team and the opponent with the aim of maximizing success in the upcoming competition. We may distinguish two phases in this stage of coaching. The strategy has at first to be developed by the coach and then the athletes have to be trained to be able to execute it. This in turn requires a cognitive and eventually a motor learning process simulating decision behaviour in situations the competition strategy is referring to.

Of course we find deviations from the classical roles of coach and athlete. Especially in individual sports athletes are also engaged in strategy development and not just passively receiving the instructions of the coach. The setting in this phase is typically the regular setting of a training session. In general, there is enough time to complete the tasks of this phase, unless we have a tournament with a tight series of matches.



In beach-volleyball for example the typical World-Cup tournaments require several matches per day, what makes it very difficult to extensively develop a strategy and to teach it thoroughly to the athletes.

Control of competition is the task of the coach during the event. The coach observes permanently the game regarding two aspects: Is our competition strategy in effect, i.e. has it become our competition tactics, and is there success or failure of my team? In case of undesired deviations from competition strategy the coach tries to re-establish it. In case of success the coach reinforces the perceived causes of success. In case of failure measures against the perceived causes are to be taken. The longer the match lasts, the more likely deviations from the initial strategy occur.

Two basic problems arise at this stage of coaching. First, we frequently find limits of the coach's ability to realize reasons for undesired behaviour during the match. This is partly due to the fact that the observation does not cease while reasoning. Second, even if appropriate measures are identified, there are limits to a successful intervention. It is difficult to transfer the necessary information to all the players, especially if there are basic changes required.

The latter problem depends largely on the rules of a specific sport. In many sports the rules provide "natural" opportunities for an intervention like breaks between periods of a match. Two, three, four or nine periods are some well-known examples. In some game sports the coach may take time-outs that provide of course excellent opportunities for changing or reinforcing the competition strategy. The replacement of players is another measure to influence the match that is controlled by the rules. Finally, the rules specify the communication between coach and players during a match what is of course important for the ability of the coach to exhibit control. These considerations make clear that the conditions to exhibit control during a match are excellent in some sports, e.g., American football, and not existent in others, e.g. swimming.

Here, it may be speculated that the coincidence of opportunities for coaching during a competition with opportunities for placing advertisements during its broadcasts have led to excellent conditions for coaching in the US' big four: American football, baseball, ice-hockey and basketball.

The setting in this stage of coaching is of course the competition itself. Observation, analysis and communication are processes that run parallel to the competition and have to be performed at its location. In competition debriefing the last performance is analyzed in depth and reasons for success or failure are identified. Another important item of analysis on this stage is whether or not the chosen strategy was appropriate.

The results of these analyses are used as cognitive or motivational feedback for the players. They are also a valuable input for short-term planning of the next periods of training, if the analysis has detected important targets that may be addressed by a short-term training intervention. Targets for long-term training may be collected and aggregated over several analyses. The critical analysis of the chosen strategy is part of the coach's learning process on that meta-level. The setting for the feedback is typically the next training session. Also, at this point in time the short-term consequences of the analysis for the training process have to be known. The analyses may be performed at any place available in time to meet these demands.

## STRESS MANAGEMENT – THE KEY TO SUCCESS IN SPORTS

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### INTRODUCTION

Various studies have shown that exercise helps relieve stress for people young and old; however, stress can be both helpful and harmful in terms of student's sports. "Sports can have both positive and negative influences on student's development. Many sports can improve students' physical well-being and health, self-confidence, motivation to excel, and ability to work with others. In some cases, people who spend considerable time in sports are less likely to engage in drugs and delinquency". Sports are beneficial and can lead to a well-balanced healthy lifestyle because they teach teamwork, dedication, responsibility, and many other qualities you will rely on later in life.

In day to life stress became a big problem in our society, especially in sports. Though a top class sportsman is having scientific coaching and proper nutrition, still he is lacking in showing top class performance because of more stress. Stress always hamper the performance of an Individual in sports competitions. Stress is the response of the body to any demand placed upon them. It arises when they start to worry that they can't cope. It is also considered as the 'wear and tear' of our mind and body as we adjust to the ever changing environment.

STRESS:

#### Definitions:

- "a state of mental or emotional strain or tension resulting from adverse or demanding circumstances."
- "pressure or tension exerted on a material object."

In psychology, stress is a feeling of strain and pressure. Small amounts of stress may be desired, beneficial, and even healthy. Positive stress helps improve athletic performance. It also plays a factor in motivation, adaptation, and reaction to the environment. Excessive amounts of stress, however, may lead to bodily harm. Stress can increase the risk of strokes, heart attacks, ulcers, dwarfism, and mental illnesses such as depression. Stress can be external and related to the environment, but may also be created by internal perceptions that cause an individual to experience anxiety or other negative emotions surrounding a situation, such as pressure, discomfort, etc., which they then deem stressful.

Humans experience stress, or perceive things as threatening, when they do not believe that their resources for coping with obstacles (stimuli, people, situations, etc.) are enough for what the circumstances demand. When we think the demands being placed on us exceed our ability to cope, we then perceive stress.

#### Types of Stress:

1. Acute stress

Acute stress is the most common form of stress among humans worldwide. Acute stress deals with the pressures of the near future or dealing with the very recent past. This type of stress is often misinterpreted for being a negative connotation. While this is the case in some circumstances, it is also a good thing to have some acute stress in life. Running or any other form of exercise is considered an acute stressor. Some exciting





or exhilarating experiences such as riding a roller coaster is an acute stress but is usually very fun. Acute stress is a short term stress and in result, does not have enough time to do the damage that long term stress causes.

## 2. Chronic stress

Chronic stress is unlike acute stress. It has a wearing effect on people that can become a very serious health risk if it continues over a long period of time. Chronic stress can lead to memory loss, damage spatial recognition and produce a decreased drive of eating. The severity varies from person to person and also sex difference can be an underlying factor. Women are able to take longer durations of stress than men without showing the same maladaptive changes. Men can deal with shorter stress duration better than women can but once males hit a certain threshold, the chances of them developing mental issues increases drastically.

## SPORTS:

Sport (or sports) is all forms of usually competitive physical activity which, through casual or organized participation, aim to use, maintain or improve physical ability and skills while providing entertainment to participants, and in some cases, spectators.[2] Hundreds of sports exist, from those requiring only two participants, through to those with hundreds of simultaneous participants, either in teams or competing as individuals.

## POSITIVE VS. NEGATIVE ASPECTS OF SPORTS

### POSITIVE

"Experiencing stress in sports can be a positive and good learning experience. Sports participation can teach your athlete to handle competition, defeat, and even performance anxiety" (Greydanus). "Positive aspects of sports include, a sense of belonging, competition, a feeling of accomplishment and enjoyment" (Rocco).

### NEGATIVE

"The negatives may also be a unhealthy view of competition, less time on academics, and teaching aggression" (Rocco). "For most young people athletics can and should be a positive experience. When supervised and coached by people who care, sports can be a great learning experience" (Rocco). Sports provide a great outlet for adolescents, an outlet in which they can take a lot of valuable lessons away from, that is, if they are handled appropriately.

## STRESS MANAGEMENT :

Stress management refers to the wide spectrum of techniques and psychotherapies aimed at controlling a person's levels of stress, especially chronic stress, usually for the purpose of improving everyday functioning.

In this context, the term 'stress' refers only to a stress with significant negative consequences, or distress in the terminology advocated by Hans Selye, rather than what he calls eustress, a stress whose consequences are helpful or otherwise positive. Stress produces numerous physical and mental symptoms which vary according to each individual's situational factors. These can include physical health decline as well as depression. The process of stress management is named as one of the keys to a happy and successful life in modern society.

## SYMPTOMS OF STRESS:

Basically we can broadly classify symptoms of stress into three main groups. They are 1. Physical Symptoms 2. Emotional symptoms 3. Relational symptoms

### PHYSICAL SYMPTOMS:

- Sleep disturbances
- Hypertension
- headaches or migraine
- irregular heart beat
- palpitation and chestpaint,
- fatigue,



hair loss,  
upset tummy, constipation,  
heartburn,  
shortness of breath, asthma  
attacks, muscle weak, falling sick frequently etc.

#### EMOTIONAL SYMPTOMS:

Worry,  
anxiety,  
irritable,  
nervous,  
frustration,  
depression,  
moody,  
lethargy,  
tired,  
difficulty in sleeping,  
confusion and difficulty in concentrating,  
inability to think clearly,  
a sense of helplessness.

#### RELATED SYMPTOMS :

Increased arguments,  
aggressive and abusive,  
tendency to over react,  
anti-social, violence etc.

#### WHAT CAUSES ATHLETES STRESS?

One of the primary causes of stress is believed to be too much emphasis on winning; it is a common-held belief that the "winning at all costs" attitude has been taken too far. "The downside of the extensive participation in sports by American adolescents includes the increased high expectations by parents and coaches to win at all costs. Researchers have found that adolescents' participation in competitive sports is linked with competition anxiety and self centeredness". Adolescents become overworked and begin to see sports as too demanding when pressured by parents and coaches. "Winning is certainly a goal of competitive sports, but sometimes players feel more than just the thrill of the game. Being in an environment that stresses winning at all costs can make you totally stressed out". Another huge stressor for student athletes is time management balancing school and sports is not an easy task, and can prove to be very stressful. Other stressful events can pile on, eventually leading to what has come to be called BURNOUT. "Negative consequences of overwhelming stress many, including chronic fatigue (a.k.a. athletic burnout syndrome) depression and rapid loss of previously learned skills. Burnout can also result from overtraining, encouraged by overzealous parents, coaches, or the teenagers".

#### GOOD STRESS VS. BAD STRESS IN SPORTS:

##### EUSTRESS VS. DISTRESS

Eustress is defined as "a good type of stress that stems from the challenge of a pleasant activity...(it) pumps you up, providing a healthy spark for any task you undertake."

Eustress consists of two parts. The prefix eu- derives from the Greek word meaning either "well" or "good." When attached to the word stress, it literally means "good stress".

Distress is defined as "a bad type of stress that arises when you must adapt to too many negative demands."





Example: Tiger Woods would often tense up on the golf course, which worried his father, but Tiger explained that is just how he enjoys himself, “what seemed like distress to his father was eustress to Tiger.”

It is essential that athletes differentiate between the two types of stress: eustress and distress, when deciding what is best for their health. “If sports make you so nervous that you get headaches, become nauseated, or can’t concentrate on other things, you’re experiencing symptoms of unhealthy, potentially chronic (which means long-lasting and continuous) stress”.

## **STRESS Vs SELF CONFIDENCE :**

What is Self-Confidence?

Two main things contribute to self-confidence: self-efficacy and self-esteem.

We gain a sense of self-efficacy when we see ourselves (and others similar to ourselves) mastering skills and achieving goals that matter in those skill areas. This is the confidence that, if we learn and work hard in a particular area, we'll succeed; and it's this type of confidence that leads people to accept difficult challenges, and persist in the face of setbacks.

This overlaps with the idea of self-esteem, which is a more general sense that we can cope with what's going on in our lives, and that we have a right to be happy. Partly, this comes from a feeling that the people around us approve of us, which we may or may not be able to control. Your level of self-confidence can show in many ways: your behavior, your body language, how you speak, what you say, and so on. Look at the following comparisons of common confident behavior with behavior associated with low self-confidence. Which thoughts or actions do you recognize in yourself and people around you?

Self-Confident      Low Self-Confidence

Doing what you believe to be right, even if others mock or criticize you for it. Governing your behavior based on what other people think.

Being willing to take risks and go the extra mile to achieve better things. Staying in your comfort zone, fearing failure, and so avoid taking risks.

Admitting your mistakes, and learning from them. Working hard to cover up mistakes and hoping that you can fix the problem before anyone notices.

Waiting for others to congratulate you on your accomplishments. Extolling your own virtues as often as possible to as many people as possible.

Accepting compliments graciously. “Thanks, I really worked hard on that prospectus. I’m pleased you recognize my efforts.” Dismissing compliments offhandedly. “Oh that prospectus was nothing really, anyone could have done it.”

As you can see from these examples, low self-confidence can be self-destructive, and it often manifests itself as negativity. Self-confident people are generally more positive – they believe in themselves and their abilities, and they also believe in living life to the full.

## **PERFORMANCE-ORIENTED MOTIVATION VS. MASTERY**

Performance-Oriented Motivation mainly focuses on “winning, public recognition, and performance relative to others.” Mastery Motivation tends to focus more on the skill development and “efforts to reach self-determined standards of success”. “Researchers have found that athletes with a mastery focus tend to see things in a big picture perspective, that is to say they “are more likely to see the benefits of practice, persist in the face of difficulty, and show more skill development over the course of a season”. It is so important for student athletes to have realistic expectations and goals.

## **HELPFUL HINTS FOR STRESS MANAGEMENT**

4 Relaxation Techniques that Help to Ease Pressure:

1. Deep Breathing
2. Muscle Relaxation
3. Visualization (thinking happy thoughts)
4. Mindfulness (watching out for and disposing of negative thoughts)



\*It is also vital that athletes have other outlets, that they are able to escape, whether it be hanging out with friends or a good book.

The Palo Alto Medical Foundation, suggests the following tips for better stress management:

1. Slow down

- Find something to make you laugh
- Play at a playground
- Be a kid for couple of minutes
- Listen to music -Have a bath
- Get a massage
- Play a musical instrument

2. Exercise helps your mind and body

3. Get plenty of rest and eat well

4. Discuss your problems with someone

**HERE ARE SOME OTHER STRATEGIES FOR DEALING WITH STRESS:**

- Schedule time for vacation, breaks in your routine, hobbies, and fun activities.
- Try to arrange for uninterrupted time to accomplish tasks that need your concentration. Arrange some leisure time during which you can do things that you really enjoy.
- Avoid scheduling too many appointments, meetings, and classes back-to-back. Allow breaks to catch your breath. Take a few slow, deep breaths whenever you feel stressed. Breathe from the abdomen and, as you exhale, silently say to yourself, "I feel calm."
- Become an expert at managing your time. Read books, view videos, and attend seminars on time management. Once you cut down on time wasters, you'll find more time to recharge yourself.
- Learn to say "no." Setting limits can minimize stress. Spend time on your main responsibilities and priorities rather than allowing other people's priorities or needs to dictate how you spend your time.
- Exercise regularly to reduce muscle tension and promote a sense of well-being.
- Tap into your support network. Family, friends, and social groups can help when dealing with stressful events.

**CONCLUSION:**

"There are a number of techniques that can be helpful in preventing or reducing sports induced stress. Relaxation training, meditation, hypnosis, breath control, yoga, prayer, and biofeedback are all techniques the help to relieve stress. It is recommend that athletes who are under excessive sports-induced stress work with sports medicine clinicians or psychologists who can teach them some of these methods. You can talk to your health care professionals to more information or a referral, if needed. Stress is inevitable for everyone, regardless of what you are doing. In sports it is important to keep things in perspective: "Sports are about enhancing self-esteem, building social skills, and developing a sense of community. But remember above all, sports are about having fun".

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## EFFECT OF SELECTED PHYSICAL ACTIVITIES ON ANTHROPOMETRIC AND PHYSIOLOGICAL VARIABLES AMONG STUDENTS

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### ABSTRACT

Man is an active animal, he responds to his environment by possessing capacity and desire through physical movement. During movement he is dependent upon his skeletal muscles, his nervous system, his circulatory system, and many other parts of the body. All components of his body are in turn dependent upon movement for their continued vigor; health and development'. Physical activity is one of numerous factors, which influence the growth and development by children and adolescents. It is of the utmost importance to know the physiological mechanism that sustains and acts as the basis of everybody's response to exercise. In the course of physical exertion a number of co-ordinates and compensatory adjustments takes place throughout the body. It is the general consensus that enough benefits to health in respect of desirable body composition require the incorporation of habituate physical activity from an early age.

Physical activity is a biological necessity. It is with physiological processes and principles as they relate to movement. It is a well known fact that exercise tones up the muscles, increases flexibility by loosening the muscles and increases heart rate. Arteries and capillaries open up to increase blood flow to the muscles for supply of the required nutrients. This in turn activates the nervous system, reduces time for motor reaction and improves body co-ordination. In primitive society when man had to do all the work by himself, physical fitness was most needed as an essential part of his daily living. Primitive man had a robust physique, immense vigor, persisting endurance and was swift in all moving actions. He was the architect of his own home. His daily performance of activities for procuring food, building shelter, protecting himself from natural calamities, fighting out his enemies provided him with energy, involvement in physical activities which kept him physically fit and mentally alert. The tendency to move is 'inborn'. Movement improves muscle tone and creates a sense of well being besides creating pleasure. Movement of specific type of activity helps to sustain agility and alertness, besides exerting a deep physical and psychological influence. Lack of it can cause obesity and degenerative metabolic diseases. Any exercise of activity in the end would produce some physiological adaptations to the body. Moreover exercise increases the capacity by stimulating morphological, physiological and behavioral changes in the organism.

The human body and its efficiency in difficult situations are perhaps the most important factor in the history of mankind. According to "Miller and Allen" "People are designed for physical activity". In primitive age only the fittest could survive, the rest will perish. People had to exert few hours or sometimes whole day running towards animals for their food. Often they were charged and attacked by wild animals. Primitive people had to run, climb and jump in order to meet their day to day needs and escaping from the enemies. All these developed a real powerful and agile body.



## RELATIONSHIP OF ANXIETY AND ACHIEVEMENT MOTIVATION TO GOAL KEEPING AMONG SECONDARY SCHOOL LEVEL GIRL HOCKEY PLAYERS

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### ABSTRACT

The present investigation has been conducted with the aim to find out the relationship of Anxiety and Achievement motivation to goal keeping among Secondary School level girl hockey players. The study was conducted on ten girl hockey goalkeepers from different schools of A.P. Their age ranged between 14-19 years. The Sports Achievement motivation test standardized by Kamlesh and the State and Trait Anxiety inventory of Spielberger was selected for this study. To determine the relationship of anxiety and achievement motivation to goal keeping among girl hockey players, Pearson's product moment method of correlation was used. The level of significance was set at 0.05 level in order to check the significance of calculated correlation. On the basis of findings of the study, significant relationship of state anxiety and trait anxiety to goalkeeping performance was observed for state (0.904) and trait anxiety (0.844) while no significant association with achievement motivation was found.

**Key Words:** Hockey, Pearson's product moment method, Achievement motivation, State anxiety, Trait Anxiety.

### INTRODUCTION

India has been the most powerful field Hockey nation in Olympic history, a fact, which is not as unusual as, one might think. It is due to the popularity of this sport in India. There was a golden era for Indian Hockey between 1928 and 1956, when India won six gold medals and 30 consecutive games. Despite its popularity and performance, in India, scientific studies on Hockey are scanty. Now-a-days girls are also participating actively in Hockey and during last few years our Indian Women's Hockey team has performed well at International level. The development of sportsman to enable him to achieve high is not only confined to physical process of physical fitness rather it is an accepted phenomena that psycho-socio traits are also required to maintain the balance. Psychology as a behavioral science has made its contribution in improving sports performance. The success and failure of an individual athlete depends upon his/her physical ability, conditioning, training, mental preparation and the ability to perform well under pressure. It is not uncommon to hear, coaches and athletes express disbelief on how poorly their team performed against a certain opponent or how they feel apart in a crucial situation. In modern competitive sports, the anxiety developed in sportsmen and sportswomen affect their performance. The sportsmen like other athlete are anxiety prone while participating in competitive sports. Anxiety is a type of emotional disturbance, it may be a motivating force or it may interfere with successful performances. In the field of physical education and sports, no athletes can win or show better performance without motivation. An understanding of the nature of achievement motivation is helpful in understanding kinds in general as well as individually in terms of what they do, how well they do and how long they continue in sports. Dureha (1995) administered Sports Achievement Motivation Test (Kamlesh, 1993) and Rainer's Sports Competition Anxiety Test to find out achievement motivation and precompetition anxiety among Indian Intervarsity Hockey players. He compared high and low pre-anxiety, competition anxiety groups and its effect on achievement motivation. It was concluded that there is a significant relationship between achievement motivation and precompetition anxiety

of Hockey players and significant difference in the level of achievement motivation of high and low pre-competition anxiety group of intervarsity level male Hockey players. In modern day sports psychological aspects of the player plays a major role in training and achieving high performance. Because of this, investigation of various psychological aspects related to particular sports and their relation has been a prime importance. The present investigation has been conducted with the aim to find out the relationship of Anxiety and Achievement motivation to goal keeping among Secondary School level girl hockey players.

## Material & Method

The study was conducted on ten girl Hockey goalkeepers from different schools of Andhra Pradesh. Their age ranged between 14-19 years. For the selection of questionnaires, the research scholar made sincere efforts to review the related literature, and then held a series of discussions with the experts. Secondly, availability of reliable and valid questionnaire is also an important consideration in directing one's ingenuity for the choice of variable. The sports achievement motivation test standardized by Kamlesh (1993) and the state and trait anxiety inventory of Spielberger et al (1970) were selected for this study. The Pearson's product moment correlation method was used to find out the relationship of anxiety and achievement motivation to goalkeeping among girl Hockey players. Descriptive statistics - mean and standard deviation was used to describe the average and variability of trait anxiety, state anxiety and goalkeeping performance.

## RESULTS & DISCUSSION

The descriptive measures in terms of means and standard deviation of the girl Hockey players in achievement motivation, trait and state anxiety scores, and goalkeeping performance are show Table  
Table 1: Mean and standard deviation of girl Hockey players in sports achievement motivation, trait and state anxiety and goalkeeping performance

Variable	Mean	Standard Deviation
Sports Achievement motivation	21.60	15.80
Trait Anxiety	38.20	25.14
State Anxiety	35.30	20.80
Goalkeepig performance	4.70	4.52

Table 1 shows that the mean and standard deviation of girl Hockey players in sports achievement motivation were 21.6 and 15.8. In case of trait and state anxiety the mean and S.D. were  $38.2 \pm 25.14$  and  $35.3 \pm 20.8$  respectively. For goalkeeping performance the mean and S.D. were 4.7 and 4.52.

Table 2: Relationship of Trait & State anxiety and Achievement Motivation to goalkeeping performance among girl Hockey

Table-2 shows the relationship of achievement motivation to goalkeeping among girl Hockey players

Variables	Correlation coeffiecient
Trait Anxiety and Goalkeeping Performance	-0.844*
State Anxiety and Goalkeeping Performance	-0.904*
Achievement Motivation and Goalkeeping Performance	-0.380

\*Significant at 0.05 level

Table – 2 indicates a correlation value of  $-0.904$  for the state anxiety to goalkeeping, which was significant as it was negatively correlated with value of 0.632 required for significance at 0.05 level.



## FINDINGS OF THE STUDY

showed significant negative correlation ship of state and trait anxiety to goalkeeping performance. Further achievement motivation levels of goalkeepers were found to be unrelated to goal keeping performance. Competitive sporting situation always arouses anxiety (Singh, 1982); fear of failure is most prominently identified as principal factor of arousal of anxiety in such context. Anxiety in both the forms i.e. trait and state leads to perception of situation or surrounding with feeling of apprehension and threat leading ultimately to heightened emotional condition. Emotionally charged state of mind interferes with normal functioning of nervous system. In this state of mind the focus of attention rapidly fluctuate between situational perceptions and resultant physical and physiological responses. This nervous, physical and physiological disturbance, which is resultant of anxiety ultimately, affects mental and physical preparedness of sportsman and interferes further with concentration, reaction time, coordination, and accuracy of movement thereby affecting the sports performance (Ghosh et al, 1991).

Hence the negative relationship of both trait and state anxiety to goalkeeping performance may be attributed to this factor. The subjects for this study were of school level. By comparison, the standard was below average. Hence the players were of lesser standard and of average achievement motivation level. This may be the reason that no significant relationship was found between motivation and goalkeeping performance. On the basis of findings of the study the hypothesis that there will be significant relationship of state anxiety, trait anxiety and achievement motivation to goalkeeping performance is accepted for state and trait anxiety and rejected for achievement motivation.

## CONCLUSION

- Trait anxiety is negatively related to goalkeeping performance. State anxiety of inter school level goalkeeper has negative co-relation with their goalkeeping performance.
- Trait and state anxiety may negatively affect goal-keeping performance.
- The level of schoolgirl goalkeepers is of average level and therefore level of achievement motivation has no relationship with their performance.

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## GAMES ARE THE GATEWAY OF THE ENLIGHTMENT

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Play is a process that is freely chosen, personally directed and intrinsically motivated. That is children and young people determine and control the content and intent of their play, by following their own instincts, ideas and interests, in their own way for their own reasons.

Physical activity in childhood is important for many reasons and a variety of sources indicate a direct relationship between physical activity and children's health. In early childhood physical exercise helps build strong bones, muscle strength and lung capacity.

According to piaget, play provides children with extensive opportunities to interact with materials in the environment and construct their own knowledge of the world : making play one of the most important elements of cognitive development children who are able to play freely with their peers develop skills for seeing things through another person's point of view, for cooperating helping.

Sharing and solving problems. Children's play can help to build good social networks, as it provides them with opportunities to interact with one another at places children play. Proving a direct causal relationship between play, health, cognition and well being is not easy as there are many overlapping variables including genetic or environmental conditions.

The play plays a vital role for children's happiness thus the play is important key factor in ever life of a child. It needs to all-round development of the child. A world that understands and supports children play is a world that is likely to be healthier, more vital, more alive and happier than a world without play.

Play is integral to the academic environment. It ensures that the school setting attends to the social and emotional development of children as well as their cognitive development. It has been shown to help children adjust to the school setting and even to enhance children's learning readiness, learning behaviors, and problem-solving skills. Social-emotional learning is best integrated with academic learning; it is concerning if some of the forces that enhance children's ability to learn are elevated at the expense of others. Play and unscheduled time that allow for peer interactions are important components of social-emotional learning.



## INFLUENCE OF SPORTS PSYCHOLOGY IN IMPROVING SPORTS PERFORMANCE

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**Sports Psychology** is the study of how psychology influences sports, athletic performance, exercise, and physical activity. Some sports psychologists work with professional athletes and coaches to improve performance and increase motivation. Other professionals utilize exercise and sports to enhance people's lives and well-being throughout the entire lifespan.

### Sports Psychology is a study of athletes and their behaviors

Sport psychology is the scientific study of people and their behaviors in sport contexts and the practical application of that knowledge. Sport psychologists identify principles and guidelines that professionals can use to help children and adults participate in and benefit from sport and exercise activities in both team and individual environments. Sport psychologists have two objectives in mind when it comes to sport psychology. First, to understand how psychological factors affect an individual's physical performance and secondly, to understand how participation in sport and exercise affects a person's psychological development, health, and well-being. Sport psychology deals with the increase of performance by the management of emotions and the minimization of psychological effects of injury and poor performance. Some of the most important skills taught are goal setting, relaxation, visualization, self-talk, awareness and control, concentration, confidence, using rituals, attribution training, and periodization. It is important to learn and understand the individual skills in sport psychology.

### Major Topics Within Sports Psychology

There are a number of different topics that are of special interest to sports psychologists. Some professionals focus on a specific area, while others study a wide range of techniques.

- **Imagery:** Involves visualizing performing a task, such as participating in an athletic event or successfully performing a particular skill.
- **Motivation:** A major subject within sports psychology, the study of motivation looks at both extrinsic and intrinsic motivators. Extrinsic motivators are external rewards, such as trophies, money, medals or social recognition. Intrinsic motivators arise from within, such as a personal desire to win or the sense of pride that comes from performing a skill.
- **Attention Focus:** Involves the ability to tune out distractions, such as a crowd of screaming fans, and focus attention on the task at hand.

### Improves Skill Performance

A study conducted for the article "The Effects of Centering on the Free-Throw Shooting Performance of Young Athletes" investigated the effectiveness of a centering breathing on the free throw shooting



percentage of young athlete's age ten to eleven years. The study was conducted in Sydney, Australia on two female athletes and three male athletes. It was found that through the use of visual inspection the centering breath was shown to be a useful tool for improving athlete's performance. Findings from this study indicated that centering on the task at hand, breathing, and other psychological skills are beneficial in a variety of sport skills.

## **Reduces Anxiety and Negative Stressors**

Anxiety and negative stressors are the most common psychological issues that accompany athletic injury. An athlete's response to injury, also known as cognitive appraisal, is influenced by both situational and personal factors. In addition, behavioral and emotional responses have an effect on the mental and physical recovery from injury. Coping skills in sport psychology are very important in aiding an athlete to a full and healthy recovery. Mental imagery, relaxation, positive self-talk, and goal setting are examples of coping skills that may influence positive behavioral and emotional outcomes such as anxiety reduction and positive outlook.

Competitive anxiety is the most frequently investigated research area in Sport Psychology. In order to understand how to relieve competitive anxiety it is important to examine the relationship between basic psychological skills usage and the intensity and directional dimensions of competitive anxiety.

## **Four Basic Psychological Skills**

- ✧ There are four basic psychological skills generally exposed in Sport Psychology. Mental imagery, the first psychological skill, consists of five main categories; cognitive-specific, cognitive-general, motivational-specific, motivational-general mastery, and motivational-general arousal. Each skill can serve one or numerous functions, such as motivation or learning a new skill.
- ✧ Relaxation is the second psychological skills in sport psychology. Relaxation can include unstructured or more structured techniques. These techniques can be grouped into two categories; muscle-to-mind and mind-to-muscle. Muscle-to-mind is better known as progressive muscular relaxation and mind-to-muscle is better known as transcendental meditation. Relaxation is considered to be relevant in regulating activation and arousal levels.
- ✧ The third psychological skill is self-talk. Self-talk is considered a verbalization phenomenon within many athletes where they are addressing themselves. Self-talk has been shown to have both cognitive and motivational functions.
- ✧ The last psychological skill is goal-setting. Outcome, performance, and process are three different types of goals which can influence athletic performance by extracting changes in athletes' levels of focus, attention spans, self-confidence, effort, and motivation.

## **Sport Psychology Benefits**

Returning athletes to competition after sport injury is a key role of athletic trainers and physical therapists. Psychological skills can be used during sport injury rehabilitation to motivate athletes to adhere to rehabilitation, to increase speed of recovery, to control anxiety levels, and to enhance self-confidence. In addition, athletic trainers and physical therapists are in the best position to educate athletes on the use of psychological interventions to enhance the recovery process. Therefore, receiving formal training probably would increase positive attitudes toward the use of psychological skills and would strengthen the likelihood that they are used during rehabilitation. Overall, athletic trainers and physical therapists hold positive attitudes on the effectiveness of psychological skills to enhance the rehabilitation process.

Among the various research areas in Sport Psychology, the most frequently investigated topic is the construct of competitive anxiety. Competitive anxiety may have potentially devastating effects on an athlete in performance environments. While examining the relationship between the use of basic psychological skills and



the intensity and directional dimensions of competitive anxiety, findings revealed that the participants maintained the intensity of their anxiety response prior to competition and could deploy goal-setting, imagery, or self talk to enable facilitative interpretations of anxiety related symptoms to performance. Higher levels of self confidence and an optimistic outlook toward forthcoming competition were also expressed. Psychological skills, including goal-setting, imagery, self-talk, and relaxation allegedly helped to control the anxiety response.

Athletes use various types of goals during practice and competition to improve performance during competition. Participants found that goal setting did not lower the intensity of anxiety related symptoms; goal setting only enabled them to control their symptoms. These goals resulted in heightened levels of effort and motivation. It was found that the increase perceived control over anxiety responses enabled facultative interpretations, sustained positive outlook toward the upcoming competition, and elevated feelings of self self confidence.

The second causal network, mental imagery is divided into two categories; cognitive-specific and cognitive-general. Cognitive-specific is better known as imagining the performance of specific skills. Cognitive-general is imagining the execution of performance plans overall. As with goal-setting, mental imagery did not remove or lower competitive anxiety related symptoms, instead it enhanced perceived control over the reactions. Self doubts and worries about strength, examples of cognitive symptoms, and triggered images of perfect performances which led to feelings of familiarity with the experienced symptoms.

The third causal network, self-talk may also be divided into two categories; overt and covert self-talk. Each of these categories are defined as positive self-talk either externally, overt, or internally, covert. When experiencing somatic and specific cognitive anxiety related symptoms, including doubts about performance and physical shaking, participants found that self-talk actually helped to control the anxiety responses. Self-talk helps to increase concentration on the task at hand. Increased levels of effort and motivation may be found by using constructive and adaptive statements regarding personal accomplishments and positive verbalizations about the training LEADING up to the competition.

The final causal network, relaxation may be achieved by listening to calming music, stretching, taking deep breaths, or by arranging a more structured relaxation technique such as progressive muscular relaxation. Relaxation may lower the intensity of the anxiety response during potentially tragic situations. Relaxation may also heighten perceptions of control over anxiety related symptoms. During specific sports, such as rugby or football relaxation may not be the causal network of choice because sports such as these require athletes to be psyched up and not necessarily relaxed.

"Choking under pressure" is a maladaptive response to performance pressure whereby choking models have been identified, yet, theory matched interventions have not been empirically tested. Choking occurs when athletes pay too much conscious attention to well rehearsed routines that play out better when the athlete is on autopilot. Choking is the opposite of panic, which may occur under sudden, fearful circumstances causing the shutdown of conscious thought and therefore causing athletes to relapse almost entirely to instinct. Unfortunately, choking is natural and may happen to any athlete at any level, even skilled athletes whose fine-tuned actions are nearly all instinct. Pre-performance routines, such as the four causal networks explained above may reduce choking effects. However, the most effective way for athletes to fight and prevent choking is to put themselves in frequent choke inducing situations, specifically artificial choking situations during practice. Monitoring their own reactions will help to control the athletes during actual choking situations throughout their athletic performance.

## Review and Conclusions

Sport Psychology is the scientific study of athletes and their behaviors in the context of sports. It also involves the practical application of Sport Psychology knowledge and the integrating of psycho-social approaches. Sport Psychology may assist in the rehabilitation of a variety of injuries that may occur during



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athletic competition, practice, or exercise. Sport Psychology has been shown to speed up the rehabilitation process and assist the injured athlete in the development of an improved attitude and approach to rehabilitation

Sport Psychology may be important variable in improving performance in an assortment of sports skills. Integrating psychology into daily life, including practices, competitions, and exercises may also assist the athletes to prevent "choking" susceptible situations. Each and every athlete at any level may experience a choking situation. Learning the psychological skills taught in sport psychology may help athletes to handle choking situations better or even prevent them from happening.

Athletic trainers, physical therapists, coaches, parents, and athletes themselves are all responsible for learning and utilizing the fundamentals of sport psychology. Mental imagery, relaxation, self-talk, and goal setting are all examples of psychological skills in Sport Psychology. These four causal networks may assist and influence positive behavioral and emotional outcomes. Sport Psychology may help to control anxiety responses, lower the probability of an athlete being put in a choking situation, and most importantly, give an athlete a positive outlook, more self-confidence, effort, and motivation. Each of these assets assist athlete's in the processes of experiencing success.

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## PHYSICAL EDUCATION AND SPORTS IN SECONDARY SCHOOLS -IMPACT ON ACADEMIC PERFORMANCE

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### ABSTRACT

This article is regarding the efficacy of Physical Education and Sports in Secondary Schools and Its Objective. The roles of government in this issue are also elaborated in this paper. In physical education classes, children should have an opportunity to participate in equal ability group so that they have a chance to exhibit their talent. Important is to understand how best we can achieve mutual benefit and how efficiently we can achieve the objectives of general education. At the last of article it is focused on recasting the existing education programmes.

Key words: - Physical Education, efficacy, sports, educational achievement.

### INTRODUCTION

Role of Physical education and sports: Every education commission has recognized the importance of physical education and emphasis the educational goal of development of child. Bucher defines physical education as "an integral part of the total education process a field of Endeavour that has as its aim the development of physically, mentally, emotionally and socially fit citizens through the medium of physical activities that have been selected with a view to realize these outcomes. The word 'physical' refers to the body character is traits such as physical strength, physical development, physical health and physical appearance. Thus physical education refers to the process of education that goes on in the school through all activities in the development and maintenance of the individual body. There is a growing awareness and insists that boys and girls, during their school years be given opportunities to obtain use full and positive information to success in the school. A programme of health training instruction should be familiarly connected with other school activities, which have health content and health relations because activities in sport and games are the means so achieving health training. In physical education classes, children should have an opportunity to participate in identical ability groups that they have a chance to exhibit their talent. The vast development of motor qualities is an asset to a sports man for the athletic success. In 11-14 years of age group the motor qualities

Can be developed very fast. The development and refinement of performance in motor activities is one of the major developmental tasks of childhood. According to Robert M Malina all normal children have potentials to develop and learn a variety of fundamental and special motor activities since such activities are an integral part of their behavioral repertoire. As referred in physical training instruction manual it is given that Cardio-respiratory endurance is characterized by moderate contractions of large muscle groups for relatively longer periods of time, during which maximum adjustments of the cardiorespiratory systems are necessary as in sustain in running, swimming, bicycling and also the Cardio-respiratory endurance involves the efficiency of such elements as the heart and lungs, the vessels supplying the blood to all parts of the body, the oxygen carrying capacity of that blood and the capillary system receiving that blood. Letter Moser studied certain cardio-respiratory changes on two physical education classes of grade seven of equal physical fitness. One of



the classes ran 880 yards daily in addition on or malprogramme of physical education where a so their classes raved as the control. The experiment AL group improved significantly in 600 yard run walk and Kasich pulse recovery test. Mookharjee in his study found that are gular programme of swimming of 15 weeks duration significantly improved Cardio-pulmonary dynamic index of swimmers. Certain physical fitness tests are available like Patrick Ross Cobb had constructed a motor fitness test battery for girls in lower elementary grades. The items included in this test were Clarke's strength composite, MI cloy' send uranceratio, leg extension and flexion, well's sit and reach, Dodging run, bass length wire stick balance, and vertical jump. And Glover had developed a physical fitness test for the primary grade children. The items of the test were. Standing broad jump. 400 feet shuttle run c. Sit ups and d. seal crawl. Role of Indian Government for Physical Education: The central government has been advising state government to arrange special accent on preservation and development of play-field, indeed, the back bone of the sports promotion al programmed. The importance of participating in sports and physical education activities for good health, aided green of physical fitness, increase an individual efficiency and also its value as a mean so beneficial activity promoting social agreement and discipline, is recognized in the sports policy adopted by the government of India. The policy speaks of promoting and developing traditional and modern games and sports and also yoga, by providing the necessary facilities and infrastructure on large scale and by inculcating sports conscious ness among the you the land masses and physical education activities, the nation is made healthy, f it and strong. The national policy on education has clearly stated that sports and physical education are an integral part of learning process and will be included in the evaluation of performance that then action wide infrastructure for physical education. Also the state and central governments should be educated to give preference and positive considerations to those students who undergo physical educations as a subject or course of study in matters of education and employment.

### **Criteria of a Sports School:**

The sports school most provides all the standards of equipment and facilities depending up on the needs of various age groups. When one deals with children it must be strictly according to the specification otherwise it may do much harm to the children. Doctor's services are needed not only for treatment of diseases, injuries etc. But also for selection of candidates too. The candidates for admission must be examined by well-qualified specialists. Generally, the admission requirements are only good health and good academic grade in schools. If these election is made for the 10–11 years of age groups, it must be purely on the basis of health. However, some of the candidates may be admitted conditionally and for 2–3 months trail less on scan be give number close observation be for their admissions confirmed.

### **Objective of the efficacy Physical Education and Sports in Secondary Schools:**

The objective of the present review is to assess the development of physical education and sports in the secondary school. To evaluate the physical education in trauma sports competition to assess the development to f physical education in the school.

No doubt physical education comes as a handy-means in this respect and help s the child to in turret and manipulate the external world, offers an education AL dimension to the activity and tries to bridge up the gap between school and physical world but one thing is definite, that the gap between physical education and general education is getting reduced to the benefit of both. The National Education Association (1918) set forth Cardinal Principles of Secondary Education which include the following seven objectives; health, command of fundamental process, worthy home membership, vocation, citizenship, worthy use of leisure time and ethical character. In this respect physical education aims not only in teaching physical activities but in achieving the goals of general education through activities.

Our schools have to make physical education at rely integral subject of school curriculum. This requires conditions to be fulfilled; they should meet the various technical requirements of physical education





and secondly, they should give special importance to the subject so as to make it acceptable to the pupil on par with other school subjects. This can be done only when we have evolved a sound philosophy and a scientific attitude along with humility indicative of to be corrected in necessary, and desire to adjust and adopt our work to suit the needs and interest of the students. Besides, to render physical education, to plan, organize, conduct and work effectively, good leadership and wise follower-ship are required. Mostly time given to physical education in a school goes under the name of tool consisting of two or three periods at lower levels but as the student moves towards higher class's physical education rarely find sap lace in the time table probably under the excuse of examination preparation. The present conditions seem to be quite conducive for such a dialogue and we have to take the best advantages of changing attitudes in the educators and administrators. The essential prerequisite for such a dialogue, of course, is a positive self-concept along with mutual respect and regard for each other. What is more Education as a dynamic force of improvement and development has to take in to confidence various area so special interest like Health Education, Recreation, Physical Education, Work Experience, Movement Education, Fine Arts etc., and coordinate the forces in order to give meaning and objective to its activities.

## **Conclusion:**

At present, physical education is not given an educational orientation as such; this is because of the emphasis given to their recreational aspects rather than to the educational aspects. We have to look at the physical education from the educational perspectives because it has a direct impact in the teaching-learning process and organizational and administrative aspects. In general it is found that The problem in the present day school is that the class room teachers do not undertake physical education programmes and physical education teachers do not participate in class room teaching and other curricular programmes with their salt that wide gap exists between class room and play fields. Also the state and central governments should be educated to give preference and positive considerations to those students who undergo physical education as a subject or course of study in matters of education and employment.

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## METHODS OF SPORTS TRAINING

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### ABSTRACT

The importance of motor fitness of its citizens is well recognized by most of the nations of the world. Many nations have their unique schemes of promoting and monitoring physical fitness of its citizens in a systematic way. If the United States, the President's Council of Physical Fitness and Sports [1958] sponsors National Conferences on physical fitness, circular promotions and pamphlets, conduct clinics for various segments of population and administers the scheme of awards for youth on the basis of performing creditable in AAPHER youth fitness test or on the basis of stipulated minimum participation records in various sports.

Objective of motor fitness as an important quality to be developed and implied in the field of modern physical education Kraus and Weber during World War II brought glaringly the significance and importance of physical fitness. Almost every nation in the world attaches great importance to the development of physical fitness and sports in order to improve the nation health and for the well being of the future generation. Hence, a large number of governmental and Para governmental organization in close collaboration with private bodies administer and supervise the development of these programmes and sports. Certain nations like G.B.R. and U.S.S.R. every try to project the superiority of their political ideology and their political and social systems through achievements in the field of sports. The increased number of athletes (sportsman) participating in the great quadrennial sports festival, and the Olympic games from all over the world is also an indication of the popularity and development of sports. Furthermore the non ending creation of new records shows that continuous upward tread and improvements in the standard of physical fitness and sports performance. The acquisition of new standards may be attributed to better understanding of human organization in relation to physical and motor performance qualities that under lie success in any sports endeavor besides intensive research in the Ares of human fitness, sports, physiology, sports medicine, training methods, nutrition to many others areas related and specific sports.

A scheme of Nation physical efficiency drive was launched in India, which has been designated Nation physical fitness programme (NPEP 1959) national physical fitness test battery consisting of Non-Athletic items minimizing the requirements of facilities and equipments which are difficult to produce in rural areas where standardized with tables of norms for different age groups and sexes. Each state organizes testing programmes in various communities and selects those who merit one, two or three "star" awards. Each state/union territory is expected to recommend from among the three star winners. The names of the four top scores in each of the three categories of men 9seniors, juniors and sub- juniors). Thus only twenty four best candidates from each state/ union territory can participate in the competitions. Those who win the nation award are also eligible for scholarship of Rs.1200/- for one year in addition there are some special athletic events included in the N.P.E.P. for providing added incentive of all age groups.

Recognizing the facts the poor performance of Indian national teams at the International level is essential due to poor standard of physical fitness. The NethajiSubhash national Institute of sports which has responsibility of preparing national teams in cooperation with various federation has adopted the methods of association experts in their coaching schemes. A system of monitoring the physical fitness of national level players on the criteria of norms in a physical fitness test battery is also formulated.



Though it is virtually impossible to obtain complete conscience of opinion with regard to the understanding of physical fitness attempts were made by some physical educationists to find out the physical fitness differences between individuals as well as between different teams sports, and also the relationship between physical growth and scholastic achievement. Some of these studies revealed the difference between individuals engaged in the same activity and also the relationship between physical fitness achievements.

It is generally believed that the game players possess a high level physical fitness but it becomes difficult to determine which particular game requires what amount of different components of physical fitness. In this view the investigation has attempted to examine the motor fitness differences between hand ball players and foot ball players of Kadapa who have participated in school games federation of India tournaments. The present investigation is intended to explore on the "differences in variables motor fitness between handball and football players at school level".

**Hypothesis:** It was hypothesized that there would be a significant difference in speed, strength, endurance, agility and balance performance between football and handball players.

#### **Delimitations**

1. The present study was delimited to school boys who represented kadapa and Kurnool district school games federation of India, state level competitions.
2. The investigation was delimited to football and handball only.
3. The age of the subjects was 14 to 16 years.
4. For the purpose of the study 30 football and 30 handball players were selected from different schools in Kadapa and Kurnool districts in Andhra Pradesh.
5. The variables tested were speed, cardio vascular endurance, strength endurance, agility and balance.

#### **Limitations**

The study was limited in the following factors.

1. Heredity, day to day activities, rest period, food habits, life style and family factors could not be controlled.
2. The general mood of the subjects while have affected the performance and was recognized as a limitation.
3. All efforts made by the research scholar to motivate the students to put up their optimal performances in various test items. But there were no objective measures available to make sure that each performed their optimum. It was assumed that these limitations would not have significant effect on the result of the study as such variations normally has a nullifying effect.

#### **Definition of the terms**

**Physical fitness:** "fitness is a capacity of the individual to live and function effectively, purposefully and zestfully have and now and to meet confidentially the problems and crises which are among life's expectations", Karpovich defines physical fitness as "A fitness to persons some specified task requiring muscular effort"

**Motor fitness:** Motor fitness is defined by the Clarke as the ability to carry out daily task with vigor and alertness, without undue fatigue and ample energy to enjoy leisure time pursuit and to meet unusual situation and unforeseen emergencies. It is defined as the ability to perform fundamental motor skills involving physical fitness traits such as power, agility, speed and balance.

**Motor performance:** Motor performance can be defined as the capacity to perform Motor Skills such as speed, endurance and strength in an efficient manner.

Motor performance qualities makes up the majority of the motor performance test pattern include speed, power, agility, reaction time, hand eye, coordination and balance.

**Speed:** It is the ability to perform a particular movement very rapidly it is the function of distance on time.

Speed is defined as "The capacity of individual to perform successive movements of the same pattern at a faster rate".

**Cardio-vascular Endurance:** Cardio-vascular Endurance is the ability of the heart, lungs and circulatory system to supply oxygen and nutrients to work muscles efficiently.



Cardio vascular endurance is defined "As the capacity to persist in strenuous tasks for some length of time.

**Strength Endurances:** Strength endurance is defined as "The force that a muscle or a group of muscle can exert against a resistance for a prolonged period.

Strength is defined as the capacity to exert force or the ability to do work against resistance. Muscular endurance is the ability of the muscle to carry out the work for longer duration.

**Agility:** Agility is the ability to move quickly and change directions while maintaining control and balance. Agility is a combination of speed, balance, power and co-ordination.

**Balance:** balances the ability to maintain a position. Balance depend on the interaction of multiple body organs and systems including the eyes, ears, brain and nervous system, cardiovascular system, and muscles. Tests or examination of any or all of these organs or systems may be necessary to determine the cause of loss of balance, dizziness, or the inability to coordinate movement or activities.

## CONCLUSION

A knowledge of growth patterns and motor performance at different age levels form individuals to indicate and the influences of environment and habitation will facilitate a basis for understanding the individuals growth and motor performance.

More over in our country trained physical education teachers are not appointed in every school. Therefore, it becomes very difficult for the general teachers who do have adequate knowledge in the field of Physical education to plan scientific programmes according to the needs of the individual. Proper activities which suitable to the age level are essential for the proper development thus the present study will be significant in the following ways.

- 1.The result of the study will be helpful to compare the motor fitness components of players of different disciplines.
- 2.The findings of the study will add to the quantity of knowledge in physical education especially in the area of motor fitness.
- 3.It may be helpful for physical education teacher and coaches in various sports to find the best talents for the future prospects.
- 4.The result of the study would provide an additional knowledge in the area of research.
- 5.The same study may be considered for high school girls as well as for different age groups.
- 6.The result of the study will bring to light whether the motor fitness components are necessary or not.
- 7.This may be used as a literature in the field of physical education.
- 8.This study may motivate the budding investigator to take up further study related to this.

Sport is an activity that is governed by a set of rules or customs and often engaged in competitively. Sports commonly refer to activities where the physical capabilities of the competitor are the sole or primary determiner of the outcome [winning or losing], but the term is also used to include activities such as individual sports and motor sports where mental acuity or equipment quality are major factors. Sports are used as entertainment for the player and the viewer. It has also been proven by experiments that daily exercise increases mental strength and power to study. Today, unfortunately, fewer and fewer students are experiencing that feeling. Many states have drastically reduced or, in some cases, even dropped Physical Education requirements for high school students. And, in some of those states where Physical Education has been de-emphasized, fitness test results show an alarming rate of failure.



## PHYSICAL, PHYSIOLOGICAL AND PSYCHOLOGICAL FITNESS AMONG MIDDLE AGED MEN

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### ABSTRACT

The aim of the present study was to examine the relationship between the perceived work ability and health-related quality of life and to investigate their associations with psychological fitness, physiological fitness and physical fitness in middle-aged men.

The subjects in the studies were middle-aged men working in armed reserve police Vijayawada. The methods included questionnaires and physical activity. Different test modes were compared in order to assess the association of fitness test results with the perceived work ability.

In the study the physical fitness was assessed by a 50m sprint race test, the Walk test and muscular performance tests (sit-ups, push-ups and pull-ups). Despite this physiological tests (systolic and diastolic blood pressure) and psychological tests (Rainer Marten's Sports Competition Anxiety Test Questionnaire, Smith's Aggression Test Questionnaire and Everly & Girdandos Psychological Stress test questionnaire) were conducted.

These studies indicate that perceived work ability and Psychological fitness are significantly and positively associated with each other and that physical and physiological fitness may be contributing factors for both work ability and quality of life.

### INTRODUCTION

Middle age is the period of age beyond young adulthood but before the onset of old age. Various attempts have been made to define this age which is around the third quarter of the average life span of human beings. According to Collins Dictionary, this is "... usually considered to occur approximately between the ages of 40 and 60". The Oxford English Dictionary gives a similar definition but with a later start point "... the period between early adulthood and old age, usually considered as the years from about 45 to 65".

The UK Census lists middle age as including both the age categories 35 to 44 and 45 to 50, while prominent social scientist, Erik Erikson, sees it ending a little later and defines middle adulthood as between 40 and 65.

Middle-aged adults often show visible signs of aging such as loss of skin elasticity and graying of the hair. Physical fitness usually wanes, with a 5–10 kg accumulation of body fat, reduction in aerobic performance and a decrease in maximal heart rate. Strength and flexibility also decrease throughout middle age. However, people age at different rates and there can be significant differences between individuals of the same age.

There is a compelling need for clear and concise information on men's fitness and health. Yet most magazines and websites on the subject offer disjointed bits of information that fail to provide a clear path to men's health and fitness. They often make extravagant claims based on fad, hype, mythology, or commercial considerations in order to entice readership and sell products and services. They typically tout the latest and greatest methods for quickly and easily building muscles, stripping off fat, enhancing fitness, reducing stress, getting rich, and, of course, seducing women and keeping them coming back. To convince you of their authenticity, photos of slim, muscular, sexy young men with 6-pack abs are featured prominently.

## PERCEPTIONS OF YOGA EDUCATION AMONG SECONDARY SCHOOLS' TEACHERS

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### INTRODUCTION

International Yoga day; The June 21st only declared as International Yoga Day because the Sun enters primarily in to the Southern hemisphere as Sun gives us biological energy. So that Yoga takes us from inactive, foolishness to active, wisdom.

This is the only reason that our Nation proposed the June, 21st as International Yoga Day and its official declaration was given on 11th December, 2014.

Yoga refers to traditional physical and mental disciplines that originated in India. The world is associated with meditative practices in Hinduism, Buddhism and Jainism. Within Hinduism it also refers to one of the six orthodox schools of Hindu philosophy and to the goal towards which that school directs its practices. In Jainism Yoga is the sum total of all activities – mental, verbal and physical.

The people who lives in big cities have no time to think of the noise, they are conditioned by it and accustomed to it noise, stress and strain have done much damage by way of ailments- heart diseases, cancer, Ulcers, Nervous tension and insomnia. Many of our illnesses are caused by anxiety, nervous, tension, economic distress and emotional unrest all products of modern life. Man becomes easily irritated and is quick to find fault and pick a quarrel. He becomes morbidly introspective and experiences aches and pains and suffers from hypertension and sleeplessness.

In this present day everyone is undergoing stress of restlessness in day to day life. Along with stress health problems mental health problems, emotional adjustment problems are existing. So, in order to save people from all these crisis a silent, meditation is needed which is named as Yoga. We can bring awareness in society (by bringing) about personality development which help the individual to be a well being in the society.

### Definitions:

According to Patanjali

"Interpreted Yoga to mean the act of fixing or concentrating the mind in abstract meditation."

According to Oxford Dictionary:

"A Hindu system of Philosophic meditation and asceticism designed to effect the reunion of the devoted soul with the Universal sound."

According to Lord Sri Krishna:

In the Gita defines Yoga as a way by which a person can discharge his duties efficiently, with mental equilibrium and body poise.

According to the sage:

"Vyasa yoga is essentially, a meditative transc."

History of Yoga:

Who the first yogi really was is lost in the sands of time, but the roots of yoga can be traced as long as 5000 years back. The earliest reference to yoga was found when archeological Excavations were made in the Indus Valley the most powerful and influential civilization in the early antique period. This sophisticated culture developed around the Indus river and the long gone Saraswathi river in northern India, on the border towards Pakistan, Archeological findings from two of the largest cities, Mohenjo-Daro and Harappa revealed (among other things) a Portrait of a human being or god meditating in what looks like a yoga



posture. The Rig-Veda work that describes different yoga methods, is believed to be derived from the Indus Saraswathi people and has been dated to 3000 to 5000B.C.

Yoga Practices in other traditions :

## **Buddhism:**

Early Buddhism incorporated meditative absorption states. The most ancient sustained expression of yogic ideas is found in the early sermons of the Buddha. One of his innovative teachings of the Buddha was that meditative absorption must be combined with liberating cognition. The difference between the Buddha's teaching and the yoga presented in early Brahminic texts is striking.

## **Jainism:**

Yoga, is the sum total of all the activities of mind, speech and body. The five yamas or the constraints of the yoga sutras of Patanjali bear an uncanny resemblance to the five major vows of Jainism, indicating a strong influence of Jainism.

Islam :

The development of Sufism was considerably influenced by Indian Yogic practices, where they adapted both physical postures (asanas) and breath control (pranayama). Several other yogic texts were appropriated by Sufi tradition, but typically the texts juxtapose yoga material alongside Sufi practices without any real attempt at integration or synthesis.

## **Christianity:**

The Roman Catholic Church and some other Christian organizations have expressed concerns and disapproval with respect to some Eastern and New Age practices that include yoga and meditation.

The Rev John Wijngaards points out the long Judaic and Christian histories of absorbing elements from surrounding religions. He notes that the absence of any intense experience of God's power has sent some Christians eastward. Many Roman Catholics have brought elements of yoga, Buddhism, and Hinduism into their spiritual practices.

## **Yogasanas**

Once we start the yoga practice their influence will soon become apparent in our everyday life. We will begin to enjoy better health, sounder sleep, a keener mind and a more cheerful disposition. Our body will gradually acquire a pleasant lightness and suppleness, our mind will become more calm and our tensions diminish. We will also notice an improvement in our figure, posture, vision and general appearance, for we will start looking younger and feeling more alive. Its secret lies in the fact that it deals with the entire man not just with one of its aspects. It gives us the key of youth, health and long life, and helps us to find harmony, peace of mind and true happiness. It is high time for us to try this age-old method and test its effectiveness for physical well-being, mental and spiritual advancement.

## **Some important yogasanas:**

What is Sarvangasana

In Sanskrit, Sarva means the whole and Anga means body or limb or part. Thus Sarvangasana means the whole body or all the limbs and Sarvangasana refers to the pose that benefits the whole body. It is one of the inverted poses of yoga that is also known as Shoulder Stand as the body is balanced on the shoulders in a final position of the asana. This asana is sometimes called a "candle" also because the body resembles a candle in this pose.

Bhujangasana

What is Bhujangasana?

Bhujangasana, known as the Cobra pose, is one of the standard poses in the Surya Namaskar (Sun Salutation) sequence. The term has been coined from Sanskrit words: bhujanga means cobra or snake and asana means pose. It is a hatha yoga position which strengthens the spine; stretches the chest and lungs, shoulders, and abdomen; firms the buttocks; stimulates abdominal organs; helps relieve stress and fatigue; opens the heart and lungs.





MatsyaWhat is matsyasana yoga?

Fish yoga pose or Matsyasana is a counter pose to Shoulder Stand Pose. The pose extends your chest, reduces nasal congestion and sinus problems. It stimulates Thyroid and Parathyroid glands as well.

Karnapidasana

Lie down on the floor in the supine position, breathe in, bend the knees and lift the legs up and over the torso on the out breath, while supporting the back with both hands. Place the knees between the head and stretch the arms down. Keep the shoulders down and relaxed.

You can also start this posture from a shoulder stand position by just bringing the legs down and positioning the knees between the head, bring the arms down behind you or keep them supporting the back.

Salamba Sirsasana

What is Salamba Sirsasana?

In Sanskrit salamba means supported and sirsa means head thus Salmba sirsasana means supported headstand pose. It is an extremely powerful asana that is referred as King of the Asana due to the overall effects it imposes on the whole body.

## **NEED OF THE STUDY:**

In this present day every one is undergoing stress of restlessness in day to day life. Along with stress health problems mental health problems, emotional adjustment problems are existin. So, in order to save people from all these crisis a silent, meditation is needed which is named as Yoga. We can bring awareness in society (by bringing) about personality development which help the individual to be a well being in the society.

Yoga represents a unique of the physical, mental and spiritual faculties of man. Man could hold communion with God only with the cooperative function of the above faculties in a back ground of utmost personal purity and devotion to the living creatures of the earth.

Yoga exercises can only help to remove impurities and obstructions. So that nature may be given a chance to accomplish her task successfully. Yoga is able to influence man physically, mentally, morally and spiritually. Yoga emphasizes the philosophy of exercises. Under its training, one experiences a sense of awakening, all of one" capacities are heightened and one achieves balances and stamina through these exercise. In yoga relaxation is tough as an art, breathing as a science, and mental control of the body as a means harmonizing the body, mind and spirit. One has to know the importance of Yoga from their childhood. So teachers are roots to education system they must need yoga education in present day life. So the researcher take the perceptions of teachers among secondary school teachers research study also found a lot of difference who practice and who don't practice Yoga.

## **OPERATIONAL DEFINITIONS OF KEY TERMS:**

Yoga : A Hindu spiritual and ascetic discipline, a part of which, including breath control, simple meditation, and the adoption of specific bodily postures, is widely practised for health and relaxation.

Teachers : A person who teaches, especially in a school.

## **OBJECTIVES OF THE STUDY :**

- 1.To study the perceptions of yoga education among secondary school teachers
- 2.To study the perceptions of yoga education among with respect to

Gender : Male / female

Locality : Rural/ Urban

Teaching Experience : Above 10 years /Below 10 years

## **HYPOTHESES OF THE STUDY :**

- 1.There is no significant difference in the perceptions of yoga education among secondary school teachers with respect to gender
- 2.There is no significant difference in the perceptions of yoga education among secondary school teachers with respect to Locality.





3. There is no significant difference in the perceptions of yoga education among secondary school teachers with respect to Teaching Experience

## **VARIABLES OF THE STUDY :**

The following are the variable of the present study on which the hypothesis will be tested .

### **Independent variables:**

- Gender : Male / Female
- Type of institution : Govt / Private
- Teaching Experience : Above 10 Years/ Below 10 years

### **Dependent variable:**

- Yoga Education

## **SCOPE AND DELIMITATIONS OF THE STUDY:**

- The study is limited to 100 secondary school teachers in Guntur district only.

## **METHOD OF INVESTIGATION**

On the present study follows the normative survey method is used.

## **PLAN AND PROCEDURE OF THE DATA :**

The present study aims at gathering the opinions of large number of sample. In this study the problem is clearly defined and had definite objectives. The data gathered in this study has undergone careful analysis and interpretation and logical and skillful reporting of the findings were done.

## **SAMPLE AND SAMPLING :**

A random sample of 100 secondary school teachers in Guntur District only.

## **CONSTRUCTION AND DESCRIPTION OF THE TOOL:**

A questionnaire is prepared by the investigator with the help of research supervisor. 40 items of a closed ended questionnaire is prepared by the investigator.

## **VALIDITY OF THE TOOL:**

From the response of the respondents the content validity of the of yoga education among secondary school teachers questionnaire will be established. The high reliability of the questionnaire indicate that the questionnaire will be valid.

The selected items gather the opinions from the secondary school teachers of rural and urban, male and female teachers were given to test the context validity.

## **ADMINISTRATION OF THE TOOL AND THE COLLECTION OF DATA:**

The researcher took prior permission from the heads of the institution for data collection. The researcher went to the institution in the given dates. The questionnaire were distributed among the boy and girl students were given the instruction to fill the questionnaire. The filled in questionnaire were collected.

## **Scoring Criteria:**

The scoring criteria for the two alternates response Yes or No

For Yes is 1 Mark.

For No is 0 Mark

## **STATISTICAL TECHNIQUES USED:**

The pupils selected from the experiment were heterogeneous but they are homogeneous that the performance. Therefore this threat was mitigated S.D, Mean and % of mean are to be calculated. To find out they 't' values are computed.

Data Analyses and Interpretation

Objective – 1 : To study the perceptions of yoga education among secondary school teachers



Table 1: Yoga Education among secondary school teachers

Sample	Mean	S.D.	% of mean
100	34.78	5.58	67.18

## VARIABLE WISE ANALYSIS:

TABLE – 2 , Comparison of variable wise analysis					
Gender	Sample size	Mean	S.D.	S.Ed	't' value
Boy	50	32.18	5.46	0.76	1.65NS
Girl	50	30.92	5.31		
Rural	50	33.71	5.10	0.72	3.08*
Urban	50	31.49	5.21		
Above 10 years	50	32.81	5.38	0.78	1.05NS
Below 10 Years	50	31.99	5.87		

NS= Not significant at 0.05 level

\* = Significant at 0.05 level

## Finding:

- The above table whole sample mean is 34.78,% of mean is 67.18 and their SD is 5.58 respectively. From the above table the mean scores of yoga education of secondary school teachers is high.
- There is no significant difference between male and female teachers. Hence the null hypothesis is accepted.
- There is significant difference between rural and urban school teachers. Hence the null hypothesis is rejected.
- There is no significant difference between above 10 years and below 10 years teaching experience of secondary school teachers. Hence the null hypothesis is accepted.

## Educational Implications

- Teachers should develop yoga centers in school compound.
- Teachers should be change time table and compulsory yoga education at least weekly one period.
- Knowledge about yoga education both for teachers and learners and it will play an important role in teaching-learning process. Evening yoga practice for school children.
- Teacher should become aware of yoga education.
- It is possible that the increasing awareness of stressors in itself increased stress, possibly as part of the process of developing mindfulness or related to cognitive, emotional, or social development.

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## YOGA FOR CHILDREN AND YOUNG PEOPLE'S MENTAL HEALTH AND WELL-BEING

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### Abstract

"To keep the body in Good health is a duty otherwise we shall not be able to keep our mind strong and clear"  
-Buddha.

Yoga is assuming importance in improving mental health and quality of life, it provides training of mind and body to bring emotional balance. This article discusses yoga as a potential tool for children to deal with stress and regulate themselves. Yoga may assist them in developing in sound ways, to strengthen themselves, and be contributing social beings. Children and young people in today's world face numerous expectations and constant stimulation through the Internet and other media and communication technologies. Modern society offers plenty of distractions and unwelcome attractions, especially linked to new media technologies. While these media technologies are valuable resources in children and young people's lives for communication, learning, and entertainment, they also result in constant competition for youngster's attention. A main concept in this article is that yoga may help children and young people cope with stress and thus, contribute positively to balance in life, well-being, and mental health. yoga in schools helps students improve resilience, mood, and self-regulation skills pertaining to emotions and stress.

### Introduction

Globalization exposes children and young people all over the world to various new standards and options. Different institutions in children and adolescents' lives, such as family, school, and the media, constantly provide stimulation as well as expectations. This exposure to new expectations and demands has the potential to create stress in young people's lives, especially related to evaluation of their performances. The most stressed-out generation is the current young adults - an average stress level of 5.4 out of 10 were 18-33 years old.

It is common knowledge that stress can have serious health consequences. If unaddressed consistently, high stress level could result in a range of health problems, including anxiety, insomnia, muscle pain, high blood pressure, and a weakened immune system. Stress can even contribute to the development of major illnesses such as heart disease, depression, and obesity or exacerbate existing health issues.

Children are quite good at hiding their distress and emotional stress from their parents, since they do not want their parents to worry on their account. They desire to please their parents by their "appropriate" and "socially right" behaviours. Children function as an agency for their own well-being and have the evolving capacity to be partners of wellness with their families, friends, and society. This article discusses yoga as a potential tool for the youth to deal with mental health and to regulate themselves.

### Meaning of Yoga

Yoga is an ancient Indian practice, which has been spread all over the world, and is even being revitalized in India itself. Yoga represents a body of practices with an ancient history originally derived from India about 5,000 years ago. In Sanskrit, the word yoga derives from "yug" meaning to yoke, to unite, referring to the discipline of aligning the mind and body for spiritual goals. It is an ancient form of exercise that focuses on strength, flexibility and breathing to boost physical and mental wellbeing. The main components of yoga are

postures and breathing. Yoga has also been practiced for potential health benefits, with increasing attention in popular culture to prevent illness and treat disease.

## Definition Yoga

"Yoga is a practical aid, not a religion. Yoga is an ancient art based on a harmonizing system of development for the body, mind, and spirit." The definition of yoga encompasses a variety of practices which may include postures (asanas), breathing exercises (pranayama), meditation, mantras, lifestyle changes (e.g., diet, sleep, hygiene), spiritual beliefs, and/or rituals. Different yoga styles utilize and/or emphasize different practices reflecting the varied practice of yoga in India and the World.

Patanjali's writing also became the basis for a system referred to as "Ashtanga Yoga." This eight-limbed concept is derived from the 29th Sutra of the Book 2 of Yoga Sutras. They are:

- 1) Yama (The five "abstentions"): Ahimsa (Non-harming other living beings), Satya (truthfulness), Asteya (non-stealing), Brahmacharya (celibacy, fidelity to one's partner), and Aparigraha (non-avarice).
- 2) Niyama (The five "observances"): Śauca (purity, clearness of mind, speech and body), Santosha (contentment, acceptance of others and of one's circumstances), Tapas (persistent meditation, perseverance, austerity), Svādhyāya (study of self, self-reflection, study of Vedas), and Ishvara-Pranidhana (contemplation of God/True Self).
- 3) Asana: Literally means "seat", and in Patanjali's Sutras refers to the seated position used for meditation.
- 4) Pranayama ("Suspending Breath"): Prāna, breath, "āyāma", to restrain or stop. Also interpreted as control of the life force.
- 5) Pratyahara ("Abstraction"): Withdrawal of the sense organs from external objects.
- 6) Dharana ("Concentration"): Fixing the attention on a single object.
- 7) Dhyana ("Meditation"): Intense contemplation of the nature of the object of meditation.
- 8) Samadhi ("Liberation"): Merging consciousness with the object of meditation.

Yoga typically means 'union' between the mind, body and spirit. It create a balance between the body and the mind and to attain self-enlightenment. In order to accomplish it, Yoga makes use of different movements, breathing exercises, relaxation technique and meditation. Yoga is associated with a healthy and lively lifestyle with a balanced approach to life.

## Six Branches of Yoga

### 1) Hatha Yoga or Yoga of Postures

Hatha Yoga is the path most popular in the West. This branch of Yoga uses physical poses or Asana, Dharana, Pranayama, Pratyahara, and Meditation to achieve better health, as well as spirituality. These steps of hatha yoga prepare the student for peaceful mind and a healthy body and the five internal practices of Raja yoga. There are many styles within this path - Iyengar, Integral, Astanga, Kripalu, and Jiva Mukti etc.

### 2) Bhakti Yoga or Yoga of Devotion

Bhakti Yoga is the path most followed in India. This is the path of the heart and devotion. This Yoga teaches a person to have devotion to the "One" or to Brahma by developing a person's love and acceptance for all things.

### 3) Raja Yoga or Yoga of Self-Control

Raja means "royal". This path is considered to be the 'King of Yoga' and this yoga is based on the teachings of the eight limbs of yoga found in the Yoga sutras (Patanjali). If we wish to learn discipline, then Raja Yoga would perfectly suit that need.

### 4) Gnana Yoga or Yoga of the Mind

Gnana Yoga is the path of Yoga that basically deals with the mind, and focuses on man's intelligence. Gnana Yogis wish to gain knowledge, they are open to other philosophies and religion for they believe that an open and rational mind is crucial in knowing the spirit.



## 5) Karma Yoga or Yoga of Service

Karma Yoga is the path of service for in this path, it is believed that our present situation is based on our past actions. Karma Yogis change their attitude towards the good and in the process, change their souls, which leads to a change in their destiny.

## 6) Tantra Yoga or Yoga of Rituals

Tantra Yoga is about using rituals to experience what is sacred. This path aims to find what is sacred in everything we do. Tantra Yogis must possess certain qualities like purity, humility, devotion, dedication to his Guru, comic love, and truthfulness among other things.

The increased global interest in yoga in recent decades is primarily due to the expectancy that yoga can calm the mind and increase overall health and well-being. Children's mental health and well-being include developing healthy relationships with peers and teachers, and being able to self-regulate emotionally, mentally, and behaviorally.

What is a deep state of physiological relaxation? It is a change in calm and relaxation that takes place on a neurobiological level. It takes a certain amount of brain and body stimulation to laugh, animatedly move our faces and bodies, and to listen and respond effectively to social cues. So, you see, even socializing, playing an enjoyable game of tennis or golf, or shopping with a friend is actually a state of biochemical tension. For the body to relax we need to alter body processes that shift us biochemically from a state of excitement and tension to a state of calm, deep rest and relaxation. Only deep breathing that accompanies mind-body practices like yoga can do this.

### The Physiology of Yoga

Yoga practice changes the firing patterns of the nerves and chemical makeup of the body's fluids and blood gases that activates a relaxation response. Relaxing yourself deeply into a yoga pose through deep breathing lowers the brain's response to threat. The body starts to turn off arousing nerve chemicals, like adrenaline and stops dumping fatty acids and sugar into the blood stream for brain, muscle and motor energy. Also, sodium leaves the inside of the body's cells. This slows down the rate of nerve firing and further relaxes the brain, heart and muscles. This state of biochemical relaxation oxygenates the blood, restores blood acidity and alkalinity balance, and reduces heart rate, blood pressure, and motor activity. Yoga postures work on all systems of the body. Besides strengthening and elongating muscles, yoga postures tone up glands, internal organs, and spine nerves. Additionally, increased blood flow helps the digestive system to better extract nutrients from the foods you eat and the lymphatic system to eliminate toxins from the body.

### Yoga: To Join and Unite

Yoga practice improves quality of life. We learn to note differences between tense and calm body processes so that we can implement a change through yoga postures and deep breathing. But, the practice of yoga over time also has psychological and spiritual benefits. The practice of yoga brings you to the awareness that there is a relationship between two ends of one phenomenon. You are body and mind. There is never a point in which you are just one or the other. Too, you are ego and spirit, tension and relaxation, pain and ease, balance and unsteadiness, love and hate, and separated and united.

### Children, Young People, and Mental Health

A greater number of youth are diagnosed with conditions such as Attention Deficit Hyperactivity Disorder (ADHD). There are more psychological problems among young people; many worry excessively, have sleep problems, and experience hopelessness and stress. In fact, mental health problems are common among children and young people in the world. Majority of adolescents worldwide are healthy, 20% experience mental health issues. 15–20% of children aged 3–18 years have reduced functioning abilities due to mental problems such as anxiety, depression, and behavioral disorders. Generally, psychological challenges intensify around puberty; due to psychological and biological changes. When growing up, children face pressures from family, school, and other social contexts to perform satisfactorily and adjust to the rapidly changing pace of development in society.



The current scenario is challenging for both teachers and parents, as well as for children, to foster a positive mental health status. The pressure on young people also varies, encompassing academic, commercial/marketing, succeeding in school, being popular, having a fit or slim body, and owning the latest technological gadgets, etc. This set of expectations creates stress, which impacts children and young people's mental health and well-being, as well as hampers their school performance.

Children also suffer from bullying (at school and cyber bullying), behavioural issues, problems with attention and self-regulation, sleep disorders, obesity, computer dependency, drug abuse, and lack of school motivation, even leading to dropouts. Furthermore, schools are faced with the challenge that students (especially boys) are more attracted to the Internet, social media, and gaming than the school curriculum.

#### Children and Young People's Media Use and Health Challenges

Modern society also offers innumerable distractions and undesired attractions, especially linked to modern media and communication technologies, on which we have become dependent. The massive presence of media and the time spent on media technologies by children are clear indicators of the shift in lifestyles and priorities of our new generation. Children worldwide are spending more and more time in front of television sets or computer screens and on cell phones, making media a central part of their lives. Advertising, communications, as well as education present a brand new social networking image to make media accessible to children.

Although media is a knowledge resource for children and adolescents' mental health, its intense use leads to questions concerning young people's capacity and interest to bring balance between physical and mental activities. Children (0-6 years) spend as much time with electronic gadgets as they do playing outside. Media as a factor of mental illness, dependency, obsessive-compulsive behaviours, concentration problems, and other attention disorders. The world at large, including the deviances of society, is much closer and easily accessible with media tools and technologies.

#### Yoga and Health - Yoga for Mental Health

Mental health refers to the overall well-being of an individual. It is about the balance of the social, physical, spiritual and emotional aspects of life. Mental Health is characterized by the personal growth, sense of purpose, self-acceptance, and positive relationship with other people. It is also highly affected by environmental factors like our family life, social life, and life at work. Our general well-being is decreased by any negative experiences in any of these areas. Among the most common Mental Illnesses or Mental Disorders are Anxiety and Depression. Yoga can be beneficial in achieving balance in our Mental Health. Yoga Practice can also help relieve irregularities in the brain and the entire Nervous System.

#### Yoga in Children's Lives

"Yoga is a powerful medium for developing the personality of children and making them capable of facing the present-day challenges and problems." Yoga improves children's physical and mental well-being. Yoga in schools helps students development, increase their well-being, reduce everyday stress, facilitate weight management, improve resilience, mood, and self-regulation skills, attention, concentration, self-awareness, consciousness, behavioral and emotional maturity, and self-confidence in everyday life. Yoga can be an appropriate scientific intervention in childhood and youth as a stress alleviator, especially in the school setting. Yoga has worked as an adjunct to medical treatment of mental illness with positive effects. Thus, yoga is an important life skill tool for children and young people to cope with stress and self-regulation in a life-long perspective.

Yoga may have potential to be implemented as a beneficial supportive/adjunct treatment that is relatively cost-effective, may be practiced at least in part as self-care behavioral treatment, provides a life-long behavioral skill, enhances self-efficacy and self-confidence and is often associated with additional positive side effects.





## Potential Benefits of Practicing Yoga for Children and Youth

"The beauty of yoga is that its benefits are available to students of every school-age group," Yoga can help foster motivation, cultivate internal locus of control, and encourage healthy and balanced living. Yoga improves academic performance and emotional balance. Yoga is also reduce anxiety in young people as well as in seniors. Yoga practice and meditation may be helpful in prevention of dementia (a general term for loss of memory and other intellectual abilities serious enough to interfere with daily life) in several ways. Yoga can reduce stress hormones and inflammatory factors, and teach an individual over time how to cope more effectively and protect the body from going through the stress response. Thus, yoga may assist healthy development and life-long learning. A number of studies have also suggested that yoga can assist children with special needs.

1) Yoga improves our psychological/mental well-being.

Yoga involves concentration on the breath and body, which makes it a great way to soothe a person's mind and relieve worries. By helping discharge tension and stress, yoga poses and breathing exercises keep a person free from such negative elements.

2) Yoga helps with anxiety and depression.

Consisting of activities such as relaxation, meditation, socialization, and exercise, yoga has been proven helpful in reducing our anxiety and depression. Yoga resolve anxiety and depression without resorting to expensive medications.

3) Yoga boosts memory and improves concentration.

Yoga has been proven effective at improving memory and concentration. For instance, Dharana, otherwise known as the practice of concentration, is the perfect way to clear our mind and calm our senses. As we remove the static noise in our head and focus on our mind, we'll find that we're able to remember things, concentrate, and perform much better.

4) Yoga prevents the onset of mental health conditions, which are prevalent during adolescence.

Yoga, has been seen as a helpful method that can be used to protect adolescents from mental illnesses. Kripalu Yoga involves physical postures, breathing, relaxation, and meditation. These are just some of the many factors that are important in the prevention of psychological conditions in teenagers.

5) Yoga Reduces the Effects of Traumatic Experiences.

While some mental treatments can address the underlying factors of PTSD. Hatha Yoga has been shown to be effective in reducing PTSD symptoms, according to the American Psychological Association. As such, Yoga might just be a great counterattack against the ravages of traumatic experiences.

The information on Yoga Poses & Benefits are grouped into three categories-Physiological, Psychological, Biochemical effects, and benefits of regular Exercise.

### Physiological Benefits of Yoga

- Stable autonomic nervous system (ANS) with tendency towards PNS dominance.
- Blood Pressure decreases (of special significance for hyporeactors)
- Pulse rate and Respiratory rate decreases
- EMG activity decreases
- EEG - alpha waves increase (theta, delta, and beta waves also increase during various stages of meditation)
- Cardiovascular efficiency increases
- Musculoskeletal flexibility and joint range of motion increase
- Galvanic Skin Response (GSR) increases
- Respiratory efficiency and Breath-holding time increases
- Joint range of motion increase
- Eye-hand coordination improves
- Gastrointestinal function and Endocrine function normalizes
- Dexterity skills and Reaction time improves





- Posture and Depth Perception improves
- Endurance increase
- Energy level increases
- Excretory functions improve
- Sleep improves
- Grip strength increases
- Strength and Resiliency
- Steadiness and Balance improves
- Immunity increases
- Integrated functioning of body parts improves

#### Psychological Benefits of Yoga

- Somatic and kinesthetic awareness increase
- Mood improves and subjective well-being increases
- Self-acceptance and self-actualization increase
- Social adjustment skills increases
- Anxiety and Depression decrease
- Hostility and decreases
- Concentration and Attention improves
- Memory and Learning efficiency improves
- Depth perception and Symbol coding improves
- Symptoms of Schizophrenia disorders improves
- Flicker fusion frequency improves

#### Biochemical Benefits of Yoga

- Glucose and Sodium decreases
- Total cholesterol and Triglycerides decrease
- LDL cholesterol and VLDL cholesterol decreases
- HDL cholesterol increases
- Cholinesterase increases
- Catecholamines decrease
- ATPase and Hematocrit increases
- Hemoglobin and Lymphocyte count increases
- Total white blood cell count decreases
- Thyroxin increases
- Gamma-amino butyric acid level increases (if it is low anxiety disorders raise)
- Vitamin C and Total serum protein increases

#### Yoga Health Benefits versus Exercise Benefits

- Yoga Benefits
- Parasympathetic Nervous System dominates
- Sub cortical regions of brain dominate
- Slow dynamic and static movements
- Normalization of muscle tone
- Low risk of injuring muscles and ligaments
- Low caloric consumption
- Effort is minimized, relaxed
- Balanced activity of opposing muscle groups



- Awareness is internal (focus is on breath and the infinite)
- Limitless possibilities for growth in self-awareness
- Exercise Benefits
- Sympathetic Nervous System dominates
- Cortical regions of brain dominate
- Rapid forceful movements
- Increased muscle tension
- Higher risk of injury
- Moderate to high caloric consumption
- Effort is maximized
- Fatiguing (breathing is taxed)
- Imbalance activity of opposing groups
- Competitive, goal-oriented
- Awareness is external (focus is on reaching the toes, reaching the finish line, etc.)

## Conclusion

In this article, we discuss some stressors to which children are exposed in their everyday lives in modern societies, including rising expectations and children's extensive media usage. Yoga improved quality of life, provided peace of mind and reduced depression, anxiety scores and psychological symptoms of stress related problems, illness and insomnia. Yoga is a holistic science and must be learnt and practiced with a holistic view. Yoga is often promoted as a universal good discipline, with philosophy and practice to achieve balance and human development. Moreover, yoga teaching needs to be serious and multi-disciplinary, yet based on children's needs and everyday lives, with a playful and fun approach. Yoga practices are beneficial for the mental and physical health of children and young people. The integration of Yoga and modern medicine can help create a healthier and happier world.

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## EFFECT OF 6 WEEKS AEROBIC DANCE TRAINING ON SELECTED RHEOLOGICAL PROPERTIES OF BLOOD AMONG INTER COLLEGIATE CRICKET PLAYERS

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### ABSTRACT

Sports performance strongly depends on the oxygen transportation capacity to supply exercising muscles. This capacity is associated with the erythrocyte values, which may thus be regularly assessed throughout the sports season (Fallon, 2004; Lesesve et al, 2000) to allow trainers and medical staff members to collect useful fitness and health related information on players. The aim of the study was to assess the effects of aerobic dance training on some selected rheological properties of blood in college cricket players. A group of eleven (N=11) male cricketers aged 18-24 years, who participated in the intercollegiate cricket competitions organized by Kakatiya University, Warangal were undergoing a cricket coaching camp were selected as subjects to the present study. Their mean height, weight and age were  $160.25 \pm 5.60$ cm,  $55.45 \pm 4.21$ kg,  $20 \pm 1.9$  years. All subjects having been informed about the objective of the study and voluntarily participated. Subjects were trained to perform aerobic activity for six (6) weeks which include training protocol of selected aerobic dance work outs. Blood samples were collected before and after performing continuous activity. Rheological variables like Red blood cell count (RBC), white blood cell count (WBC), haematocrit count (Hct), haemoglobin percentage(Hg), Mean Corpuscular value (MCV), Mean Corpuscular Haemoglobin (MCH), Mean Corpuscular Haemoglobin Concentration (MCHC) were determined manually. Two paired t-test for dependent data was used to assess the post and pre differences. Level of  $p \leq 0.05$  was considered significant. The results of the study showed that there is no change in the rheological properties of the subjects. The difference between pre and post exercise values are not significant. Therefore this training program may improve the physical fitness of the players without worrying about the immune and haematological systems disorders in the college cricketers.

**Keywords:** RBC deformability, leucocyte, RBC, WBC, Haematocrit, MCV, MCH, MCHC.



## COMPUTER SIMULATION MODELLING IN SPORTS BIOMECHANICS

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### ABSTRACT

Theoretical analysis using computer simulation is a powerful tool in sports biomechanics that helps understand the factors that limit optimal performance or factors that might affect loading on the body. In particular: two examples of whole body torque-driven forward dynamics computer simulation models of the takeoff phase in tumbling and springboard diving are used to investigate optimum performance; a model of one-handed backhand strokes in tennis to investigate loading at the elbow. Subject-specific parameters are determined for each model based upon experimental data on an elite athlete and the models are evaluated by comparing simulations with performances. Simulations and optimization's are then used to investigate specific questions for each activity.

**Keywords:** computer simulation, optimization, subject-specific, evaluation.

### INTRODUCTION

Theoretical approaches to answering a research question in sports biomechanics typically employ a simulation model that gives a simplified representation of the physical system under study. With the human body being very complex any simulation model is a simplification of reality, with the specific complexity of the simulation model dependent on the activity being simulated and the purpose of the study. The advantage of a theoretical approach is that an ideal experiment can be conducted with one variable altered at a time. Whole body forward dynamics computer simulation models can be used to gain an understanding of the factors that have the most influence on optimum performance. The ability to run thousands of simulations in a single day allows investigations into optimum performance by characterizing the technique used in a sports movement using a number of parameters and then optimizing to find the best set of parameter values that maximizes or minimizes a performance score. Typically a large number of parameters are required to characterize the technique used in a sports movement and this is often done using profiles which define the general shape of the activation time history for each actuator in the model. The parameters which define the shape of each profile are then varied using an optimization routine in order to determine optimum performance. The performance score that is optimized could simply be the distance thrown, the height jumped or the amount of rotation produced. Although using a simple performance score will find an optimum solution, it may not be a realistic optimum as the solution could be very sensitive to small variations in technique and therefore result in an inconsistent performance. This problem can be overcome by incorporating perturbations of the technique parameters within the optimization procedure.

### Methods

Subject-specific torque-driven computer simulation models were developed for the takeoff phase of tumbling and springboard diving along with a torque-driven simulation model of one-handed backhand groundstrokes in tennis. The equations of motion for the two jumping models of varying complexity were developed using the Autolev software package while the model of one handed backhand ground strokes was developed using MSC.ADAMS (MSC Software Corp, California, USA).

Computer simulation models of (a) the takeoff phase in tumbling, (b) the takeoff phase in springboard diving and (c) one handed backhand groundstrokes in tennis. Each simulation model was customized to an elite athlete based upon

measurements taken on the subject. Inertia parameters (segmental length, mass, mass centre location and moment of inertia) for each rigid segment were determined from 95 anthropometric measurements on each elite athlete using the inertia model of Yeadon (1990). Strength measurements on each elite athlete using an isovelocity dynamometer (King and Yeadon, 2002) were used to determine the maximum voluntary torque that could be produced at each joint as a function of angle and angular velocity. Visco-elastic parameters for the springboard model were determined from experimental tests on the springboard (Yeadon et al., 2006), visco-elastic parameters for the tumbling track / model interface and springboard / model interface were determined using an optimisation procedure (Yeadon and King, 2002; Yeadon et al., 2006) and racket, stringed and ball properties were determined from experimental tests on the equipment (Glynn, et al., 2011). Each simulation model was evaluated by comparing simulations to performances of each activity by an elite subject. The activation profiles corresponding to each torque generator were varied using the simulated annealing optimisation algorithm (Corana et al., 1987) in order to obtain the best match to the performance of each activity in terms of joint angle changes and mass centre velocity / whole body angular momentum at takeoff. The tumbling model was used to investigate how to maximise somersault rotation using technique changes during the final takeoff phase; the springboard diving model was used to maximise height and rotation from the 1 m springboard for forward dives and the tennis model was used to investigate under what conditions there are higher levels of eccentric contraction of the wrist extensors during one-handed tennis backhand ground strokes and potentially tennis elbow. With both jumping models the performance in flight was calculated using a simulation model for aerial motion (Yeadon et al., 1990) which used the linear and angular momentum at takeoff along with the configuration changes during flight as input.

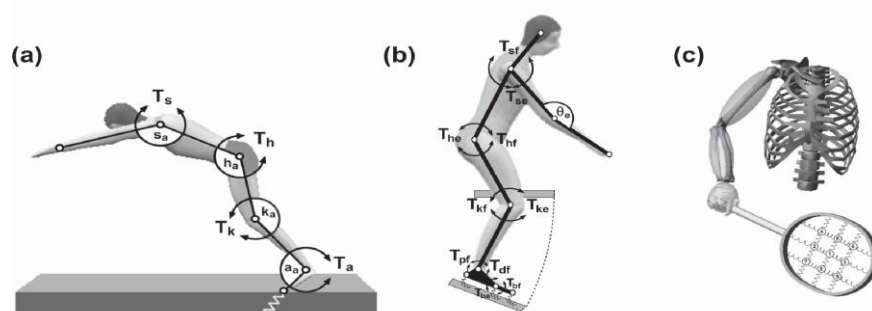


Figure: Performance and matching simulation of a double layout somersault.

## RESULTS

All three subject-specific simulation models were successfully evaluated with good agreement obtained between performance and simulation. This is an important step in the modeling process as without this the wrong results may be obtained in simulations. Optimizing performance using the tumbling model showed that producing a triple layout somersault was only possible if the model's initial horizontal velocity was increased by 50% to 7.0 m/s. However, this optimum triple layout somersault was very sensitive to the activation profiles used with a small change in the profile resulting in a substantial decrease in performance. When perturbations to the activation profiles were included within the optimisation process a new optimum was found which was robust to 50 ms perturbations of the activation profiles. Optimising the height reached during flight for a forward dive picked resulted in a realistic increase in dive height of 65 mm when compared with the elite divers performance. This small increase in dive height supports the model evaluation and suggests that the strength parameters used in the springboard diving model are about right. However when the model was optimised for rotation (with initial conditions for the elite divers maximal dive; a forward two and a half piked) the resulting simulation had sufficient rotation potential at takeoff (angular momentum at takeoff  $\times$  flight time) to give 63% more rotation during flight.

This increase in rotation was unrealistic and was due to the knee angle exceeding its anatomical range of motion at takeoff and during early flight (20° hyper extension at takeoff increasing to 50° during flight). As a

consequence a penalty function was incorporated within the optimisation routine to prevent simulations which exceeded anatomical ranges of motion. This resulted in a more realistic increase in rotation of 22% and demonstrated the dangers of using a simple performance score.

Simulations at the nine impact locations on the strig bed showed that the major kinematic change with respect to a centre impactsimulationwasobservedintheracketrotationaboutitslongitudinalaxis relative to the hand and the wrist flexion/extension angle.

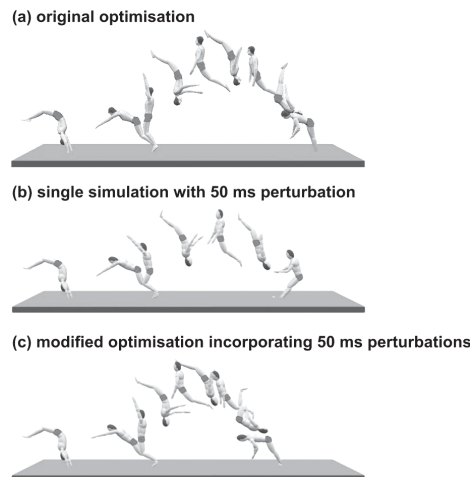


Figure2: Tumbling optimizations.

## CONCLUSION

The importance of developing a subject-specific computer simulation model which can be evaluated by comparing simulations with performances has been demonstrated. Optimising performance using a simple performance score may lead to unrealistic optimum solutions, as a consequence robustness to timing perturbations and anatomical constraints should be taken into account. Using a subject-specific simulation model allows an ideal experiment to be run with one variable being perturbed so that the effect of a specific variable can be established.

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## COMPUTER-BASED ASSESSMENT OF SPORTS

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### Abstract

Sports related concussion has received considerable attention from neuro psychologists, athletic trainers, team coaches, physicians, families, and athletes. In this context, researchers have recently developed computer programs for the assessment of sports-related concussion. Computer-based assessment of sports-related concussion saves time, allows for team base- line testing, and can be easily incorporated into the sports medicine environment. This reviews the advantages and limitations of computer-based assessment of sports-related concussion.

**Keywords:** sports-related concussion, mild traumaticbraininjury, neuropsychology, computerized neuropsychological assessment

### Introduction

Assessment of sports-related concussion has received increased attention over the past 2 decades. Over this period, neuropsychologists, athletic trainers, and other mental health professionals have attempted to understand and document the behavioral sequelae following cerebral concussions. Within this context, neuropsychological test batteries have been routinely used to determine the effects of cerebral concussion. Much effort has been dedicated to outlining the parameters of neurocognitive changes following sports-related concussions for different settings, including professional football and professional ice hockey as well as for different populations, including college athletes (Barth et al., 1989; Collins et al., 1999; Lovell & Collins, 1998). Using traditional neuropsychological assessment techniques, single, mild concussions in healthy college aged athletes have been shown to result in decreased neurocognitive performance, with a relatively rapid recovery curve ranging from 10 days up to 1 month post-concussion. Cerebral concussion in individuals with a history of previous concussion (Moser & Schatz, 2002) or learning disability (Collins et al., 1999) were found to have more enduring cognitive effects. Common to all of the aforementioned studies, cerebral concussions were observed to cause at least mild deficits in attention and concentration.

Computerized testing may play a particularly important role in the sports-concussion arena. Since the neurocognitive sequelae of concussion are often represented by relatively mild symptoms, baseline testing of athletes has been shown to be a powerful assessment tool. By comparing pre- and post-concussion neuropsychological data, the neuropsychologist can differentiate changes in neurocognitive status as a result of the concussion and evaluate the degree of symptom resolution. Given the extremely large number of athletes that may benefit from a baseline-testing paradigm, paper-and pencil tests may be too time-consuming to allow for a wide-based, baseline-testing program, particularly in high school. To this end, computer programs with accurate timing may be best suited to identify neurocognitive deficits, track progress toward recovery, and assist in return-to-play decisions, especially when post-concussive symptoms include delayed onset of response time and increased decision-making times (i.e., reduced information processing speed). It is the intention of this article to present current trends in computer-based assessment of sports-related concussion.

Computerized versions of tests have been found to be psychometrically equivalent when compared to traditional versions. In the computer-based form, however, assessment measures have features that may be





either absent or less accurate than when administered through traditional pencil-and-paper-based forms. These features include timing of responses and latencies, automated analysis of response patterns, transfer of results to a database for further analysis, and the ease with which normative data can be collected in a group setting. Computerized or automated assessment measures are, by nature, highly sensitive to subtle changes in attention, concentration, and response latency. Precise control over the presentation of test stimuli can be established, thereby increasing the reliability of computer-based tests. With computerization, the ability to control visual and auditory stimulus characteristics and features such as color, animation, and sound can be easily incorporated into all aspects of the assessment process, including the presentation of on-screen instructions. Thus, on general performance test measures, the speed and accuracy of differentiating visual stimuli may be superior to examiner based testing. Many of these advantages cannot be achieved with conventional testing. From a financial perspective, computer-based assessment can show cost-benefit gains over traditional administration procedures (French & Beaumont, 1987), as well as increased security of test data and patient records through computerized storage (Barak, 1999). The time and staffing requirements needed to administer and analyze a standardized battery of neurocognitive measures to an entire team of athletes can be significant. Since computer-based measures can be easily administered to groups of athletes and are scored automatically, they provide a useful tool for the consulting practitioner, team physician, or athletic trainer.

Computer-based neuropsychological test administration is not free from criticism or limitations. Test developers have often failed to meet established testing standards of reliability and validity established by the APA. Poorly designed interfaces can contribute to test anxiety on the part of the examinee. And, reductions in the amount of face-to-face interaction between the clinician and examinee can lead to misdiagnosis (Space, 1981). Furthermore, some researchers and clinicians suggest that computer-based assessment can never be equivalent to traditional methods of psychological testing, as the mode of administration creates a markedly different experience for the examinee (Honaker, 1988). In addition, computer-interface interaction may be more taxing cognitively to the concussed athlete, who may already be experiencing difficulty with attentiveness and concentration as a result of his or her injury. Thus, factors extraneous to paper and-pencil assessments, which are introduced during computer-based assessment, must be identified and evaluated with respect to their potentially disruptive effects.

Timing of the synchronization between the computer's microprocessor and monitor cannot occur without a measurable amount of error or delay in timing, and it can be difficult to standardize or control this delay with any degree of consistency. As a result, inaccurate timing procedures have been found in software used to assess human performance. This potentially serious technical deficiency has been well documented. Researchers have since developed software solutions that provide near-millisecond accuracy. In fact, clinicians wishing to obtain a gross measure of reaction time or response onset latency may not even require such accuracy. However, medical research efforts employing the use of functional magnetic resonance imaging (fMRI) to observe brain-behavior relationships require synching between stimuli presentation and scan acquisition within very specific time intervals (Gur et al., 2000; Gur et al., 2001). As such, fMRI technology is currently being incorporated into psychometric validation research using post-concussion and brain imaging data (Marion et al., in press) to allow accurate timing to the millisecond.

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## Enhancing Life Skills through sports for children and youth

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### Abstract

Sport pedagogy is a discipline aimed at providing scientific data on the education and training in the different contexts in the field of sport and physical activity: education, coaching, recreation, rehabilitation. Its main objectives consist to improve the knowledge and the field practice of the physical educators and their trainers. Sport participation has been associated with improved life prospects such as academic performance and employability prospects. However, the evidence for the causal effect of sport participation on these outcomes is still limited and little is known about factors that play a role in this possible effect. It is commonly believed that through sports, children and youth learn values and skills that will serve them well as they prepare for the rest of their lives. The purpose of this article is to describe the role sport can play in preparing youth to learn essential "life lessons," to discuss why so few programs achieve this goal, and future sport programs are discussed.

### INTRODUCTION

"The world of sport is not separate from the rest of the world. Sport breaks down barriers, promotes self-esteem, and can teach life skills and healthy behavior."

The World Health Organization (1999) has suggested that life skills are important for healthy development and preparing adolescents for the future. Sport psychologists have argued that life skills can be taught in combination with athletic skills in sport contexts. Sport is being viewed on a global level as a vehicle for promoting healthy development. Sport based life skills programs have gathered momentum in the USA since the mid 1990s. A number of sport based life skills programs have mainly originated in the USA.

Participation in all types of sports is extremely high for children and youth. Recent estimates are that 47 out of 52 million children participate in or have joined at least one sport program. Children in kindergarten through eighth grade are most likely to participate in sports after school, followed by religious activities, and then by art activities. Similarly, 58 percent of children age 6–17 participated in sports activities. For example, during the 2004–5 school year, approximately seven million high school students participated in athletic programs. As such, there is great potential for sport to contribute to the development of children.

It is important to note, however, that youth sports differ quite dramatically from individual activities to team sports (e.g. football), with different skills sets and competencies (e.g. strength, speed, dexterity) needed to perform effectively. Young people are engaged in a physical, structured activity with one or a group of adults who serve as coaches and mentors. Children voluntarily join sports programs for a variety of reasons including interest, fun, or to be with friends, and they consistently report higher levels of motivation and cognitive engagement in these activities, which contributes to a diverse array of personal and interpersonal developmental processes.

One clear goal of sport involvement is the promotion of fitness and health through an active lifestyle. However, it is also commonly believed that, through sports, children and adolescents learn values and skills that will serve them well as they prepare for the rest of their lives. 'Sports builds character' is a widespread



belief. Youth who participated in sports during high school were more likely to have volunteered, registered to vote, and followed the news closely as young adults age 18–25.

The role sport can play in preparing youth to learn essential 'life lessons', life skills can be acquired through sports participation; however, we take the perspective that being intentional and directly teaching life skills is more effective than assuming assimilation will occur or by using a lecture-oriented approach that is common in coaching. At best, information may augment other efforts as it describes what to do, but not how to do it. We believe that a better alternative is the teaching of skills of how to succeed in life and why such skills are important. Moreover, skills, whether directed toward enhancing athletic performance or success in life, are taught in the same way – through demonstration, modeling and practice (Danish and Hale 1981).

## **LIFE SKILLS IN SPORTS**

Danish and colleagues defined life skills as "skills that enable individuals to succeed in the different environments in which they live, such as school, home and in their neighborhoods". Life skills help a person not only excel in his or her sport, but also benefit the individual once he or she transfers the skills to non-sport settings. Life skills can be Behavioral (Communicating Effectively) or Cognitive (Making Effective Decisions), Interpersonal (Teamwork) or Intrapersonal (Setting Goals). Examples for life skills that can be acquired and perfected in the sport context are coping with success and failure, being self-disciplined, performing under pressure, managing thoughts and emotions, being able to manage one's time efficiently and being able to work and excel within a team context. These proficiencies are invaluable for most sport disciplines, but they also help athletes to succeed in their studies or school work, to qualify for a working career and to build and maintain healthy and satisfying personal relationship.

The interest in life skills development through sport clearly exists today, with most contemporary sport organizations declaring "the social-emotional development" of their athletes to be one of their primary goals. A major challenge for those interested in developing life skills in the sport context is the prevailing myth held by many coaches and parents that sport automatically teaches athletes life skills. Life skills are indeed skills, but like physical skills, they are taught through demonstration, modeling and practice.

However, the benefits of participation in sport are not transmitted through mere participation in games. There is nothing about sport itself that is magical. Being on the field or the court does not by itself contribute to the positive development of children and the acquisition of critical life skills. Understanding youth's experience in sports is probably most relevant to understanding how and why positive or negative effects are found. The structure and context of the activity was important in determining whether participation led to positive or negative outcomes.

Moreover, the ability to transfer skills learned in sports to other domains is perhaps the most crucial step in achieving the maximum outcome from participation in sports. Development of sports-based life skills programs is essential to this process. The programs clearly outline a road map as to how best to teach the skills or what may be considered 'life lessons' to youth.

Examples of sport-based life skills program

Sports United to Promote Education and Recreation (SUPER)

SUPER is a peer-led series of 18 modules taught like sports clinics. Participants are involved in three sets of activities: learning the physical skills related to a specific sport; learning life skills related to sports in general; and playing the sport. SUPER is patterned after the nationally known, award winning Going for the Goal (GOAL) program. GOAL is the 1996 winner of the Lela Rowland Prevention Award given by the National Mental Health Association. It has also been honoured by the US Department of Health and Human Services as part of its Freedom from Fear Campaign and received an honourable mention by the Points of Light Foundation.

A description of the 18 modules, each module is about 30 minutes in length. For an extended discussion of the conceptual framework for SUPER, readers are referred to Danish et al. (1993, 1996). The SUPER program has been implemented in conjunction with several sports including basketball, soccer, golf, rugby, and volleyball.



Student-athletes are trained as leaders and coaches for younger youth and participate in a service learning course. An integral part of the training focuses on how to use the Sport Observation System (SOS). The SOS emphasizes how youth participate and not just on how well they perform. Understanding 'how' provides information on the mental skills participants have in dealing with coaching/ teaching and is likely to be indicative of how they will respond to other forms of instruction such as school and job training. SUPER student-athlete leaders are asked to speak to the members of their team about what they observed. A 'life skills report card' is given to each participant at the end of the program. The report card provides feedback to the participants on the 'how' and 'how well' they have done.

Hodge et al. (2000) have applied the SUPER model in the development of the Rugby Advantage Program (RAP) in New Zealand. Danish and his colleagues have applied the model to golf. The First Tee is a national golf and life skills enrichment academy for adolescents. Results from an evaluation of the First Tee program indicated that the program had a significant positive impact on adolescents' pro-social values and that the community service experience positively affected the adolescents' level of empathic concern and social responsibility.

Papacharisis et al. (2004) applied an abbreviated (eight-session) version of the SUPER program to Soccer and volleyball with Greek school children, aged 10 to 12. Two pre-test, post-test comparison group design evaluations were conducted. The first study involved 40 female volleyball players on two teams; the second study involved 32 male Soccer players on two different teams. In each study, in addition to practice time, one team received the intervention and the other team did not. In both studies, measures included assessments of physical skills; knowledge of the SUPER program; and self-beliefs about their ability to set goals, to problem solve, and to think positively. The results of both studies indicated that students who received the intervention indicated higher self-beliefs for personal goal setting, problem-solving, and positive thinking than did those on the control teams. In addition, students in the intervention group demonstrated an increase in program knowledge and improvement in physical skills compared to students in the control condition.

## **The SUPER program**

1. Developing a Team The program and the peer leaders are introduced. Participants engage in several team-building activities designed to enhance communication and understand each other's strengths and weaknesses.
2. Dare to Dream Participants learn about and discuss the importance of having dreams for the future, share some of their dreams.
3. Setting Goals (Part 1) Participants learn the difference between dreams and goals and how to turn a dream into a goal. They identify people who support them in achieving their goals (Goal Keepers) and people who may prevent them from achieving their goals (Goal Busters).
4. Setting Goals (Part 2) Participants learn the four characteristics of a reachable goal (positively stated, specific, important to the goal setter and under the goal setter's control). They practice distinguishing goals that are important to the goal setter.
5. Setting Goals (Part 3) Participants practice distinguishing goals that are specific from ones that are not specific and goals that are under their control from those that are not.
6. Making Your Goal Reachable Participants apply the four characteristics of one reachable goal to their own goals. They set two six-week goals; one for sport and a personal goal.
7. Making a Goal Ladder Participants learn the importance of developing plans to reach goals. Making a ladder involves placing the goal at the top of the ladder and identifying six steps to reach their goal.
8. Identifying and Overcoming Roadblocks to Reaching Goals Participants learn how different roadblocks (e.g. using drugs, getting into fights, lack of confidence) can prevent them from reaching their goals. They identify possible roadblocks and learn and practice a problem solving strategy called STAR to help them overcome the roadblocks.



9. Seeking Help From Others Participants learn the importance of seeking social support when working on goals. They identify people in their lives, a Dream Team, who can provide doing and/or caring help to assist them in achieving their goals.
10. Using Positive Self-Talk Participants learn the importance of identifying their self-talk, how to distinguish positive from negative self-talk and how to identify key positive self-talk statements related to their goals.
11. Learning to Relax Participants learn the importance of relaxation to reduce tension.
12. Managing Emotions Participants learn that managing their emotions, both in sport and life, is learning to be smart. They learn and practice a procedure, the 4 R's (Replay, Relax, Redo, Ready), to help them play smart both inside and outside sport.
13. Developing a Healthy Lifestyle Participants develop an understanding of the importance of being healthy in all areas of their lives. They also learn how to make changes to insure they are living a healthy lifestyle and make a commitment to such a lifestyle.
14. Appreciating Differences Participants identify differences among individuals in the group and determine which ones are important and which ones are insignificant.
15. Having Confidence and Courage Participants understand the importance of believing in themselves and learn how to develop more self-confidence.
16. Learning to Focus on Your Personal Performance Participants learn what it means to compete against oneself and understand that competing against oneself to attain personal excellence can enhance performance.
17. Identifying and Building on Your Strengths Participants identify personal strengths and learn how to use the skills associated with these strengths and the skills learned in the program in other areas of their lives.
- 18 Goal Setting for Life Participants learn that goal setting is a lifetime activity and they set two goals to attain over the next three months. One goal is school related; the other relates to home or community. They assess whether the goals meet the four characteristics of a reachable goal and develop a goal ladder for each goal.

The Hokowhitu program (Heke 2001) is a sport-based intervention program designed by New Zealand Māori for New Zealand Māori. The program used Māori language and culture in the program development, implementation and evaluation. This approach was known as 'Kaupapa Māori Research' and appropriates Māori preferred learning and investigation styles.

The sport observation system # Questions

- 1) How attentive are participants when given instructions or observing demonstration?
- 2) What happens when participants cannot perform an activity to their expectations?
- 3) Do participants initiate conversation with others, or do they wait for someone else to talk first?
- 4) How do participants respond when they have a good or a bad performance?
- 5) How do participants respond when someone gives them praise or criticism?
- 6) Do participants compete or cooperate with teammates?

#### **Program Content**

- 1) How to Dream of Achieving.
- 2) How to Set Achievable Goals.
- 3) Presentations by Local Sports people about How They Achieved Their Goals.
- 4) Goal Setting Practice.
- 5) Making a Goal Ladder.
- 6) Roadblocks to Achieving Your Goals.
- 7) Overcoming Your Roadblocks.
- 8) Making Better Decisions and Seeking Help.
- 9) Rebounding from Setbacks and Rewarding Your Successes.
- 10) Celebration.





At completion of the Hokowhitu program, none of the participating junior students disliked school. Moreover, there were improvements in coping with negative pressure, developing positive attitudes regarding future outcomes and learning to cope with peer pressure. However, the Hokowhitu program improvements by the adolescent Māori in academic self-esteem, intrinsic motivation for school work, career awareness, and drug and alcohol awareness remained the primary objectives for the project.

#### Ideal programme Implementation

Sports are by nature structured activities with certain rules of engagement and types of interactions between individuals. However, there is generally a coach/instructor or someone skilled in the sport who is 'in charge' and responsible for management of the activity. By nature, participants follow directions and are expected to execute the skills and competencies as needed. Within these standard features of sports, the key question is how should life skills training be integrated?

If the sports program is designed to help the adolescent learn both sport and life skills, what is learned in the athletic venue must be able to be transferred to non-sport settings. There are a number of strategies that can enhance the transfer. They include: (1) Designing conditions to enhance transfer at the beginning of the activity (2) Creating similarities between the environment of the activity and the environment where the transfer is to occur (3) Providing opportunities to practice transfer during the activity (4) Providing opportunities to reflect on the experiences (5) Involving peers who have successfully completed the activity (6) Involving significant others in the learning process and (7) Providing follow-up experiences to reinforce learning.

In the case of sport-based life skills programs, both sets of skills must be taught, not caught. There is nothing about a ball or a sport venue that teaches life skills. Combining sport participation with lectures about the dangers of alcohol and drugs, managing anger, and staying in school, given by well-known athletes, is also inadequate.

First, being told what not to do is common fodder for youth and, although the messenger may be important to them, the message often has a limited impact. If messages are to be imparted, they need to focus on what has made the messenger successful, on and off the field – for example, their strength of character, steely determination, and deep desire to succeed regardless of the hardships and barriers placed in front of them.

Second, and perhaps more important, it is necessary to remember that adolescents are active individuals. Their life experiences suggest they learn best by doing rather than by talking. A Chinese proverb best describes the ideal teaching process: "I listen – and forget, I see – and remember, I do – and understand".

#### The Basic Process for Skill Teaching:

Name it, describe it, and give a rationale for its use; demonstrate the skill so correct and incorrect uses of the skill can be observed; and provide opportunities for extensive supervised practice of the skill with continuous feedback. When integrating life skills and sport skills, special considerations exist. It is beneficial to provide a seamless transition between the two, yet if a goal of the program is to promote transference from one setting to another, some separation of the activities is necessary. After trial and error, we have concluded that if the life skill instruction is given too separately from the sport instruction, the life skills would simply be ignored or easily forgotten. If the life skill instruction is fully integrated into the sport instruction, it would be hard for the youth to understand how the life skills could be applied outside of sport.

#### Skill Teaching Result

They developed the following instructional design. They teach the general concept of the skill first. As part of the instruction they emphasize that successful athletes need to improve both their 'below the neck' (physical skills) and 'above the neck' (mental skills) abilities. Further, they explain and provide examples through activities for how both physical and mental skills can be practiced and improved in sport settings and how the mental skills can be practiced and improved in non-sport settings. They also have the participants





apply the skill to other areas of their lives and help them develop a plan to practice the skill in these other domains.

A Brief List of Nine Mental Skills for Successful Athlete

- Choose and maintain a positive attitude.
- Maintain a high level of self-motivation.
- Set high, realistic goals.
- Deal effectively with people.
- Use positive self-talk.
- Use positive mental imagery.
- Manage anxiety effectively.
- Manage their emotions effectively.
- Maintain concentration.

Mental Skill Training

These nine mental skills are necessary for performing well in sport as well as in non-sport performance situations. At the Ohio Center for Sport Psychology:

- They believe that these skills are learned and can be improved through instruction and practice.
  - They begin our work with each individual by assessing his current proficiency in each of the skills.
  - They develop a plan for teaching and enhancing the specific skills that need improvement for the individual.
- They periodically reassess the client's proficiency in each of the skills in order to evaluate our progress.

The Performance Pyramid

Although each of the nine skills is important, its primary importance will occur during one of three phases: long-term development, immediate preparation for performance, and during performance itself.

Level I - These mental skills constitute a broad base for attaining long-term goals, learning, and sustaining daily practice. They are needed on a day-by-day basis for long periods of time, often months and years.

Level II - These skills are used immediately before performance to prepare for performance. They may be used just before competition begins, or immediately before a specific performance action, such as a golf shot or a free throw in basketball.

Level III - These skills are used during actual performance behavior.

The pyramid below represents the relationship of the nine skills to one another. Each of the higher levels incorporates and is based upon the skills of the preceding levels.

Expected Positive Outcomes

- Students – Life Skills: Time management, leadership, teamwork – Social Benefits: Making new friends, expanding their social network
- Parents – Sense of belonging, increase their school engagement – Become autonomous, be in better shape
- Coaches – Global development of students (e.g., academic, social, physical)
- Goal Setting

Sports give children a safe place to set goals and experience the thrill of achieving them. Children can strive to set personal bests and gain confidence in their abilities. That confidence helps them achieve success in school and in their personal relationships, and help prepare them to find success as adults.

• Overcoming Adversity

Sports are a Lab for life. As Boys Town head football coach Kevin Kush writes in his book, *The 100-Yard Classroom* "The greatest gift of sports to its participants is the opportunity to learn how to overcome adversity in a safe and controlled environment." By encouraging the child to make and keep a commitment to a sports team or other extracurricular school activity, you are teaching him how to overcome adversity, which is critical for success in life.

• Building Character



Michael Jordan once said, "I've failed over and over again in my life. And that is why I succeed." Not allowing the child to give up when he is afraid of failing or being rejected by friends, or is tired of working hard builds character that can propel the child into life as a successful, productive adult.

## Conclusion

This article has focused on how sports programs and activities can be a venue for life skills training. The point made here is that the effort must be intentional. Although participation is often linked with developmental benefits, mere participation does not confer benefits; the quality and implementation of sports programs are the likely causal mechanisms of enjoyment and development. The integration and focus on life skills as part of sport involvement offers much potential. However, the relative paucity of programs on the mindset transition that would need to occur with participants, parents, and coaches is significant. Sports are 'where the kids are', the maximum potential of activities to enhance life skills and encourage the transfer of skills to other settings needs continued work and development.

I want to conclude this article with a quote by Plato who understood long ago that "the moral value of exercise and sports far outweighs the physical value."

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## IMPORTANCE OF PHYSICAL EDUCATION IN MODERN SOCIETY

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Physical Education is Education through Physical activities for the development of total personality of the child and its fulfilment and perfection in body, mind and spirit.

Physical education has a special significance, unique role and has made unlimited contributions in the modern age as it caters to the biological, sociological and Psychological necessities of the man.

Swami Vivekananda has stressed that "What India need today is not BhagwatGeeta but the Football ground".

Modern life, as characterized by sedentarianism, automation and computerization has created a new class of human beings who just sit for hours each day. The 21st century is an age of space and technological gigantism, charged by speed, noise and other tension producing factors. Urban life style has caused many tensions and it will grow worst of mankind.

Modernisation has thrust us inevitable side effects as well. Environmental pollution, cultural degradation, social disintegration, religious turmoil's etc. Have lead to ecological and social imbalances, and various Psychological and Physiological strains and disorders are few to mention in the list ever growing.

Today's man is facing, as never before, the crisis of existence and adjustment. To survive and overcome this present crisis, the need of the hour is grooming up a courageous, bold, physically, mentally, emotionally, socially, and intellectually strong individual. Physical education is the agency which is fulfilling this social obligation very effectively by providing comprehensive and diverse physical education programme.

The importance of Physical education in helping out the man from various self-created problems arising out of modernisation of the society cannot be undermined.

### IMPORTANCE OF PHYSICAL EDUCATION IN MODERN SOCIETY

#### 1.Optimum development

Physical Education considers the child as a united whole of mental, social, moral, and physical qualities and provides for the optimum development of all these through the Physical activities.

#### 2.Physical growth and development

Physical activity is necessary as it is conducive to the development of the organic system and functioning of the human body. It enhances his ability to resist fatigue, improves his performance and make him more active and healthier.

#### 3.Intellectual Development

Physical activities are essential for the development of a child's scientific insight, intelligence and superior type of reflective thinking.

#### 4.Emotional development

It provides opportunities to control emotions. The give and take of games and sports offer scope for both emotional release and the controlling of emotions.

#### 5.Social Adjustment

It provides an opportunity of interaction between participants and others in varied situations enabling them to enable to learn social qualities like sportsmanship, co-operation, honesty, friendship, fellowship, courtesy, self-discipline, and respect for authority which promote social adjustment of an individual.

#### 6.Character Development



Group effort, loyalty to the team and strong ties are much evidence in play and physical activities. All these provide the development of a good moral character.

## **7. Neuro-muscular development**

Neuro-muscular Co-ordination develops well only if various types of skills and exercises are done repeatedly for a long period of time. It provides quick and efficient movement and graceful carriage.

## **8. Cultural development**

Individuals from different cultures mingle with each other and come to know about other's customs, traditions and ways of life, thereby promoting cultural development.

## **9. Leadership qualities**

Self-confidence, intelligence, loyalty, honesty, dedication and resourcefulness are some of the qualities of a good leader. Play ground is a good laboratory for developing these characteristics.

## **10. Democratic Values**

Organization and administration of Physical Education is based on democratic principles. Of give and take, and respect for authority.

## **11. Develops healthy attitudes and promote sportsmanship**

It teaches the art of winning and losing gracefully, the spirit of being fair to others leads to positive attitude and promotion of sportsmanship.

## **12. Constructive use of leisure time**

Through skills and physical activities an individual learns to utilize his surplus energies properly and allow him to make best of his free hours.

## **13. Citizenship qualities**

It helps in developing the traits of good citizenship like obedience of law, fairplay, sportsmanship, clean living, respect for others and patriotism which are essential to democratic living.

## **14. Economic value**

Now a day's Physical education is fast emerging as lucrative profession. It offers numerous business opportunities, and opportunities for self-employment as well as employment in various agencies at various levels. Concept of sponsorship fast entering in sports arena has provided a new and meaningful dimension to it.

## **15. Mental Relaxation**

Physical activities such as Yoga, aerobics, fitness programmes, and recreational activities help in relieving and reducing mental tensions caused by modern life style by diverting the attention and also by proving against let to frustrations.

## **16. National Integration**

In India there is so much of diversity with regard to religion, caste, creed, languages. Physical Education plays a very important role in bringing about unity and in promoting national integration.

## **17. International Understanding**

Physical Education provides a platform to act across the barriers of national boundaries. International events afford an opportunity of personal interaction between the sportspersons of different countries and bring them together and closer their experience thus promoting peace, goodwill, friendship and universal brotherhood.

## LOAD PARAMETERS, CYCLICITY AND METHODS OF SPORTS TRAINING

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The word 'Training' has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years. The regular and systematic use of physical exercises, however, does not guarantee maximum improvement in performance. The effect of these exercises is increased or decreased by a multitude of factors. Sports training is done for improving sports performance. The sports performance as any other type of human performance is not the product of one single system or aspect of human personality. On the contrary, it is the product of the total personality of the sports person. The personality of a person has several dimensions e.g., physical, physiological, social and psychic.

☐ Sports training is a systematic process planned and controlled extending over a long period, in which for achieving goal, changes in complex sports motor performance, ability to act and behavior are made through measures of content, methods and organization (Martin 1979).

☐ Sports training is a pedagogical process, based on scientific principles, aiming at preparing sportsmen for higher performances in sports competitions.

**LOAD:** Load is the process of tackling training and competition demands which cause temporary disturbance of psychic and physical state of homeostasis. Sports training consists of activities and movements which generally lead to high fatigue. Fatigue is the direct product of load caused by physical activity or exercise. Fatigue is essential for starting the adaptation processes in the organism which ultimately lead to increase in performance capacity. Load, therefore, is of central importance in sports training. Without load through physical exercises the performance cannot be improved, stabilized and maintained. Stagnation of load results in stagnation of performance.

**INTERNAL LOAD:** Psychological and physiological changes of the sports person. Eg., Heart rate, concentration and attention.

**EXTERNAL LOAD:** Type of exercise done by the sports person, quality of execution and load intensity and load volume of the training session.

**OVER LOAD:** Over load is state of decreased performance capacity. The state of over load (also called over training) is not the outcome of training or competition load or some other effect on the sports man in one or two days. It occurs over a longer period and is a state of concern for the coach and sportsman both as it can destroy the achievements of training for a year or even more.

**RECOVERY (Transitional Period):** The recovery from training and competition load is a long duration process. The main aim of the transitional period is to give recovery and relaxation to the sportsman after the hard and strenuous training in preparatory and completion period. This helps him to recover and recuperate in order to start the next training cycle. The duration of the transitional period should not be more than 4-6 weeks.

Load parameters of Basic Methods of Conditioning

(Based on Scholish 1988)

## Load parameters of Basic Methods of Conditioning

(Based on Scholish 1988)

<i>Method</i>	<i>Intensity</i>	<i>Recovery</i>	<i>Volume</i>
Continuous Method	40-60% (25-75% for Strength)	No Recovery	Very high
Interval Method	80-90% (approx. 75% for strength)	90-180 Sec.	8-12 repetitions/Series
A.Intensive			
B.Extensive	60-80% (approx. 50-60% for strength)	45-90 Sec.	20-30 repetitions
Repetition Method	90-100% or more (80-90% sometimes 100% or more for strength)	3-45 min.	1-6 repetitions (3-6 repetition/set For strength)

**MICRO-CYCLE:** The duration of micro-cycle is normally one week (weekly cycle). The micro-cycles form the basis of meso-cycles which in turn form the macro-cycles. In a micro-cycle the training load should not remain constant. There should be fluctuation of training load. There should be one or two training sessions of about 30-60 min. duration devoted for active rest. Such sessions of active rest are obligatory in competition period and in micro-cycles in which high training loads are tackled by sportsmen. In active rest training sessions, general exercises should be used with low intensity. On the last day of the micro-cycle complete rest should be given i.e., no training should be done.

**MESO-CYCLE:** Meso-cycles have a normal duration of 3-6 weeks. At the end of each meso-cycle a week is devoted to recovery. This is achieved by low training load and by the use of general exercises. Correct formulation of load dynamic in a meso-cycle is important for preventing accumulation of fatigue.

**MACRO CYCLE:** Macro Cycle is the longest training cycle. It is usually divided into preparatory, competition and transitional periods.



## CONSTRUCTION OF REBOUNTING ABILITY TEST FOR BASKETBALL

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Physical Education aims at strengthening the learning process of children and youth so as to make them responsible citizens in our democratic society. Games Sports, Dances and Art act as important cultural bridges between people of world. International competitions such as Olympic Games, Dance festivals Art Exhibitions act as integrating agents between nations. Sports improve life style. Outstanding sportsmen and women enjoy higher social status in the modern society. However, to become a good player, one needs to spend more amounts on equipment. As India is a developing country, people at the lower strata are unable to spend money on games. Basketball is definitely an athletically challenging sport, as it exercises all of the muscles in the body. The arms are exercised through the passing and shooting of the basketball while the legs are exercised through the running up and down the court and the jumps they complete in order to gain height for a shot. It is important to note that basketball not just exercises all of the parts of the body but it exercises all of the muscles as well, as mentioned. It is important to note that the two are not the same concept, not by a long shot. The leaping and running movements exercise all of the lower parts of the body and the shooting and passing movements exercise all of the arm muscles as well as the chest, a chest pass is the same identical movement to a push-up. Because of the completely interdisciplinary techniques involved in the sport, training for it is extremely varied as well.

Fundamental skills are the plenty in any game, and basketball is on exception to this a high degree of performance depends on the experts of these skills. To enjoy the game frankly; one needs to develop ability in fundamental skills. When a player has expert the fundamental skills of the game, a feeling of gaining expertness over the game comes. In order to measure these skills, tests should be conducted for evaluation purpose tactics will succeed only through individual fundamental skills. Therefore, every player must know about the importance of perfecting the fundamental skills .from this we can understand that only a players with perfection in all the fundamental skills can become a top player. The game of basketball is very complicated in terms of skills and team work. In this game, everyone should mastery over fundamental skills like Dribbling, passing, shooting, rebounding, defense etc. When one has mastered the fundamental skills of the games, he gets a feeling of well being. High level of performance otherwise known as playing ability in basketball depends upon proficiency over the fundamental skills.

High level of performance of a basketball player depends upon fundamental skills. It is recognized that among the fundamentals, ability to dribble the ball, ability to shoot , ability to passing, ability to rebounding , ability to lay-up shoot are of primary importance for high level of performance. This game is spreading its wings in the others parts of the world also. For survival of any game, talent identification becomes crucial issue. Skill tests are essential for identifying the talent. This skill test will be useful to physical education teacher's coaches and basketball experts to identify the basketball players.



## METHODOLOGY

Selection of rebounding skill test was to identify this efficiency in basketball players. Hence the researcher has chosen video analysis technique by involving 12 experts in basketball. Only coaches and physical education teachers having 15 years of experience in the field of basketball are taken as experts. Experts have identified Rebounding skill is essential skills for the basketball. The aim of the study was to implement the Rebounding ability test for basketball players and it was useful to all the basketball players to assess the Rebounding performance.

### Test Design

Rebounding test was to identify and developing basing on the fundamental and advanced skill in basketball. The test will be applied on various levels of basketball players in the age group of 16 to 19 years boys. These test will be conduct twice as the same group and consistency results acknowledged these results are calculated by the statistically methods. After constrict the test, will be developed how to measure the different test. By following various tests measurements are favorable for or not will be observed. Once again opinion of the coaches and experts in this game are taking in to consideration.

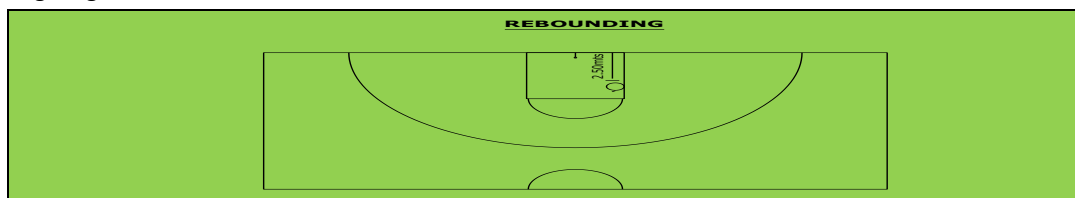
### Administration of the test (Rebounding ability Test)

**a) Purpose:** The purpose of the test was to measure the ability of jump and collect the ball from the board over head and shoot the ball into the basket in 30sec.

**b) Equipment:** Standard inflated basketball, a basketball backboard, tape for measuring and marking.

### Administration

**Test/Target Dimensions** A line is marked at a distance of 2.50mts. away from the end line as shown in the following diagram



The subject stands with the ball at a distance of 2.50 mts from the end line, facing the board. On signal of the tester i.e. whistle, the subject has to toss the ball against the board in such a way that the ball should touch the board and the player should collect the rebound. After collecting the rebound, he can land on the floor and make a basket without taking further step or dribble towards the board. If he misses the basket he is not permitted to shoot again. But he can shoot again only after taping the ball on to the board and receive the same. He can take any number of shot in 30sec.

### Scoring

Each successful basket is counted as two points and unsuccessful basket only one point. Three trials were given. Best of the three trials was taken.

Statistical methods adopted

The raw scores collected by conducting the skill test would be converted into standardized scores. Co-efficient of correlation was used in this study.

### Analysis of the data and Conclusion

The data was taken from the various states in South India. The group of subjects 16 to 19 year boys statically analyzed variable Rebounding test by use of mean, standard deviation and correlation scores. The level of significance was at 0.05 level confidences.



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Variable	AM	SD	Coefficient of correlation
Rebounding Ability Test For Boys	14.43	3.33	0.91

## Conclusion and recommendations

1. Similar study may be conducted on various age groups and various genders
2. Similar study may be taken to various body types.
3. Similar study may be taken to physical education teachers and coaches to improve the other skill

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## ROLE OF YOGA IN INDIAN PEDAGOGY

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'Sound mind in a sound body'. The secret of success lies in determination, preference and proper guidance. These are possible to Indian students by practising yoga as the part of their life. As there is an immutable interchange and reciprocal dependence between body and soul to affirm the body is to affirm the unity hidden behind the body soul and mind complex. The body cannot on its own assert and existence that is separate from this unity.

### **Indian pedagogy:**

In 1964-66 under the chairmanship of Dr.Kothari for the first time in the educational history of the country. The government of India decided to review the entire educational structure of the country. The Commission made a detailed survey of the curriculum followed was inadequate and modelled and not properly designed the needs of the modern times. The commission noticed that there was wide spread dissatisfaction of the curriculum due to tremendous expansion of knowledge in recent years. The commission recommended that there was an urgent need to raise, upgrade and improve the school curriculum.

Recommendation of the commission suggestions regarding physical education is important for the physical fitness and efficiency, mental alertness and the development of certain quality character. Hence, physical education programme is to be re-examined and redesigned.

As India is having cultural heritage. Age old of practices of people are keenly observed and followed by western people and patenting, which should not be done in the case of yogic practices. It is possible only when we insist in Indian schools and it accustomed by the policy makers and followers.

### **Types of yogic practices which can be implemented in the Indian pedagogy.**

JnanaYoga, Karmayoga, Bhakti yoga, Raja yoga, Dhyana yoga, Kundalini yoga, Mantra yoga, Shakti yoga, Yantra yoga, Mudra yoga, Laya yoga etc., By and large, there are four types of persons in the world: the intellectual, active, emotional and contemplative. Those who are intellectual follow the way of Jnana yoga, the way of wisdom and discernment. Those who are active follow the karma yoga, the way of action and service rendered without selfish motives, eg, Mahatma Gandhi, who showed the world that one could find God by serving man.

Those who are emotional follow the way of Bhakti Yoga, the path of devotion and love, where the personality is dissolved and the individual becomes completely unselfish.

Those who attach the greatest importance to contemplation follow the path of Raja yoga, the way designed to control and master the mind by mental concentration. Raja Yoga recommends suitable methods and the practice of postures and breathing control, called Hatha-Yoga, with a view to finding calm, mental balance and peace of mind. Bodily health is very important for mental growth; this is why Hatha-yoga and Raja yoga complement one another. They constitute the same process in the liberation of the spirit. Later on we shall present a detailed study of the Hatha-Yoga system.

There are many other yogas: union with the divine power (Kundalini yoga); mastery of thoughts through meditation (Dhyana Yoga); repetition of sacred recitations (Mantra Yoga); control of the will (Laya yoga); control of the force present in human nature (Shakti Yoga); use of symbolic gesture during meditation (Mudra Yoga); and realization of a mystic experience (Yantra Yoga).



Since we give secular education in our educational system without much interference of the religion curriculum framers can think of incorporating the age old exclusive knowledge of Indian origin-Yoga in physical education.

As we all know there are different types of learners viz., auditory learners, visual learners, kinaesthetic learners basing upon their abilities and need to be rectified their weaknesses and personality disorders as a student, different courses of yoga can be tailored in accordance with their position as rightly stated by **Upanishads 'The self cannot be known by one who is dull or restless, who is not strong, disciplined and self-controlled. Neither can it be known by much learning nor by reasoning. It can be known only through calmness of mind, through practice of Yoga and through meditation**

Each of these forms can be familiarised by our students in accordance with their age and character to make them full-fledged successful human being.

#### **Present Scenario of Yoga in Indian Pedagogy:**

Although we know the greatness of Yoga Indian Government is not given due importance to yogic education in pedagogy which is highly lamentable. Better late than never it is high time to make realize and implement yoga as a part and parcel of every Indian student in various forms his education viz formal non-formal, open school, etc., and in various stages of education as fulfilment for the accreditation award of certificate no matter which course he is opted. Only few institutions in the private management are making the students to learn and practise yoga in their daily activity. Where as in the Government educational sector only committed physical education faculty is introducing yoga for students in some form or the other. For the remaining students yoga means as new as Greek and Latin, unless they learn by themselves through the other means.

**Need of yoga for Indian students:** Through the virtue of access to media or newspapers and social media we come to know what is happening in our country, and heart breaking incidents make us realize the need to change the attitudes of the people around us. Today's students are tomorrow's citizens. It's our responsibility to mould attitudes of our future countrymen for their physical, psychological, social, ethical wellbeing.

Medical experiments and psychological research have shown that negative mental attitudes are dangerous and lead to illness. They may act either directly or indirectly, in the form of heart attacks or failures or illnesses which may be traced back to the accumulation of uninterrupted tension. To avoid tension youth is looking for alcohol or tranquilizers, which leading to destruction though they may not be fatal. They leave one depressed or demoralized, and lead, in the end, to serious illnesses. All this goes to show that mental energy, when used negatively, will sooner or later cause us to fall ill. According to scientific research on Yoga carried out at the Lonavla laboratories, Indian medical science in the West, constant worry and prolonged grief provoke the formation of calculus stones, i.e., small stones in the gall bladder or kidneys. Frustration and overwork lead to nervous exhaustion. A sudden fright causes diarrhea while frequent agitation brings on heart and varicose troubles. A state of anxiety may also be the cause of chronic constipation. The moment we use mental energy positively, we change our attitude and outlook. A positive mental attitude, couple with faith, sweep away all our doubts, so that we seem to possess an inner force that is great enough for us to overcome all our difficulties. It is common knowledge among psychologists that a person's reaction to an even is more important than the even itself: when we look the facts in the face, however hard they may be, they are not as important as our attitude towards them. An even may overwhelm us mentally before we have even begun to get to grips with it. One of the most powerful factors is to have confidence in oneself. When yoga is practised correctly and conscientiously, it becomes a sure way of restoring balance, helping us to develop determination and resistance and above all, to find serenity and inner peace. It is the need of the hour to have peaceful and balanced citizens in our country to avoid Chios in our lives.

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## SPORTS AND PERSONALITY DEVELOPMENT

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### INTRODUCTION

**Personality is dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment"**

**-Mr.G.W.Allport**

.A well developed personality has become the need of an individual to survive and progress in this competitive fast changing world that expect unique adjustment. A balanced personality is a product of a sound body and a well developed mind. As most of elements of physical education can play a vital role in shaping the personalityPhysical Education including games and sports plays a tremendous role in the development of our youth. It enables an individual to live a healthy life in an ever-changing world. Physical Education makes the children psychologically, physically and physiologically active. It helps in the development of character building, reduction of rowdiness, and serves on the basis of group unity and solidarity. It introduces team work, self discipline, sportsmanship, leadership and socialization among the youth. Regular physical activity provides numerous health and cognitive functioning. The surgeon general recommends daily participation in physical activity for taking maximum health benefits because inactivity has been found to be significantly related to coronary artery disease, obesity, hypertension and diabetes mellitus. It also helps the people to improve their physical fitness. Five basic components of fitness are important for good health: cardio-respiratory endurance, muscular strength, muscular endurance, flexibility in joints and body composition. It is clear from the literature that the development of an acceptable level of physical fitness helps to attain healthy personality and physio-psychological characteristics. Hence, a better healthful living is universally accepted as a goal of a physical education programme. Generally young boys and girls of colleges are expected to be academically brilliant, emotionally stable, physically strong and spiritually sound. We can achieve this requirement through the physical education. Physical Education has a vital role to play as an integral part of General Education. It aims at enabling an individual to line an enriched and abundant life in an ever changing world. Education Commission (1964-66) emphasized that physical education activities and sports contribute not only to physical fitness and health but also to physical efficiency, mental alertness and development of certain qualities like perseverance, team spirit and many other values of life processes and high achievements. In the past twenty years great attention has been paid to the psychoanalytic and psychotherapeutic issues associated with physical activity. With respect to the increasing prevalence of mental disorders throughout society and the influence of physical activity on these disorders. Physical education has a special obligation of preparing the youth for work and socially useful activities. It contributes to the development of the individual through planned movement on physical activities. It is believed that only sports can revitalize even a paralyzed society. The importance of sports in personality development is has been discussed in this article.

### VALUE AND IMPORTANCE OF SPORTS

**The great virtue that sports teaches everybody is the will to win,**

Sports are good means of generating the will to compete and achieve the goal. They make the individual to realize his/her potentialities and make good use of one's strengths and capacities and plan to overcome



limitations if any. Life is a continuous struggle and every day to strive to do much better compared to the other day

**Better than yesterday but not as good as tomorrow.**

**-Chanukya**

In the endeavor to excel one has to overcome a number of hurdles and obstructions. Life is full of struggle that has been started since the creation of the world. It is the fight of the individual against the odds of nature that make him strong and courageous to meet the challenges of life. It is sports that generate the needed platform to prepare the individual to meet the challenges of life.

## **SPORTS AND WILL POWER:**

Sports enhance the will power of the individual to receive instruction practice seriously. It is the will power of the individual. It is easy to realize the importance of the golden rule to success that is failure is the pillar of success through sports. Sports can make one's will power strong and one determines to win by putting every effort that is needed to succeed

## **SOCIAL WELL BEING**

"Sports is human life in microcosm," said a sports broadcaster, Howard Cosell. Apart from benefiting their physical health, sports also play an important role in psychological development and social well-being of a child. Playing sports inculcate values like discipline, responsibility, self confidence, sacrifice, and accountability.

## **SPORTSMANSHIP:**

Games of life that one play help to promote the spirit of endurance and fellowship.- willingness to sacrifice. This spirit of sacrifice leads in building of an ideal society whose interest lies in the welfare of its members. If sports and sportsman spirit can penetrate deep into the minds of the individuals people can keep themselves away from the antisocial characteristics. By playing sports, children learn how to get along with their peers and interact positively with their coaches and elders. It builds sportsmanship spirits in them, whether they win or lose

## **CONTENTMENT AND SATISFACTION:**

Dr. Keith Zullig and Rebecca White from West Virginia University, USA, conducted a research which reveals that middle-school teenagers who are physically active and play sports are more contented with their lives and feel healthier than those who do not participate in sports and physical activities.

## **IMPORTANCE OF GAMES AND SPORTS IN THE OVERALL DEVELOPMENT OF PERSONALITY**

**"Sports strips away personality, letting the white bone of character shine through. Sport gives players an opportunity to know and test themselves."**

**-Rita Mae Brown(2013)**

Sports and games play an important role in the development of human personality. They are no less important than food and fresh water. The developed countries like England, Germany, France and U.S.A have made games an essential part of education at the school level. It is interesting to note that there are many nurseries and training centers for games in these countries. The value of games is now being increasingly recognized in India from personal, social, educational and national points of view. Games and sports are essential for the all round development of a personality. It is by playing games and sports that we can keep our body fit and active. Games keep our body alert, active, youthful and energetic. In activities involving games and sports, blood-circulation increases and there is an increased supply of oxygen. Only a healthy person can work long, hard and cheerfully. An unhealthy person may not take as much interest in work as a healthy one. Health can be



maintained by exercise alone. But games and sports have some additional benefits as they are played in groups and in healthy competitive spirit. Among many other things, they help develop co-operation, quality of leadership, team spirit and a willingness to submit to, and further, the rule of law. Games instill in the players the spirit of self-reliance, justice, fair play and sporting spirit. They make people bold, adventurous, social, disciplined and more conscious of their responsibilities towards society and nation. Players have been found better equipped to fight superstitions, communalism, obscurantism and narrow approach to issues of national interest. Games also help in overcoming the sense of violence, arrogance and superiority as these are purged by providing them sufficient outlet. A sports person may not lose his or her temper and morale even in the face of defeat because he/she would take it coolly, calmly and then would try to perform better the next time. Players know that victory and defeat are the two aspects of the same coin. There is more joy in playing than in its end result.

## HOW TO PROMOTE SPORTS.

In order to promote a healthy sporting culture we have to adopt certain strategies. Like in other human endeavors in the field of sports also we need to recognize sporting intelligence and foster it right from primary school level.

1. There must be a sound sports policy at the national level and it must incorporate the needs of the diversified Indian society.
2. As in academic areas in the field of sports too merit is to be recognized and encouraged at all levels.
3. Sports promotion must be carried out from the grass roots level. That is from the village panchayat level onwards adequate steps are needed to promote sports.
4. Too much of commercialization of sports and sporting events lead to undesirable sporting culture and that should be avoided.
5. Provision must be made for adequate funds to sustain sportsmen and sports activities.
6. The importance and significance of sports must be propagated through all means of mass communication.
7. Sports activities are to be incorporated to celebrate national events and national festivals.

## CONCLUSION

Physical education plays a vital role in the personality development of our youth. It makes them physically healthy, active and mentally alert, and also reduces their risk for health problems. It enables them to live in a healthy and competitive environment. It develops in them team-work, self-discipline, sportsmanship, leadership and socialize. References

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## ANALYSIS OF ANXIETY, AGRESSION AND TEAM COHESION AMONG VOLLEYBALL AND FOOTBALL MEN PLAYERS

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### ABSTRACT

The purpose of the study was analysis of anxiety, aggression and team cohesion among volleyball and football men players. To achieve the purpose of this study the investigator selected 30 players, consisting of 15 volleyball and 15 football men players. The subjects were randomly selected from players who participated in Inter collegiate Tournament from Y.M.C.A. College of physical education Chennai. The selected subjects' age groups were ranging from 18 to 26 years. The selected psychological variables were anxiety, aggression and team cohesion. Anxiety was measured through standard questionnaire. This questionnaire was developed by Spielberger. Aggression was measured through the questionnaire developed Buss, A. H., & Perry, M. (1992). And Team cohesion was measured by administering the Group Environment Questionnaire by Carron, Brawley, and Widmeyer, (1985). The obtained data from volleyball and football men players were compared for differences. The independent 't' ratio as stated by Clarke and Clarke was used to test for the difference between the group mean. The level of confidence was fixed at 0.05. the results of the study proved that there were no significant difference on anxiety, aggression and team cohesion between football men and volleyball men.

**Key note:** Anxiety, Aggression, Team cohesion, volleyball and football men players.

### INTRODUCTION:

Today, sport and exercise psychologists have begun to research and provide information in the ways that psychological well-being and vigorous physical activity are related. This idea of psychophysiology, monitoring brain activity during exercise has aided in this research. Also, sport psychologists are beginning to consider exercise to be a therapeutic addition to healthy mental adjustment. Modern man lives in a mental world in which the important skills of success are based on his psychological activities. Increasing pressures on human mind in the pursuit of materialistic philosophy are making in roads into the happiness of life.

Anxiety is a psychological factor. Anxiety differs from arousal in that it encompasses some degree of alleviation and unpleasant emotional state. Thus the term anxiety is used to describe the combination of intensity of behavior and emotion. The direction, a characteristic of anxiety is negative in that it describes feelings that are unpleasant. (Kamlesh, 1993)

Aggression is a part of human behaviour and is necessary for an individual to live and struggle for higher achievements. Struggle for supremacy dominance and excellence in sports obviously involve aggression.

Team cohesion is defined as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of goals and objectives" There are many group dynamics that take place within a sporting team. One of the most important is cohesion. One is always hearing about how important it is for a team to "gel" or "bond" or "have good chemistry." Cohesive teams can achieve dramatic and awesome things. The way players interact has a tremendous impact on the way a team performs. "The fittest to survive and succeed are those able to find their strength in cooperation, able to build teams based upon mutual helpfulness, and responsibility for one's fellow teammates." (Hall, 1960),

## METHODOLOGY:

The purpose of the study was to analysis of anxiety, aggression and team cohesion among volleyball and football men players. To achieve the purpose of this study the investigator selected 30 players, consisting of 15 volleyball and 15 football men players. The subjects were randomly selected from players who participated in Inter collegiate Tournament from Y.M.C.A. College of physical education Chennai. The selected subjects' age groups were ranging from 18 to 26 years.

## Selected Psychological Variables:

Table - 1

S. NO.	VARIABLES	TESTS
1	Anxiety	Questionnaire by Spielberger
2	Aggression	questionnaire developed Buss, A. H., & Perry, M. (1992).
3	Team Cohesion	Group Environment Questionnaire by Carron, Brawley, and Widmeyer, (1985)

The independent 't' ratio as stated by Clarke and Clarke was used to test for the difference between the group mean. The level of confidence was fixed at 0.05.

## Result and discussion:

The comparison of selected psychological variables between Football men and volleyball men players are presented in Table II.

Table II: Showing Descriptive Statistics and Obtained 't' Value between Volley ball Men and Football Men Players

Variable	Groups	Mean	MD	SD	SDM	't'
ANXIEY	Volleyball Men	47.67	1.40	5.56	2.09	0.67
	Football men	46.27		5.87		
AGGRESSION	Volleyball Men	100.53	-9.47	19.15	5.68	1.67
	Football men	110.00		10.82		
TEAM COCHESION	Volleyball Men	114.40	-2.80	13.79	4.60	0.61
	Football men	117.20		11.30		

Required 't' value at 0.05 level 1.76

\* Significant at 0.05 level

Comparison of selected psychological variables, anxiety, aggression and team cohesion between football men and volleyball men players are presented. It was found that there was no significant difference between volleyball men and football men players on anxiety. Further the results proved that there was no significant difference on aggression between football men and volleyball men. The results further proved that there was no significant difference on anxiety aggression and team cohesion between football men and volleyball men.



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## Conclusion:

1. It was concluded that there was no significant difference between volleyball men and football men players on anxiety.
2. It was concluded that there was no significant difference on aggression between football men and volleyball men.
3. It was concluded that there was no significant difference between football men and volleyball men on team cohesion.

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## THE EFFECT OF YOGASANAS ON HUMAN BODY

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**Introduction:** The major diseases of middle age people are serious and often fatal, yet are more easily preventable than cure, and physical exercise plays an important role in this. It is a matter of discovering an exercise activity that sets naturally into the routine, something that can develop into a regular habit. In today's era, Physical Education has made an important place, by achieving success in various kinds of activities like sports and games, Asana etc., in which Yogasanas have generated more universal attraction.

**Effect of yogic practices on human body:** The scientific research work to investigate the effects of various Yogic practices on the Human Body has been going on over last six decades. The Scientific Research Department of Kaivalyadhama, Lonavla, has a major contribution in this field. Apart from this institute, number of research groups in India as well as in other parts of the world is engaged in this activity.

**Yogasana:** The word yoga is derived from the Sanskrit root yuj meaning to bind, join, attach and yoke, to direct and concentrate one's attention on, to use and apply. It also means union or communion. It is the true union of our will with the will of god. "It thus means," says Mahadev Desai in his introduction to the Gita according to Gandhi, "The yoking of all the power of body, mind and soul to God" it means the discipline of the intellect, the mind, the emotions, the will, which that yoga presupposes; it means a poise of the soul which enables one to look at life in all its aspects evenly.

**The Role of Oxygen in Yogasanas:** Oxygen, like the other four substances (protein, fat, sugar and salt), is brought to the tissues by the circulation. Unlike the other foodstuffs, however, it does not enter the bloodstream through the digestive system, but through the respiratory system.

**Influence on Circulatory functions:** The other system vitally connected with the supply of nourishment to the tissues is the circulatory system, because the work of carrying nutrition to the different tissues is done by the blood circulation through the human body. The circulatory system consists of the organs responsible for the circulation of blood, namely the heart, the arteries, the veins and the capillaries. Let us now examine the help yogic poses render to this circulatory system.

**Influence on Respiratory Function:** The fifth element of nourishment is oxygen. Like the other four elements of nourishment this elements is also carried to the tissues by the circulatory system. And as we have seen that the practice of Asanas keeps the circulatory system healthy, we feel convinced that there would be no difficulty in feeding the tissues with oxygen, one it is taken up by the blood in the necessary quantity. Proteins, fats, sugars and salts are taken by the blood current from the digestive system.

**Physical and Mental Benefits of a Yogafit Workout:** Physical exercise not only works our muscles but also triggers a variety of biochemical and physiological reactions. Yogafit, as a hybrid of yoga and exercise, confers a variety of physical and mental benefits and leads to improved health and vitality.

**The Benefits of YogaFit:** A regular yogafit workout gives you all the benefits of a traditional yoga practice and more. Best results are achieved by practicing at least three times a week for 45 to 60 minutes each time. Here are the most common results, which can be visible very soon alter you start your yogafit practice. But remember, the longer and more consistently you practice, the more you will benefit from yogafit.

**Effect on musculoskeletal system:** Most of the Yogic practices, especially Asanas require fine control over the use of the muscles and the joints. The controlled use of specific group of muscles to bring a particular



movement, and the maintenance of the final position with minimum amount of muscle tone, are the two important factors in the performance of these Asana. Because of this, all the three features of muscular activity i.e. the skill, the strength and the stamina are influenced by the Yogic practice. Additionally the gradual and sustained increase in the range of movements through various joints increases the flexibility.

Muscle condition in Paschimottan, on heart rate: When the Paschimottan was performed keeping the body musculature relaxed, the heart rate increased by 4% only. When it was done with vigorous effort to bend forward (i.e. Isotonic muscle contraction) the heart rate increased by 16%. And when it was maintained without any vigorous effort, without any relaxation in efforts but rather with tense muscles (i.e. Isometric contraction), the heart rate increased by 9%. Thus it is obvious that the Yogasanas done in a relaxed manner cause minimal strain to the heart.

**Effects on cardio vascular system:** Many of the yogic practices either because of the position in which the body is maintained (e.g. topsy-turvy postures) or because of their influence on internal pressure, ultimately affect the function of the heart and the blood circulation.

Blood pressure changes in topsy-turvy postures: Studies on eleven subjects during the maintenance of Sarvangasana showed the rise in the systolic blood pressure by 25%. In Shirshasana systolic blood pressure was found to rise by 4% to 10% and diastolic by 14 to 22%. During the five minutes maintenance period the maximum change was seen during the third minute. After reversing the asana it took one minute for the blood pressure to come back to normal level. Though the blood pressure increases in these two practices; it is much less, when compared to the effect observed in case of weight lifting where systolic blood pressure rises by 63%.

Cardiovascular efficiency: In the maintenance of proper health and physical fitness, Cardiovascular fitness plays a vital role. The 'Howard Step Test', considered as the reliable test for measuring cardiovascular efficiency was used in eleven male students and it indicated that daily one hour session of yogic practices done over the period of 9 months, improves their efficiency significantly. Thus from the above observations it seems that the long term training in yogic practices would reduce the work load over the heart during basal condition. This finding would be useful in cases where the person is suffering from high blood pressure and over straining of the heart function.

**Control of heart rate:** The long term practice of yoga, as seen in some Yogis, enables them to exercise control over some of the involuntary function of the viz. activity of the heart, circulation and metabolism. When the activity of the heart was studied in one subject with the help of ECG, it was observed that he could slow down his heart rate tremendously leading to stoppage of the heart. There are also some studies in which some subjects could slow down the heart to about 30 to 35 beats/min as compared to normal rate or 72/min.

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## CHANGING ATTITUDE TOWARDS PHYSICAL EDUCATION AND MODERN LIFESTYLES

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**Abstract:** From the ancient time sports and games have been the part of human instinct to enjoy life and be happy. In tune with the growth of man and the value system in the society around him, the intensity and the goal of games and sports have changed. The modern era of science and technology is featured by the analysis and accuracy of questioning mind with a deterministic approach and economy based value system in the society. In tune with this the sophistication and complexities in sports and games have also increased. Worldwide accepted concept about physical education is that it deals with all-round development of an individual through active participation in various recreational and play oriented activities, and an integral part of total education. Physical education popularly known and accepted as a profession which enables an individual to develop his physical, mental, social, emotional and other qualities to live most, serve best and get wellness. It also provides an opportunities to involve in various leisure time activities to get relief from tension and worries. Moreover it develops competitiveness which in turn develops personality for better adjustment and understanding capacity.

### Introduction

Today the technology has changed lifestyle of man largely and it will continue to do so. Physical work of person living in very fast lifestyle and pushbutton technology has become negligible. Things that were produced by labors system, have been replaced by machines. Due to this reason man of today is losing health and happiness. People become idle and dependent on technology. Obesity is the biggest issue now a day. Many invention have been made by the medical science. They invent to cure the person after they become ill. Not all the persons attached to respective field should be inactive. On the contrary, they should be active to ensure that they may not be ill. We always say- 'Prevention is better than cure'. We should concentrate on contributing factors of physical-happiness. We should spare sometime for physical labors, exercise, naturopathy, yoga & Asana, walking, jogging, swimming, recreational games to be healthy and fit in modern technologically featured life. Persons work in various fields, if food habits are according to their duties and type of work, then serious problems of health do not rise. In existing circumstances, health and hygiene are important for everybody. Physical-Education is not only limited to physical activities but it helps to develop the art of learning, leaving intellectuality and attitude towards life. Generally physical activities fall in two categories:

1. Health, recreation and fitness related activities.
2. Sports performance related activities.

In modern lifestyle people have no more time to spare for physical activities and games. Normally people accept physical activity when they fall sick with advice of a physician, but this is not enough. There should be a life time approach towards different physical activities. There is no little doubt that physical activity with appropriate frequency, intensity, and duration produces significant health benefits. Physiologists estimate that- "Physical fitness in one's richest possession, it cannot be purchased and it has to be earned through a daily routine of physical exercise." Physical-education deals with the health and wellness of citizen, which





directly leads to the fitness and progress of a nation. Wellness in holistic sense means a person must be full of life in good physical, mental, social and emotional state, and free from disease and tenderness to the maximum extent possible. Achieving a state of wellness means living a higher quality of life experiencing gap that goes beyond what material wealth and external situation can offer.

**Old age approach:** People would like to take part in physical education programme like, play combat, games etc. to spend their leisure time and to have fun and pleasure or to show superiority over another. Even in educational institutions students used to take part in physical activities without any compulsion. The result behind is students were free than now when compare to present curricula and demand of education to find livelihood.

## **\*OLD CONCEPTS OF PHYSICAL EDUCATION**

### **[A]Recreation centered lifestyle**

#### **\*Joint family system**

##### **\*Life settlement**

##### **\*Limited ambitions**

##### **\*Communication**

**1. Joint family system-**More number of individuals residing under one shelter used to get opportunities to interact and involve in recreational activities. Play used to be among the numbers of the kinship. Main intention was to interact and develop belongingness.

**2. Life settlement-** Commonly people used to reside in a particular place and this because work place was attracted to the family moreover, all the members of the family are involved in same occupation. There is less movement from place to place.

**3. Limited ambitions-** People are satisfied with their type of occupation and earning. Moreover people were unaware about the world around them, they never used to attain height by hook or crook.

**4. Communication-** Communication system was primitives low and limited to a particular community or area. People had no idea about what is happening on the other side of the globe. Poor communication restricted people to a particular area and adapt similar lifestyle by all.

### **[B]Performance centered a pproach-**

#### **\*Scientific approach**

#### **\*Professionalism**

#### **\*Propagandas**

#### **\*Superiority**

**1.Scientific approach-**Physical education when became a part of the total education process that takes place in around the man, gradual development has been made through implementing scientific facts and principals in obtaining high performance in sports and games to attain higher levels of goals. All efforts are being made with help of science.

**2. Professionalism-**Purpose of recreation has become profit motive and people began to move from amateurism to professionalism. Many people and organizations have made sports as a means of gaining money.

**3. Propagandas** –Wide publicity through various mass media attracted people to perform better in sports and get the motives achieved. Similarly media helped in comparing efficiency of one over another.

**4. Superiority-** Sports have become the means for providing superiority over others. People ready to accept defeat in the battle field but not on the play field. Superiority strength and the power of the nation are scaled through sports achievement.





**[C]Spectator centered**-Over the years drastic change from participation as spectators is seen all over the world this is due to many changes that taken place in the lifestyle of the people. Attitudinal change parents, children's, students and people can never be overlooked in assessing the present development of spectators. Change in the lifestyle, need for better placement, higher ambitions in life and due to mechanical life, attitude has been changed from time to time. Incidentally even active spectators taking a deviation as passive viewers or spectators.

## **\* Reasons of Attitude Change:-**

**1. Urbanization**:-People started moving towards urban areas to revise their standard of living and to have easy and fast life. Occupation becomes clock demanding and shifted to workplace. Which in turn developed mass spectators. Moreover, common holidays demanding certain entertainment for the people to get relief from tension.

(a) Limited play areas-Urban areas give rise to shortage or non-availability of sufficient play Areas. Since people do not get access to play grounds and recreational areas, because find it difficult to involving big muscle activities.

(b)Machine Mania-Arrival of various machine to perform domestic as well as productive functions of man, created easy and in active life. This also give rise to non-constructive leisure time, which may people to sit and watch television and other mass media.

**2. Heroism**-Most of the people would like to see and satisfy the action made by the active participants, which they cannot perform due to their limitations.

**3. Massmedia**-Recreational games, ply ( local or regional ) has become national and Internationalized and brought down to global village by the mass media. Whatever actions are being performed anywhere in the world could be easily viewed by the huge mass all over the globe. Moreover nuclear family system welcomes mass media to get solutions for childcare.

**4. Commercialization- Hooliganism** developed due to the influence of professional competitions Conducted at various levels for the purpose of profit making. Different contest announced through mass media to attract sports and games lovers towards moneymaking.

**5. Academic Advancement**-To meet the changing social needs and create human resource, too much of academic emphasis is given at various levels of education. Students do not find sufficient time to time participate in physical education activities. To release their mental tension and aggression, watching sports competitions is the only alternatives. Wide range of curriculum facilitates students to make career advancement in various disciplines. Multidiscipline oriented education does not provide any opportunity to engage in sports and games. Student community by and large converted as spectators to come out with their inner urge of participation for which there is no time and place and to get the burden of huge curriculum. Now it is high time for physical education profession to make such changes, which can affectively attract youth. Greater emphasis should be made on health related fitness. As we observe people suffer from diseases like cardiac arrest, diabetes, blood pressure, stroke, spondylitis, and meningitis, so on and so forth due to lack of physical exercises. One of the commonest old age health problem seen today is stress related problems like depression, psychosomatic diseases etc. physical education profession should come forward to make people aware about the need of physical exercise.

## **Suggestions for the Remedy:**

**[1]Elementary school physical education program**-Informal activities, playing recreational and minor games and some of the general fitness activities, which will help to develop neuromuscular co- ordination, general strength, endurance and speed as well as to develop better posture.



**[2]Secondary and higher Secondary physical education program-**Emphasis on fitness consciousness and voluntary participation in physical activities of big muscle. Reduce selection of students, coaching and competitions which demands screening and elimination. Educate Students regarding hazard and need for physical exercises.

**[3]Higher education-**All those who receive higher education must compulsorily indulge in physical activities at least thirty to sixty minutes a day. Stress on maintenance of muscular strength, cardio respiratory endurance and flexibility through stretching.

**[4]Veterans and old age physical activities-**Setup facilities at various levels to indulge in physical activities in the form of recreation, joking and general exercises. Opportunity must provide to make use of available facilities extended by physical education departments in various centers with proper propagandas.

## **CONCLUSION:**

Physical education is a dynamic profession and it is in our hand that how perfectly and efficiently we execute to keep up the status of the profession. As there is a saying that-“There is no shortcut for success “.Physical education personnel should try to follow the ethics of physical education and sports, so that possible justice could be done to the people and youth who are being cheated and diverted by our own personnel in obtaining results by hook or crook. All must make a collective efforts for the better progress and promotion of physical education.

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## RELATIONSHIP BETWEEN EXPLOSIVE STRENGTH AND REACTION TIME AMONG BOXERS

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### ABSTRACT

The purpose of the present study was to find out the relationship between explosive strength and reaction time among boxers. To achieve the purpose of the study 20 male boxers from different Boxing clubs in Chennai were selected in the age group between 18 to 25. Twenty boxers were selected as subjects. They were randomly selected from different boxing clubs in Chennai. They were tested in reaction time and explosive strength using the standard tests. To find out the relationship between explosive strength and reaction time, the Pearson Product Moment Correlation was used to find out the relationship between the criterion variable reaction time and explosive strength of boxers was correlated with the criterion variable. The results of the study proved that there was significant relationship between reaction time and explosive strength of the boxers.

**Key words:** Relationship, explosive strength, reaction time, boxing

### INTRODUCTION

Physical fitness develops the organic fitness is the basis of dynamic and creative activity. By participating in vigorous physical activities, physical strength and organic vigour can be improved to a large extent. The building of physical strength helps one to have good endurance to withstand strain and be efficient in the performance of activities.

According to Leonard A. Lanson (Ed), (1971), the systematic training improves physical fitness and the efficient functioning of the organ. The more strength of an organ the better will be its functional capacity Johnson and Nelson (1974) emphasized that "Physical fitness is a matter of fundamental importance to individual well being and to the progress and security of our nation.

**Boxing:** Boxing, sometimes also known as Irish boxing or pugilism, is a combat sport in which two participants, generally of similar weight, fight each other with their fists. Boxing is supervised by a referee and is typically engaged in during a series of one to three-minute intervals called rounds. Victory is achieved if the opponent is knocked down and unable to get up before the referee counts to ten seconds (a Knockout, or KO) or if the opponent is deemed too be injured or to continue (a Technical Knockout, or TKO). If there is no stoppage of the fight before an agreed number of rounds, a winner is determined either by the referee's decision or by judges' scorecards.

**Explosive strength :** Explosive Strength refers to the ability to exert strength or force as rapidly as possible in a given action.

**Reaction Time:** Lawther defines that the reaction time is the time that elapses from the occurrence of the stimulus till we act or the time from the occurrence of the stimulus to the completion of a simple muscular contraction.



## STATEMENT OF THE PROBLEM

The purpose of this study was to find out the relationship between explosive strength and reaction time among boxers.

## HYPOTHESIS

It was hypothesised that there would be a significant relationship between:  
Explosive strength and Reaction time among boxers.

## METHODOLOGY

Twenty boxers were selected as subjects. They were randomly selected from different boxing clubs in Chennai. They were tested in reaction time, explosive strength using the standard tests. To find out the relationship between explosive strength and reaction time, the Pearson Product Moment Correlation was used to find out the relationship between the criterion variable reaction time and explosive strength of boxers was correlated with the criterion variable.

Based on the experience gained through review of related researches, the investigator selected the following variables for this study. The reaction time and the explosive strength were selected for this study.

The data collected were put into statistical analysis to find out the relationship between explosive strength and reaction time using the Pearson Product movement correlation. In all cases the level of significance was fixed at 0.05 level.

## TEST ADMINISTRATION

### Leg explosive strength – vertical jump

**Purpose** -To measure the leg power.

**Equipments:** A measuring tape and a smooth wall surface at least 12 feet from the floor are required.

**Description:** The performer stood with one side towards a wall heels together kept on the floor, he reached upward as high as possible and made a mark on the wall. The performer then jumped as high as possible and made another mark at the peak height of their jump and arched.

**Score:** The score was the vertical distance between the reach and jump and reached marks recorded in centimeters.

### Reaction time Test

**Test Administration:** The timer has three colour (green, red, yellow) lights respectively and three switches for each light. The investigator set the apparatus in such a way that either red or green or yellow. The subject was asked to respond only to the red light. The red light was presented 10 times at random. The subject was seated in an ideal distance. After the caution "ready", the investigator switch on the light, which light that glows the player should press the respective buttons.

**Scoring;** The subject was given ten chances at random. The highest and the lowest scores were eliminated and the scores were noted average of the rest eight was noted as the final score.

## STATISTICAL TECHNIQUE

To find out the relationship between the criterion variable reaction time and the independent variable explosive strength the Pearson Product moment Correlation (Raw score Method) was used by the investigator as suggested by Harrison Clarke

## RESULTS AND DISCUSSION

### RESULTS

The results on reaction time and explosive strength are presented in Table I.

**Table I: Results on Relationship Between Reaction time and Explosive Strength among Boxers**

Variables	N	Mean	Obtained 'r'
Reaction Time	20	0.417	0.141
Explosive Strength	20	53.30	

Required 'r' value at 0.05 level 0.433

Not Significant

The results presented in Table I proved that there was no significant relationship between reaction time and explosive strength as the obtained 'r' value of 0.141 was lower than the table 'r' value of 0.433.

## DISCUSSIONS

The results presented in Table I proved that there was no significant relationship between reaction time and explosive strength of the boxers as the obtained correlation value was not significant and the formulated hypothesis was rejected at 0.05 level.

## CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusion was drawn:

It was concluded that there was no significant relationship between reaction time and explosive strength of the boxers.

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## IMPORTANCE OF GAMES IN STUDENT'S LIFE

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### ABSTRACT

**"All work and no play makes Jack a dull boy".**

In students life extracurricular activities empower them to make their own active decisions and also help them to gain an accurate experience, skills, and confidence to lead them on the path of their future. It is truly considered that through participation in sports and different games, students learn co-operation, teamwork, leadership methods and time management. Games also help students by discovering their hidden talents, help them interact with different people and make them learn about many things outside their own environment. Well, they are also an easy and interesting way to learn appreciation for new different activities. There are some types of games like billiards, board games and golf etc which are considered recreational activities and they increase our mental, physical skills while enjoying the excitement of our shots. In real sense, games affect a person's psychological state of mind which leads to excitement and brings out the feeling of one being proud for an accomplishment. It also increases our capabilities and guides us in developing a better understanding of our own-selves.

**Keywords:** Games & Students, Importance of Games

### INTRODUCTION

Games are creative and mindful expression of the human spirit which comes out through the creation of activity that has an entertaining, flexible, instructive and competing element. It explores and test people's skills, efforts and invites them to develop new ways in managing the obstacles which stops them for attaining the game's goal. Games are the positive experience which helps in the strengthening of our body and mind. Some games are also considered as structured activities like cycling, cricket, swimming and football etc which helps us to take active decisions and sharpens our thinking process also.

#### Advantages of Games

**COMPETITION FACTOR:** It generates healthy, fair and strong spirit of competition. It also conducts that positive competition is the best and active way of competition in students life.

**DISCIPLINE FACTOR:** It makes the child more active, patient and disciplined.

**UNITY FACTOR:** It teaches us about teamwork, sense of belonging and unselfish play. And also it encourages us to play for team rather than for our personal accomplishment.

**STRENGTH FACTOR:** It keeps our body in good shape and always give strength to our physical fitness. It also tones up muscles and strengthens the bones of our body.

**CONFIDENCE FACTOR:** It boosts our morale when we perform and also when we excel towards particular skills. On other hand it improves our self-esteem and body postures as well, which makes us feel more confident and determined.

**ENERGY & BUILDING FACTOR:** It improves our body immune system which gives us good health and body. It also channelize and maintain our physical and mental energy in a more strong, active and positive manner. It gives us lot of inspiration and energizes our body. Games and Sports give us encouragement to face all the hard challenges of life. It provides us physical strength which is always needed for doing our work. It is conducted that without games, people usually becomes dull, boring, pessimistic and failure in life. There are different types of games and sports in life, but few of them are very much significant like running games –



rugby, football, hockey and race etc which develops our agility power. Another is jumping games like – volleyball, badminton and basketball etc which increases our height and also reduce our weight. Well, both games are also an important part of education and help the students in the development of the physique and mind. Games teach us value of discipline and sportsmanship in life. It also helps in the development of our character and positive outlook. Well, syllabus of schools and colleges should be planned in such a manner that studies and games can be balanced for developing out the personality of the students. Games have great and significant value in student's life. It is truly believed that the foundations for good and successful life are laid in the school always. The sport field and medium of different games teaches many optimistic things to the student's in life. It also develops strong physique, team spirit, valiant will-power, sportsman ship, cheerful nature, good sense of humor and positive attitude among students. Well, all these are important and useful traits of successful and meaningful life. All the students should study properly and diligently and still take parts in games and sports to achieve an all-rounder and ideal personality in their life. In the field of sports a student learn etiquettes, manners, positive attitude and also the capacity to face victory and defeat in a good spirit. This spirit gives an impartial and unbiased outlook in-front of all others. Games play an important and valuable role in student's life. The essence of games in student's life is for providing them a creative environment which promotes their individuality, mental ability, thinking power and their all efforts came into existence. Games always enhance the abilities and skills of children and develop their challenging spirits. It helps us in the development of healthy mind and fit body. It is truly observed that healthy mind resides in a healthy body, so games should be practiced on a regular basis among all the students. Games and sports are a necessary part of education. The students can build their health in good shape by playing different games. It is truly said that Education without games is incomplete. It teaches us discipline, patience and sportsmanship. It also provides a good excitement and enjoyment in the dull and boring life of students. The aim of education is the all-round development of a complete personality of a person so, physical aspect of a student should not be neglected. As, we all know that development of mind and body are equally important in the way of good education. Games and sports are an integral part of education that's why without physical training, exercise and games – education will be incomplete at all. Well, along with the education, games also prepare all of us to stand up and face all the hard challenges of life. While playing games, students will be taking good intake of oxygen, their blood circulation will increase and greater digestion will be there. Games and sports teach the students to co-operate with one another and achieve success in life. They develop our skills and abilities to get the best and maximum output from us. They also teach us values of obedience, manners and strict discipline. It is quite very important for all of us to follow all the rules and regulations of games because it helps us for becoming professionals, good leaders and disciplined citizens. It teach us fair play and to keep faith in equality and justice. They also enable us in a positive manner to take defeat and victory both in a cheerful and appreciating way in life. Games also provide us the best use of our leisure time. They are proved real boon and blessing for all students. Games also develop and promote patriotism and national integration among people in various different forms of playing.

**Conclusion:** It is the responsibility of schools and college administration to train all the students in different games and sports from the level of primary section. It is conducted truly that books develop our mind, but games develop our body. Games and sports are the best medium for achieving all the targets of education and health in schools and colleges. Rather than education, games also provide mental, physical, emotional and psychological development of an individual student. For bringing up a healthy spirit of competition among the students, for building up decision making skill and also to ensure all-rounder personality of a student – games and sports have been introduced and are applicable now in every school and colleges.

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## IMPORTANCE OF SPORTS & GAMES IN SCHOOL

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### ABSTRACT

The importance of sports and games in school encompasses more than just the benefit of physical activity. Increases in self-esteem and mental alertness make school sports and games necessary for every school age child. Although the benefits of school sports abound, with a diminishing economy, many schools are cutting out sports and physical education programs to the detriment of students nationwide.

We cannot live without food and drink. Similarly, our health will break down without exercise. It is undeniable that school life is the suitable time to learn to participate in games and sports, because school provides the environment to encourage the students for games and sports.

**Keywords:** Games & Sports – Its Importance

### INTRODUCTION

We cannot live without food and drink. Similarly, our health will break down without exercise. It is undeniable that school life is the suitable time to learn to participate in games and sports, because school provides the environment to encourage the students for games and sports.

Games can be both outdoor and indoor. Outdoor games include hockey, cricket, basket ball, football and lawn tennis. Since we attach too much importance to books in school, we seldom get any opportunity to do much manual work in the open air. Our minds are cheerful when we take regular exercise in the open air. Our health also improves.

Games and sports are necessary after long hours of tedious study. "All work and no play make Jack a dull boy." This proverb suggests the merit of games and sports. We should adopt such games which would suit to the Indian climate.

Nowadays the ancient games of Indian have been replaced by the games of western nations. There was a time when games like rowing, hunting, swimming and wrestling were very popular games. India is the mother of hockey. But now cricket has become very popular. There are many indoor games such as table tennis, chess, etc. At school, students play table tennis. Chess requires intelligence. The students who play chess apply their brain-power rather than physical power.

The games and sports develop a team-spirit among the students. The students also learn how to work together, under a captain. Students learn the spirit of obedience, discipline and fairness. These virtues are learnt better through games than through books.

Games and sports have immense impact upon the character of the youngsters. The captainship of a game requires honesty and wisdom. A true sportsman stands for honesty and judgment. Before independence the role of games and sports in educational institutions was limited.

Thus, the health of the students and of the nation was affected. But now the games and sports have been given special status in educational institutions.

### Benefits

According to Theodore Hesburgh, author of "The Importance of School Sports and Education," it is imperative for school age children to have access to sports and games. Not only does it empower youth and promote higher self-esteem, it also motivates students, enables them to earn better grades, especially in schools where obtaining certain grades is a pre-requisite to staying on the team. Numerous physical benefits include



maintaining a healthy weight, preventing chronic diseases and learning the skills necessary to maintain a healthy lifestyle after graduating.

## **Considerations**

Promoting physical activity should start from the nursery room, according to Jean Zimmerman and Gil Reavill, authors of "Raising Our Athletic Daughters." Promoting athletics as a parent is a crucial factor in determining whether your child will be interested in participating in sports. Playing with your child, whether throwing a football or baseball with your son, or teaching your daughter how to swim, teaches them the importance of being active. Encouraging your school-age child to participate in a sport of their choice may be the reason they continue to play when they enter school.

**Warnings.** Some children do not consider themselves athletic and may prefer not to play organized school sports. They may be cut from the school team for lack of ability. For this group, there are intramural teams, which are sports for those not interested or able to play higher level athletics. It is important to remember in these cases not to make your child feel badly about not being a higher level athlete, but to remember the more important benefits of playing sports, and encourage them in this endeavour.

## **Significance**

With a tough economy, many schools are cutting spending for sports and athletics programs. Because of the many benefits of sports, it is imperative to continue the athletic programs available to children. As a parent it may be necessary for you to become involved on the school board to have a say about keeping athletic programs. Encouraging your child to speak up about their desire for athletics may also affect whether your school keeps their sports or cuts them out of the budget.

Sport and opportunities of play, consistent with the rights of the child to optimum development, has been identified by UNICEF as among the crucial components to the delivery of quality education. Without sports, elementary education would be boring and lifeless for young school children. In fact, sports are vital in the very young lives of kids as it gives them a lot of things to learn about life aside from entertainment and cool moments with friends. Immersing kids in various sports is truly a valuable Endeavour for the things it could bring to children is priceless and even valuable as they get older.

The first reason why children should be encouraged to get involved with sports is discipline. It is a fact that physical training and exercises help to inculcate discipline. Every game or sport has its own set of rules. One has to follow them scrupulously. Martial arts like karate, taekwondo, judo, etc. make kids well disciplined. Further, sports and games give the youngsters an opportunity to lead as well as be lead. Thus, sports help to bring out and nurture the qualities of leadership.

The second reason is sports build a spirit of teamwork as most sports are played by two or more persons. In other words, playing and participating in sports is a social game wherein children get to know how to get well with other children. It would give them a blazing start since actual work in the real world requires workers or employees who know how to blend well with the work environment that consists of various employees, superiors and norms and standards that all of the people within the workplace should adhere to. A good team player knows when to step up when the goings get tough, and knows how to play the role of a reinforce when at the sidelines. Ballgames like football, basketball, volleyball, etc. inculcate the essence of being a good team player.

The third reason is respect. Kids would know the word respect the moment they are immersed with sports. They learn how to learn from the cues handed by their coach and will also accept suggestions from their teammates. All kinds of sports teach the value of respectfulness.

The fourth reason is sportsmanship. There is a saying "You win some, you lose some, it balances out at the end". Sportsmanship teaches kids how to be strong and to be strong still even when defeat is on hand. Learning how to be humble when humbled is truly a great experience that kids should go through, for when they grow older they will be able to accept failures and mistakes. Doing necessary improvements and adjustments in life will help them become persistent and they would learn not to repeat same mistakes from



the past. The fifth reason is preparation. To win in a game intensive training and careful planning is required for "practice makes perfect". If a child needs hours to perfect his free throws in basketball, he should be allowed to do so as it will also boost his perimeter shooting. Similarly, if a child needs to swim better to rip existing records, he should be allowed to swim for several hours, as this will not only bolster his chance of lowering records but can also help him improve his endurance. It should be noted that the same principle applies to real life careful and thorough preparation is necessary in order to be almost perfect in executing every plan.

The sixth reason is determination. Sports improve the perseverance of kids. In order to win, a player should value hard work and patience while practicing crafts that will help him gain distinct edge in carving out success.

The seventh reason is health. It is possible to imbibe the value of health in children through sports. Children can be made to feel and realize the value of holistic lifestyle by making them indulge in different sports. It will open different avenues for healthy eating, exercise, ample rest and having enough sleep.

The final reason is competitiveness. Striving to win in every field can be surely built around playing sports. Willingness to give an all-out effort, showing grace under pressure and ability to accept defeat when losing to a better team or a player, are good indications of true competitive nature that a well-rounded player can extract from playing sports.

Thus, the importance of sports in the life of a young student is invaluable and goes much further than the basic answer that "it keeps kids off the streets". Sports impart lessons that are essential in the life of a student. They play a pivotal role in the makeup of a young child, especially in the middle school to high school years where students are much more mature and mentally developed. Important values like discipline, responsibility, self-confidence, sacrifice, and accountability are not shown on Television, the Internet, or radio. It is up to the parents, teachers, sports teams, clubs, and after school programs to help mold, develop, and inject these qualities into the lives of students.

## **CONCLUSION**

In order for this to happen, school sports programs must have a few components in place. The first thing they need is a good core of coaches that understand the great responsibility that is placed upon their shoulders to help shape and prepare their students not only in sports, but in their everyday lives. It is important that support should come from the community and administration. Students need to know they are appreciated and there is no greater way than for the community to get involved in youth sports.

Nowadays, parents as well as teachers seem to give less importance to sports. This is because they want their children to become either engineers or doctors. They tend to forget that all study and no play would affect the shaping of the child's personality. It is well known that only a sound body can boast of a sound mind. To fulfil this, sports should be included in school curriculum.

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## EDUCATIONAL VALUE THROUGH GAMES AND SPORTS

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### Abstract

"Sports and physical education provide the foundations necessary for the development and well-being of younger people in society and the educational system."

The aim of this paper was to confirm an improvement in the values of self-control and integration of an intervention program for at-risk youth through physical activity and sport. The qualitative techniques used for data collection were: questionnaire, personal interview, group discussion, polarity profile, class diary and sociometric test. Physical activity and sport are undoubtedly key phenomena in contemporary society. Whether as a healthy practice or mass entertainment, they are an omnipresent part of our contemporary life style. One of the key challenges facing physical education in the 21st century will be to give significant attention to disadvantaged groups like "youth at-risk". These are marginal populations that, though they have always been there in our midst, have not attracted society's attention in the past.

Key Word: values education, youth development, underserved youth, sport programs.

### INTRODUCTION

"Sports and games along with education prepare us to stand up and face the challenges of life."

Physical activity and sport are undoubtedly key phenomena in contemporary society. Whether as a healthy practice or mass entertainment, they are an omnipresent part of our contemporary life style. One of the key challenges facing physical education in the 21st century will be to give significant attention to disadvantaged groups like "youth at-risk". These are marginal populations that, though they have always been there in our midst, have not attracted society's attention in the past.

Healthy mind can be found only in a healthy body. In a weak body there cannot be a healthy and active mind. And for a healthy body physical exercise is a must. Without physical exercise, our body will grow weak, lethargic and dull. The aim of education is the all-round development of a personality. It cannot afford to neglect the physical aspect of a student. Development of mind and body are equally important in any good education. Want of proper physical exercise in the form of games and sports develops many mental problems. Mere intellectual attainment is not enough. Good health and sound body are also a must to face the challenges of life. Therefore, games and sports are an integral part of school education. Education will remain incomplete without physical training and exercise. "All work and no play makes Jack a dull boy" is a famous saying. After studies some kid of physical exercise, games and sports are necessary. The refresh body and mind and provide recreation. A game of football or volleyball in the open air is very refreshing. A game of hockey or a match of badminton will help a student regain his lost mental and physical energy. There will be greater intake of oxygen, better blood circulation and digestion because of these. In the open, where games are played there is fresh air, openness and presence of nature. They have a very healthy influence on the players. Running, Jumping, kicking, swimming etc. provide vigorous exercise to our limbs and organs of the body. They provide us physical fitness, courage endurance, cooperation and team spirit. The players are more disciplined and fit than others.

Games and sports are a valuable form of education. They develop our skills and abilities to the maximum. They teach discipline, obedience and cooperation. Every game has its own rules and regulations. They are binding on the players. All players have to follow them. There is penalty on their violation. One can never win a match without following the laws of the game. He has to abide by the judgement of the referee. It teaches a player



how important are laws. It makes clear how important it is to follow the rules and regulations games and sports help us in producing very disciplined citizens, leaders and professionals. They teach how to cooperate with one another and achieve success. It is a playground or gymnasium where team spirit, cooperation and endurance can be taught best, games teach players how to ignore individual interests for the sake of greater interests of the team and society. This teaching of sacrifice is of great social and national interest. Games also teach fair play and faith in equality and justice. They enable us to take defeat and victory in a cheerful spirit. Games also allow an outlet to our suppressed energy. It helps us a lot in remaining peaceful and non-violent. When our energy is suppressed we become irritable, short-tempered, violent hooliganism and acts of lawlessness. Games also provide us the best use of leisure time.

Famous players and sports persons bring credit for themselves and the country. They are famous and popular and work as country's cultural ambassadors. They strengthen international relations. They also develop and promote patriotism and national integration. They should not be practiced at the cost of studies.

While sport is gaining in importance in society and social development, it is also considered a social and cultural phenomenon that goes beyond sports facilities, stadiums and other areas where it is practiced. In fact, the spectacular development of sport through the media and its popularity, able to attract massive numbers of fans with diversified interests, lead inevitably to greater consideration of its educational role, to convey messages. Educational systems constitute the basic foundations for building physical and mental well-being, as expressed as a healthy mind in a healthy body.

### **Civic foundations**

Another educational aspect, as important as physical and mental well-being, is related to the inherent values that sports transmit:

- respect for rules
- rejection of cheating, meaning to seek victory at any price
- respect of the winner for the loser, as well as the loser's acceptance that the winner is the best at that moment .These civic and democratic foundations forge the values for living together in diversity and respecting differences. Sports stir up passion and excess, unfortunately highlighted by the media and the news, which tend to obscure the essential aspect: an athletic encounter allowing us to surpass ourselves and do our best in peak condition.

### **CONCLUSION**

The values promoted by sport and athletes concern us all, children and adults alike. In the exhibition they are expressed through various topics: sport as a tool for peace, as a universal language to facilitate dialogue between communities.

When education is said to be "experiential", it means that it is structured in a way that allows the learner to explore the phenomenon under study – to form a direct relationship with the subject matter – rather than merely reading about the phenomenon or encountering it indirectly. Experiential learning thus requires that the learner play an active role in the experience and that the experience be followed by reflection as a method for processing, understanding and making sense of it.

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## ACUTE EFFECT OF YOGA ON PERFORMANCE OF BASKETBALL PLAYERS

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**Abstract:** In this paper we presented the effect of yoga exercises on basketball players. We studied the effect on 25 players of age group 17-20 years. The experimental group consist of 13 players dealt in accordance with the proposed set of yoga exercises, which were used in the introductory, preparatory and final part. In the main part of the problem solved basketball directions. Classes in both groups were conducted 4 times a week for 2 hours for 9 months. Found that the use of exercises yoga pose direct impact on the physical indicators of preparedness players. Found an increase in the level of indicators: vertical jump, speed endurance, speed, retention of equilibrium (balance), free throw, with the movement, three-point shots, free throws, tactical execution.

**Keywords:** basketball, college students, yoga, training, physical.

### Introduction

Basketball players put extreme stress on their bodies during practices and games. This repetitive overuse of certain muscle groups will cause imbalances, where one muscle is overactive and its complimentary muscles are underactive. Tighter muscles pull specific joints out of alignment and some of the best athletes get nagging injuries due to other areas of the body overcompensating for the immobile joints. Yoga is designed to put player's body in specific positions and postures that lengthen the tight muscles (usually the hip flexors, low back, quads) and strengthen the more underused muscles (glutes, abs, rhomboids) for building safe and athletic movement. Yoga and exercises methods can directly influence on optimization of all kinds of sportsman's or team's training. Distinctive feature of yoga, which is of great interest for sport specialists [1, 2, 3, 4], is detail development of sportsmen's perfection techniques for mastering of muscular relaxation art, techniques of reasonable breathing and concentration of attention.

As domestic and foreign specialists think [5-11], yoga can give increasing of strength, endurance, pure consciousness, calmness and more sound sleep to basketball players. Some researches [1,2,6 ] specify, that regular practice of different yoga postures (asanas) as well as breathing exercises (pranayama) help to strengthen muscles, develop qualitatively new power and improve muscular elasticity and mass. As a result strength and endurance of organism in general are improved, but not only of separate muscular groups and it renders additional effectiveness in trainings and competitions. For basketball players it is very important to control body. Owing to yoga practice, one can develop excellent balance, which facilitates better control of movements, its position in space and, in its turn, improves technique and coordination of movements [1].

One of the most known pluses of yoga is development of profound and steady flexibility that is very important for basketball. Good flexibility helps to avoid traumas, increases amplitude of movements (i.e. improves technique), makes muscular work more energy saving and effective owing to increased muscular elasticity .

Thus, it is assumed that physical training for maintaining optimal physical condition, technical training for improvement of sportsmanship and tactic training, oriented on development of strategic and tactic skills can be improved with the help of yoga exercises, which, at the same time, harmoniously influence on mind and body.



The present work makes urgent the problem of yoga exercises' introduction in training process of student team's basketball players, while study of yoga influence on sport preparedness would help to solve this problem.

## Purpose, tasks of the work, material and methods

The purpose of the research is to determine influence of yoga exercise on preparedness of student team's basketball players.

## Methods and organization of the research.

In the research we used such methods as study, analysis and generalization of literature and documentation, dealing with the problem of our research, pedagogic observation, testing of physical and technical-tactic preparedness. The research was organized on the base of National University of bio-resources and nature utilization of Ukraine. The research involved 25 players of student's combined basketball team, of 17-20 years old age. For determination of preparedness level of the players we used commonly known test exercises (see table 1).

No	Preparedness	Test exercises		Unit of measurement
1	Physical	T1	No-step Vertical Jump)	Cm
		T2	Shuttle run 2x40 s	M
		T3	3/4 Court sprint, 20 m	Sec
		T4	Lane agility test)	Sec
		T5	Curl	Quantity of repetitions
		T6	Flexibility (Sit and reach test)	Cm
		T7	Standing Balance Test	Sec
2	Technical-tactic	T8	Free throws per 1 min.	Trials/hits
		T9	Throws in movements per 1 min.	Trials/hits
		T10	3 scores throws per 1 min.	Trials/hits
		T11	Penalty throws per 1 min.	Trials/hits
		T12	Fulfillment of tactic task in game (per 10 min)	Trials/ correct fulfillment

## 1. Complex of yoga exercises for introductory and final parts:

- Crossed-legged posture and meditation during 3-5 minutes;
- Forward bend from sitting position;
- "cobra", "locusts", "bow", "plough";
- Turn;
- Shoulder stand;
- "fish";
- Abdomen draw-in;
- Meditation in sitting position with breathing exercises, "immovable posture";
- Relaxation posture;
- Re-activation, including several deep inhales, straightening in sitting or standing position, arm exercises.

## 2. Asanas postures of preparatory part for balance and concentration:

- "Tree" posture;
- "dancing posture";
- "balance";
- "crow";
- "T" posture;



- Bending knees posture;
- Tip-toes posture;
- Legs' stretching standing;
- "eagle" posture;
- "triangle" posture;
- "Dog" posture with head downward;
- "Crescent" posture.

With selection of yoga exercises, recommendations of A. Kolger were considered [1].

**Table-2. Indicators of basketball players' preparedness after experiment**

Tests	Control group			Experimental group			P
	x	S	Level	x	S	Level	
Test №1, cm	64	0.5	High	65	0.5	High	>0.05
Test №2, cm	388	0.8	Middle	407	1.2	High	<0.05
Test №3, sec	3.04	0.3	Middle	3.01	0.3	Middle	>0.05
Тест №4, sec	13.0	0.4	Low	10.9	0.4	Middle	<0.05
Test №5, rpt	48	1.1	Middle	54.7	0.9	High	<0.05
Test №6, cm	16.1	0.6	Middle	21,3	0.6	High	<0.05
Test №7, sec	21.3	0.4	Middle	51.6	0.4	High	<0.05
Test №8, T/H	15/13	0.9	Above middle	15/13	0.5	Above middle	>0.05
Test №9, T/H	16/14	0.4	Above middle	17/15	0.7	High	>0.05
Test №10, T/H	25/17	0.7	Middle	25/19	0.9	Middle	>0.05
Test №11, T/H	16/15	0.4	Вище серед.	17/15	0.4	Above middle	>0.05
Test №12, T/C f-							
t T/H	7/3	0.2	Middle	7/4	0.2	Middle	>0.05

## Conclusions

Summarizing the above presented we may state that the used yoga exercises directly influence not on all indicators of basketball players' preparedness, but only on physical, especially on flexibility and balance. Alongside with it, we can say that yoga exercises can be widely used in training process of basketball players that was proved by improving of indicators of experimental group players in comparison with control group, where yoga exercises were not applied. However, for better effect it is necessary to select exercises, which would facilitate certain tasks of training process.

Thus, perspective direction of our researches is selection of yoga exercises, capable to improvement of ball throws from the spot and in movement, accuracy of passes, dribbling

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## ROLE OF ENERGY BALANCE IN ATHLETES TRAINING

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### **Abstract:**

Sports nutrition is a science that requires a solid understanding of the nutritional factors effecting performance, recovery and health, a knowledge of the nutritional value of food and fluids, and the necessary skills to implement appropriate nutritional strategies into daily training and competition. A balanced diet will provide adequate nutrients and energy to enhance adaptations from training, support optimal recovery and avoid excessive food-related stress. Heavy training increases the need for nutrients, particularly carbohydrate, protein and micronutrients like vitamins and minerals.

Maintaining energy balance is a key goal for athletes. Energy balance occurs when total energy intake from food matches energy expenditure from daily activity. Energy is provided by the carbohydrate, protein, fat and other nutrients. The energy requirements of an individual are influenced by factors such as body size, body composition goals and the energy cost of training. Carbohydrates remain a key nutrient for athletes. Carbohydrate requirements are largely influenced by frequency, duration and intensity of training sessions and the demands of competition. Protein is needed to support the repair of damaged body tissues and the building of new proteins in response to the training stimulus. A reduced intake of fats and oils and increased intake of fibre-rich foods are recommended. Athletes need to remember that food plays a valuable role in psychological pleasure and social happiness and those foods eaten today can have long-term effects on health well beyond the end of an athletic career. Smart planning is needed to optimise the benefits provided by sports nutrition within the framework of each athlete's unique total energy allowance.

**Key Words:** Nutrition, balanced diet, energy balance.

**Introduction:** Whether you exercise to keep fit, participate regularly in an organized sporting activity, or are training to reach the peak level of your sport, good nutrition is an essential tool to help you perform at your best. Making smart choices about the type, timing and quantity of food to eat can all play a role in realising your best. Many athletes, especially female athletes are chronically energy deficient. This energy deficiency impairs performance, growth and health. Energy balance is not the objective of athletic training. To maximize performance, athletes strive to achieve an optimum sport-specific body size, body composition and mix of energy stores. To pursue these objectives, athletes need to manage fat, protein and carbohydrate balances separately, but it is impractical for athletes to monitor these balances directly, and appetite is not a reliable indicator of their energy and macronutrient needs. To guide their progress, athletes need to eat by discipline and to monitor specific, reliable and practical biomarkers of their objectives. Skin folds and urinary ketones may be the best biomarkers of fat stores and carbohydrate deficiency, respectively. A key priority for athletes is to establish a well-chosen training diet that can be easily manipulated when special situations emerge.

**Energy balance:** Maintaining energy balance is a key goal for athletes. Energy balance occurs when total energy intake from food matches energy expenditure from daily activity. Energy is provided by the carbohydrate, protein, fat and other nutrients in food and fluids. The energy requirements of an individual are influenced by factors such as body size, body composition goals and the energy cost of training. Many athletes are faced with the challenge of achieving very high energy intakes to support extremely high training loads. Other athletes need to restrict their energy intake in order to maintain a low body mass and body fat levels.



Smart planning is needed to optimize the benefits provided by sports nutrition within the framework of each athlete's unique total energy allowance.

## **Carbohydrate:**

Carbohydrate is considered the body's most efficient fuel source. It serves as a primary energy source in the diet and provides 4 calories per gram. Carbohydrates are increasingly vital during high-intensity exercise when the body cannot process enough oxygen to meet its needs. The most important carbohydrate for an athlete is the complex carbohydrate, starch. Starch is the major energy source in the diet and is broken down into glucose in the body that can be stored in the liver and in the muscles as glycogen. Glycogen can then be used to maintain blood sugar at a constant level for optimal energy supply. Common starches include bread, cereal, pasta, and other various grains, but also corn and peas

## **Dietary Reference Intake (DRI)**

The minimum recommended intake of carbohydrates necessary for survival is 130 grams or 520 kcal per day. But a minimum intake of carbohydrate is about 250 g or 1000 kcal per day for athletes is recommended. Carbohydrate recommendations vary with the sport as well as individual metabolic needs. Most athletes should consume 6-10 grams of carbohydrate per kilogram of body weight per day (3-5 gm/lb). Athletes participating in heavy exercise, specifically endurance athletes (bikers, marathon runners, triathlon athletes etc.), may need to increase their carbohydrate consumption up to 70% of the daily caloric intake.

## **How Much Carbohydrate to Eat and When for Exercise**

The amount, timing, and kind of carbohydrate consumed can determine the physical performance of an athlete. Although specific sports have different energy needs, carbohydrate is the most important source of energy to support the demand of all physical activity. For example, one carbohydrate rich meal before exercise will not greatly impact the performance if all other meals eaten in the days and weeks before are inadequate in carbohydrates.

**Before exercise:** It is important to consume carbohydrates to optimize glycogen stores.

### **2 to 4 hours before exercise**

Consume a meal rich in carbohydrates 2 - 4 hours before exercise. This time is needed to allow for digestion and prevent heartburn.

- Consume about 400 - 800 kcal, of which 250 - 500 kcal (65 - 125 grams) are carbohydrate. This provides energy to prevent hunger during the physical activity without feeling overly full.

### **1 to 2 hours before exercise**

- At this time the key is to prevent hunger and indigestion before exercise. To prevent hunger, consume a carbohydrate replacement beverage, a low-fat smoothie, or fruit and a few low fat crackers.

### **Less than 1 hour before exercise**

- If only 1 hour remains before exercise only water and fluid replacement beverages are recommended.

### **5 to 10 minutes before exercise**

- If hunger sets in a few minutes before exercise a simple carbohydrate COULD be consumed if the duration of the exercise is short.

- If the duration of the exercise is long, simple sugars should be avoided, instead a sports drink might be suitable.

## **During exercise:**

For exercise lasting longer than 90 minutes, consuming carbohydrate 30 minutes into the workout will allow for longer and more intense exercise. The goal is to consume 15-30 g of carbohydrates every half-hour depending on type of exercise and intensity. Do not wait until you get tired to start consuming carbohydrate.

## **Recommended sources of carbohydrate to eat or drink during exercise include:**

- fluid replacement drinks, energy gels,
- other sources of easily digested carbohydrate such as fruits



•energy bars with <5g of fibre, <4g of fat, and <5g of protein Note: some energy bars contain over 200 kcal and are high in protein (>20% of DV), which are digested slowly, thus are not ideal for consumption DURING exercise.

## **Protein in the diet:**

Proteins provide energy in late stages of prolonged exercise. When muscle glycogen stores fall, as commonly occurs in the latter stages of endurance activities, the body breaks down amino acids found in skeletal muscle protein into glucose to supply up to 15 percent of the energy needed. Unlike carbohydrate and fat, the body does not generally store protein, thus it is essential in the diet. Proteins vary in quality and are found in a variety of foods. A high quality protein, also known as a complete protein, contains all eight essential amino acids. A low quality or incomplete protein, on the other hand, is missing one or more of the essential amino acids. Complete proteins often come from animal sources such as beef, poultry, fish, eggs etc., whereas incomplete proteins usually include fruits, vegetables, grains, and nuts.

## **Recommended protein intake**

Protein is an important nutrient for athletes because exercise breaks down muscle proteins, which require repair and restoration. Although protein does provide calories, unlike carbohydrates, it is not a preferred energy source for exercise. If protein is used as an energy source, repair and restoration of muscle may be compromised. Many athletes believe that consuming large amounts of protein will increase muscle mass. However, muscle mass and strength can only increase as a result of physical activity and NOT excess protein consumption. In fact, excess protein consumption could be converted and stored as fat in the body. Protein consumption does play an important role in the post exercise meal where it optimizes glycogen storage and promotes muscle repair and restoration. The recommended protein intake is 0.8 g/kg/day .However; athletes may have different needs depending on the duration and intensity of exercise, and frequency of training. Strength training athletes need about 1.4-1.8 g/kg/day and endurance runners need about 1.2-1.4 g/kg/day due to the stress on muscle fibres during exercise. In general, the recommended protein intake for athletes ranges from 1.0-1.8 g/kg/day depending on the energy expenditure and demand of the exercise.

## **Fat in the diet:**

Provides a concentrated source of energy—Fat provides more than twice the potential energy that protein and carbohydrate do (9 calories per gram of fat versus 4 calories per gram of carbohydrate or protein). Fat intake should contribute no more than 35% of the total daily caloric intake to promote health and well-being. Eat lower fat foods more often to keep your fat intake at appropriate levels. Athletes are encouraged to consume the bulk of their calories in the form of carbohydrate (55-60% of kcal) with moderate amounts of protein (15% of kcal) and fat (25-30% of kcal).

## **Importance of fat for athletes**

The energy obtained from fat plays an important role for both high intensity and endurance sports. Fat serves as the primary fuel for low intensity and long duration activities such as marathons, triathlons, and cross country skiing. In high intensity activity, where carbohydrate is the primary fuel, fat is necessary to fully release the available energy in carbohydrate.

Although fat is an available energy source, the use of it as an energy source is limited due to the following factors

- Fat is slowly digested in the stomach, which extends the amount of time until the energy can be utilized.
- Fat can contribute to gastrointestinal discomfort and indigestion during exercise.
- Stored fat in adipose tissue must be broken down and transported to the exercising muscle before the energy is readily available to the exercising muscle.
- Finally, to fully release the energy available in fat requires a greater amount of oxygen, which can be a limiting factor and slows energy availability. Due to these factors, the timing and amount of fat consumption is very important. As a rule of thumb, fat consumption should be kept to a minimum in the meal before exercise and for a snack during exercise. A small amount of fat will contribute to satiety, but not energy for the



exercise. The best time to incorporate healthy fats into the diet is when a bout of exercise is not scheduled within the next 6 hours or so.

#### **How to lose excess body fat:**

If you are overweight and would like to lose excess body fat, the major issue to consider is calories. Even if everything you eat is fat free or low fat, you will not lose weight if you consume more calories than you burn. Carbohydrates and proteins can be converted into fat if they are not needed for energy or protein production. To lose excess body fat, increase physical activity and/or decrease calorie consumption. Try to identify those items that you consume that contain high amounts of calories, and either find lower calorie options or use smaller serving sizes.

**Water:** Water is an important nutrient for the athlete. Athletes should start any event hydrated and replace as much lost fluid as possible by drinking chilled liquids at frequent intervals during the event. Chilled fluids are absorbed faster and help lower body temperature. Water is key to life. Humans can survive more than a month without food, but only a few days without water. Water is found inside and outside cells and circulates in the blood. Our body consists of about 60-65% of water; for a 150 pound person, this represents approximately 90 to 98 pounds of water.

**Role in the diet:** Water comes from more than just fluids, it is a major component of many foods. In fact, it is estimated that 20% of our water needs are met through food, not fluids. Foods with high water content add volume but minimal calories to the diet. Thus, these foods high in water are known to promote a feeling of fullness. Fruits and vegetables are two food groups that have generally high water content. Even meat, bread, and dairy products contain some water.

#### **Example of fruits and vegetables high in water include:**

**Fruit:** Watermelon, Citrus fruits, Grapes, Apples, Papaya, Strawberries, Apricots, Cherries

**Vegetables:** Carrots, Bell peppers, Lettuce, Tomato, Cucumber, Squash, Celery, Broccoli, Cauliflower, Spinach

The daily recommended fluid intake is 10-15 glasses (8oz/glass) depending on your age and sex. Athletes need to stay hydrated for optimal performance. Many athletes drink when they are thirsty and fail to hydrate before they become dehydrated. Thirst is a biological indicator of dehydration; however, dehydration has already occurred when an athlete becomes thirsty. Even a small drop in body fluids (1% of body weight, or 1.5 pounds in a 150 pound person) can impair performance. After exercise the goal is to fully replace any fluid and electrolyte deficit. How aggressively an individual rehydrates depends on the degree of dehydration and/or the length of time until the next bout of exercise. If the degree of dehydration is not severe and time permits, consumption of normal meals and snacks with sufficient volume of plain water will restore hydration status. For rapid and complete recovery from dehydration an individual should drink approximately 3 cups of fluid for every pound of body weight loss. Consuming sodium (in beverages or snack items) during the recovery period will help retain ingested fluids and stimulate thirst.

**Vitamins:** Increased caloric intake through a varied diet ensures a sufficient amount of vitamins and minerals for the athlete. There is no evidence that taking more vitamins than is obtained by eating a variety of foods will improve performance. Thiamine, riboflavin and niacin (B vitamins) are needed to produce energy from the fuel sources in the diet. However, plenty of these vitamins will be obtained from eating a variety of foods. Carbohydrate and protein foods are excellent sources of these vitamins. Furthermore, the B vitamins are water soluble and are not stored in the body, so toxicity is not an issue. Some female athletes may lack riboflavin, so ensuring adequate consumption of riboflavin-rich food is important, like milk. Milk products not only increase the riboflavin level but also provide protein and calcium. The body stores excess fat-soluble vitamins A, D, E and K. Excessive amounts of fat-soluble vitamins may have toxic effects.

**Minerals:** They play an important role in performance. Heavy exercise affects the body's supply of sodium, potassium, iron and calcium. Sweating during exercise increases the concentration of salt in the body. Consuming salt tablets after competition and workouts is not advised as this will remove water from your cells, causing weak muscles. Good sodium guidelines are to: 1) avoid excessive amounts of sodium in the diet and 2)





beverages containing sodium after endurance events may be helpful. Eating potassium-rich foods such as oranges, bananas and potatoes throughout training and after competition supplies necessary potassium.

Iron carries oxygen via blood to all cells in the body and is another important mineral for athletes. Female athletes and athletes between 13 and 19 years old may have inadequate supplies of iron due to menstruation and strenuous exercise. Female athletes who train heavily have a high incidence of amenorrhea, the absence of regular, monthly periods, and thus conserve iron stores. Iron supplements may be prescribed by a physician if laboratory tests indicate an iron deficiency. Excess iron can cause constipation. To avoid this problem, eat fruits, vegetables, whole grain breads and cereals. Calcium is an important nutrient for everyone as it is important in bone health and muscle function. Female athletes should have an adequate supply of calcium to avoid calcium loss from bones. Calcium loss may lead to osteoporosis later in life. Choosing low-fat dairy products provide the best source of calcium.

## **Conclusion:**

Athletes achieve peak performance by training and eating a variety of foods. Athletes gain most from the amount of carbohydrates stored in the body. Fat also provides body fuel; use of fat as fuel depends on the duration of the exercise and the condition of the athlete. Exercise may increase the athlete's need for protein. Water is a critical nutrient for athletes. Dehydration can cause muscle cramping and fatigue. Becoming an elite athlete requires good genes, good training and conditioning and a sensible diet. Optimal nutrition is essential for peak performance. Nutritional misinformation can do as much harm to the ambitious athlete as good nutrition can help.

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## COMPUTER VISION TECHNIQUE ON SPORTS

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### Abstract

A method based on computer vision technologies is presented to achieve the function that the simulated motion in sport simulation system and the motion in sport video are presented on the same screen and at the same view point. The proposed method first applies the camera self-calibration theory to obtaining camera intrinsic parameters in sport video according to the 2D video features correspondence. Next it makes use of the feature 3D reconstruction to get a feasible estimation of extrinsic parameters. The extracted camera parameters information is applied to sport simulation and training system to achieve the function that the simulated normal motion of 3D virtual athlete in sport training system and the athlete motion in sport video are presented on the same screen and at the same view point. So we can quickly and accurately find the difference between the athlete motion in sport video and the simulated motion. It is very helpful to coaches and the training of athletes.

**Keywords:** Sport video, camera calibration, camera reference frame, extrinsic parameters

### Introduction

The simulation and analysis of human motion is a popular issue in simulation area. It is highly valued in sport motion training and analysis. Video is the main record form of athlete train. It is significant if we put the athlete motion of video and the normal motion of 3D virtual athlete of simulation system into the same screen because we can easily and accurately compare the difference in them and it will greatly benefit the athletes so that they can compare their motion with the normal motion of 3D virtual athlete and improve their competition level. While the motion of 3D virtual athlete can be observed from different view point and the appearance will be different, the comparison is rather difficult. In order to ensure the view point from which we watch the motion of virtual athlete in the simulation system and the view point of the sport video are the same, we have to adjust the view point of the simulation system by hand. It will usually become inconvenient and inaccurate. This shortcoming prevents the further use of human motion simulation and training system in athlete training.

With this technique, we can get the camera parameters from sport video and use the camera information to adjust the view point of the virtual camera of 3D simulation system automatically. We have implemented this technique in the trampoline sport simulation and training system and sound results have been obtained. Main contribution is to synthetically use computer vision algorithms such as camera self-calibration and feature tracking in the course of realizing the technique presented here in the sport video.

### Technique Outline

The computer vision technique present here can be widely applied not only in the trampoline sport as we have done but also in diving and gymnastics, etc., if only there are camera motions included in the sport video and the normal sport field can be viewed in it. The computer vision technique will be implemented in two steps:

- Camera intrinsic parameter calibration of sport video. This step includes feature selection, tracking, and camera self-calibration.

•Camera extrinsic parameter is extracted from sport video with feature 3D reconstruction and the view point of virtual camera in the simulation system is adjusted automatically with this parameter into the same view point as in the trampoline sport video.

## Camera Self-Calibration

Camera calibration is traditionally determined by observing a known calibration object. However, there are several applications for which a calibration object is not available, or its use is too cumbersome. For example, in sports training, the data of athlete training is usually stored in video. It is impossible to always put a known calibration object into a gym. Compared with traditional calibration techniques, self-calibration does not require a calibration object with known 3D geometry, but only needs point correspondences from images to solve for the intrinsic parameters.

The calibration method we propose is based on the calibration method that Mendonca and Cipolla proposed. The main steps of the method include:

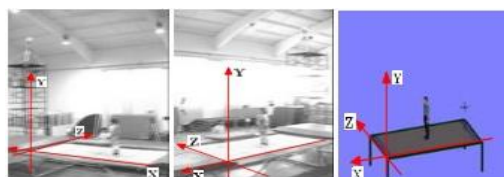
- Extraction and matching of points through the trampoline sport image sequence.
- Estimation the Fundamental matrix between two successive frames.

Based on the two steps above and the essential matrix properties, a cost function is used which takes the intrinsic parameters as arguments and the fundamental matrix as parameters.

## Extrinsic Parameters Estimation

The extrinsic parameters are defined as parameters (rotate matrix  $R$  and translation vector  $T$ ) that identify uniquely the transformation between the camera reference frame and the world reference frame. We realized the computer vision technique in the trampoline sport simulation and training system to compare the athlete motion of trampoline sport video to the normal motion of 3D virtual athlete in simulation system. In order to make the view point of 3D model motion of simulation system appear the same as that in the sport video, we regard the world reference frame in the simulation system and the 3D space of feature reconstruction as the same. The trampoline plane is regarded as XZ plane of the world reference frame. That is, we regard one of the long sides of the trampoline as the X-axis of world reference frame and one of the short sides that intersect with the X-axis side of the trampoline as the Z-axis. The intersection point for the X-axis and Z-axis sides of the trampoline is regarded as the origin of world reference frame. So the Y-axis of world reference frames is the axis that is orthogonal with the X and Z-axis according to the right hand rule. The selection of world reference frame is illustrated in figure1. If we have got the 3D coordinate of three features corresponding with the intersection point of the trampoline sides as A, B and O, we will get the camera extrinsic parameters and then the view point of virtual camera can be automatically adjusted in simulation system.

•The intersection points of the trampoline sides are sure to be textured patches with a large variation of intensity in the two directions  $x$  and  $y$ , some features located at the point intersection are supposed to be automatically extracted in the first frame and well tracked in the successive frame. Select three points that lie at the intersection of the trampoline sides among the successfully tracked feature points by hand. Assume that A is the extracted feature point lying at the intersection of the long and short sides of the trampoline. Make B and O extracted in the same way. The selection of A B and O is illustrated in figure 4. We regard the camera coordinate frames of first image as camera reference frame. And the 3-D reconstruction feature coordinate is referred to the camera reference frame.



The selection of world reference frames.

## Results



We shoot the trampoline sport video from two different view point with digital handle camera. Since we have to extract the intrinsic parameters of the camera, the camera is control to make a slight shake at the beginning of the sport video (because some sport video, such as the videos of diving and gymnastics, has included camera motion in it, the shake will be unnecessary). We can get the camera parameters from the segment of video that includes camera motion and achieve the view point adjustment of the trampoline sport simulation and training system.

Results presented below are organized into three parts. First we present results of the tracking method applied to the two sequences of the trampoline sport images. Secondly we present the quality of the reconstruction of points A、B and O lying in the intersection of the trampoline sides. At last, we present final results of the computer vision technique applied in the trampoline sport simulation and train system.

## Conclusion

A novel computer vision technique based on sport video and have made it work in the trampoline sport simulation and training system. From the experimental results, we find that it works well and has extended the function of sport training system greatly. The technique can extract the intrinsic and extrinsic parameters steadily from the sport video that includes camera motion. It can be used in diving or gymnastics sport training system as well. In the trampoline sports video, we can see that the camera keeps still during the actions of the athletes. While in other sport such as diving, the camera is moving. A future study will aim at the automatic extraction of global motion from sport video real-time and online. And at the same time, we control the virtual camera of sports simulation system so that it can perform the same motion as sport video does.

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## PSYCHOLOGICAL MENTAL QUALITIES EFFECTS ON SUCCESSFUL ATHLETIC PERFORMANCE

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### INTRODUCTION

Psychology is an exciting subjected dedicated to the enhancement of both athletic performance and social, psychological aspects of human enrichment. The Increase stress of competitions cause athletes to react both physically and mentally in a manner That can negatively affect their performance abilities . They may become tense their heart rates, they break into a cold sweat , they worry about the outcome of the competition, they find it hard to concentrate on the task in hand. That has led coaches to take an increasing interest in the field of sports psychology and in particular in the area of competitive anxiety. That interest has focused on techniques that athletes can use in the competitive situation to maintain control and optimise their performance. Once learned these techniques allow the athlete to relax and to focus his/her attention in a positive manner on the task of preparing for and participating in competition. Psychology is another weapon in the athlete 's armoury in gaining the winning edge. Mental game coaching is that the segment of sports psychology that concentrates specifically on helping athletes breaking through mental barriers that are keeping them from performing up to their peak potential. By focusing on the mental skills needed to be successful in athletics competitions. Mental game coaching seeks to achieve the overall goal of performance improvement.

### PSYCHOLOGICAL MENTAL QUALITIES :

1Concentration 2.confidence 3. control 4. commitment (the 4C's) are generally considered the main mental qualities that are important for successful performance in most sports .

S.NO	Psychological mental quality	Human behaviour
1	<b>Concentration</b>	Ability to maintain focus
2	<b>Confidence</b>	Believe in one's abilities
3	<b>Control</b>	Ability to maintain emotional control regardless of distraction

### 1. Concentration

This is the mental quality to focus on the task in hand. If the athlete lacks concentration then their athletic abilities will not be effectively or efficiently applied to the task. Research has identified the following types of attention focus

#### Types of Concentrations :

- 1.Sustained Concentration :Distance running , cycling ,tennis squash
- 2.Short bursts of concentration : Cricket, golf, shooting ,athletics field events.
- 3.Intense concentration : Sprinting events ,skiing

Common distractions are:

Anxiety, mistakes, fatigue, weather, public announcements, coach, manager, opponent, negative thoughts etc.

## STRATEGIES :

Strategies to improve concentration are very personal. One way to maintain focus is to set process goals for each session or competition. The athlete will have an overall goal for which the athlete will identify a number of process goals that help focus on specific aspects of the task. For each of these goals the athlete can use a trigger word (a word which instantly refocuses the athlete's concentration to the goal) e.g. sprinting technique requires the athlete to focus on being tall, relaxed, smooth and to drive with the elbows - trigger word could be "technique"

## 2. Confidence

Confidence results from the comparison an athlete makes between the goal and their ability. The athlete will have self-confidence if they believe they can achieve their goal. (Comes back to a quote of mine - "You only achieve what you believe").

When an athlete has self confidence they will tend to: persevere even when things are not going to plan, show enthusiasm, be positive in their approach and take their share of the responsibility in success and fail.

Mental Imagery to Improve the self confidence :

1. Visualise previous good performance to remind them of the look and feel
2. Imagine various scenarios and how they well cope with them.

Confidence is a positive state of mind and a belief that you can meet the challenge ahead - a feeling of being in control. It is not the situation that directly affects confidence; thoughts, assumptions and expectations can build or destroy confidence.

State of Mind	High self confidence	Low self confidence
Thoughts	Positive thoughts of success	Negative, defeat or failure, doubt
Feelings	Excited ,anticipation, calm, elation, prepared	Tense, dread, fear, not wanting take part
Focus	On self , on task	On other, on less relevant factors (coach ,umpire, conditions )
Behaviour	Give maximum effort and commitment , willing to take chance ,positive to set backs ,open to learning take responsibility for outcomes	Lack of effort, likely to give up unwilling to take risks (play safe ), blame others or conditions for outcome

## 3. Control :

An athlete's ability to maintain control of their emotions in the face of adversity and remain positive is essential to successful performance. Identifying when an athlete feels a particular emotion and understanding the reason for the feeling is an important stage of helping an athlete gain emotional control.

Two emotions that are often associated with poor performance are Anxiety and anger

Anxiety comes in Two forms :

1. Physical : Butterflies, sweating ,nausea, needing toilet
2. Mental : Worry negative thoughts , confusion ,lack of confidence

Technique to reduce anxiety is – Relaxation

When an athlete becomes angry the cause of the anger often become the focus of attention. This then leads to a lack of concentration on the task, performance deteriorate and confidence in ability is lost which fuels the anger-a slippery slope to failure.

## 4. Commitment:

Sports performance depends on the athlete being fully committed to numerous goals over many years. In competitions with these goals the athlete will have many aspects of daily life to manage. The many





competing interest and commitment includes work ,studies, family/partner, social life and other hobbies/sports .An athlete commitment undermined by

- A perceived lack of progress or improvement .
- Not being sufficiently involved in developing the training program
- Not understanding the objectives of the training programme.
- Injury
- Lack of enjoyment .
- Anxiety about performance –competition.
- Coach athlete not working as team.
- Lack of commitment by other athletes.
- Becoming bored.

Setting goals with the athlete will raise their feelings of value, give them joint ownership of the goals and therefore become more committed to achieving them. All the goals should be smarter.

Many people ( Coach, medical support team, manager ,friends, etc ) can contribute to an athlete's levels of commitment with appropriate levels of support and positive feedback, especially during time of injury, illness and poor performance.

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## KINEMATIC ANALYSIS OF INITIAL TAKEOFF PHASE OF NATIONAL WOMEN FOSBURY FLOP HIGH JUMP

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The high jump comprises three distinct phases: the approach run to the bar, the plant and takeoff, and the flight phase and bar clearance. Dapena (1988) observed that the purpose of the approach is to set the appropriate conditions for the beginning of the takeoff phase. The takeoff phase is defined as the period of time between the instant when the takeoff foot first touches the ground (touchdown or plant) and the instant when it loses contact with the ground (toe-off). The peak height of the mass centre during the flight over the bar is dependent on the height and vertical velocity of the mass centre at toe-off. The mass centre height at toe-off is largely dependent on the standing height of the athlete and so the high jumper should therefore strive to maximise the vertical mass centre velocity at toe-off.

The purpose of this study was to analyse the start of the take off technique (planting) of female high jump athletes by biomechanical analysis. The performance of the high jump event is usually decided by many factors such as horizontal velocity and vertical velocity of jump-off, duration of jump-off, change of joint angles. In order to determine the differences in performance between experienced and non experienced high jump athletes, relevant factors were compared. From the data obtained in this study, valuable suggestions can be made to Indian high jump athletes and coaches.

### Methodology

#### Subjects:

Eight female high jumpers were filmed during their competitive performance in the National open athletics championship from 10th September to 13th September, 2012 held at Jawaharlal Nehru stadium, Chennai, India. The best valid and failed jumps were taken from each fosbury flop athlete for the further analysis.

#### Tools and equipments:

Biomechanical analysis requires specific tools and equipment to capture and analyze the data. The experimental apparatus used in this research work were three Panasonic-AG-DVX-102B, F11 sensitivity, high image quality, camcorders, measuring tape and the Quintic Biomechanics v21 motion analysis software and computer system.

#### Collection of data and filming protocol:

For the collection of data three Panasonic camcorders was mounted at a distance of ten meters at height of five feet above the ground. First camcorder was mounted for left foot take off athletes and second camcorder was at right standard line with a distance of 8 meters at a height of 5 feet for right foot take off female high jumpers. The third camcorder was mounted in front of the crossbar with a distance of 15 meters at a height of 5 feet for side view. Three camcorders captured the video clippings of Fosbury flop jumper's last stride. All the attempts of the selected subjects were recorded during the competition. When they cleared the bar on a particular height was taken as successful jump and when they were unable to clear the bar at a particular height was taken as unsuccessful jump. The recorded video clippings were converted in DVD AVI format. Analysis was conducted using the quintic biomechanics V 21 (motion analysis). The variables were selected for

this study were 1) take of leg ankle angle(AA) 2) take off leg knee angle(KA) 3) takeoff leg hip angle(HA) 4) shoulder angle (outside of the cross bar)(SA) 5) elbow angle(outside of the cross bar)(EA).

Acquired data were subjected to statistical analysis by t test between successful and unsuccessful jumps variables. All statistical procedures were conducted using the SPSS 16.0 software. A level of significance was set at 0.05.

## Analysis

The raw data were arranged separately, tabulated and subjected for the descriptive statistical analysis, followed by 't' test by using SPSS (16.0) to distinguish if there were any differences across successful and unsuccessful jumps variables at start of the takeoff phase. The researcher reached at the results of this empirical investigation which is presented by the respective tables and graphs.

**Table. 1: Anthropometric measurements of the female subjects and their best performance**

Athletes	Bib No	Age (yrs)	Height (cms)	Leg length (cms)	Training age (yrs)	Weight (kg)	Best performance in high jump (cms)
Tintu.N.D	131	23	173	93	10	50	170
M.Mallika	684	23	159	84	10	46	170
Siji.N.K	711	24	165	85	10	52	173
K.C.Chandana	366	22	176	89	8	50	170
Sahana.k	706	30	176	94	4	62	184
H.Nishitha	463	32	179	91	2	57	155
Anitha .M	404	19	166	86	6	50	160
G.M.Shalini	877	22	166	89	3	58	165
Mean		24.38	170.00	88.88	6.63	53.13	171.63
SD		3.86	6.15	3.25	2.94	4.70	14.67

The data indicates that the averages, age of the athletes is 24.38 years with an average height of 170cm, average leg length is 88.88 cm and training age is 6.63 years and average weight is 53.13 kg. Among the five Sahana kumari has shown the highest performance of 184 cm.

Table: 2 the subjects mean angles of take off leg and arm during the start of the takeoff phase of success jumps and fail jumps.

Bib No	Ankle Angle		Knee Angle		Hip Angle		Shoulder Angle		Elbow Angle	
	Success	fail	Success	fail	Success	fail	Success	fail	Success	fail
463	104.75	104.31	153.27	159.75	157.62	156.11	76.11	87.99	74.42	75.76
404	115.57	111.27	152.42	154.67	155.69	150.11	67.63	85.43	93.52	89.65
131	105.21	110.02	159.81	161.21	148.60	156.89	78.62	79.72	102.54	103.27
877	106.10	108.11	155.18	147.78	153.02	145.23	79.12	72.19	81.70	78.75
684	115.67	105.03	168.01	171.34	165.17	162.82	86.65	93.47	84.33	75.77
366	124.47	124.15	161.23	168.13	159.69	154.97	69.67	83.44	41.25	43.94
711	123.89	122.97	160.57	148.19	140.11	148.28	81.91	80.00	101.11	92.16
706	120.58	118.40	154.46	162.40	145.93	158.40	72.09	78.93	59.85	50.10
Mean	114.53	113.03	158.12	159.18	153.23	154.10	76.47	82.65	79.84	76.17
Sd	7.30	6.89	4.65	7.56	7.12	5.11	5.66	5.70	18.55	17.94

In the above table majority of subjects' ankle angle at the start of the take off phase was high during successful jumps than that of fail jumps. The majority of subjects' knee angle at the start of the take off phase was low in successful jumps than in failed jumps. The majority number of jumpers' hip angle was high in successful jumps than in failed jumps. Majority number of jumpers shoulder angle was low in successful jumps than in failed

jumps. In case of elbow angle the majority of jumpers elbow angle was high in successful jumps than that of failed jump

**Figure: 1** Graphs showing the difference between the successful and failed jumps.



**Table: 3** table showing the t values.

	AA	KA	HA	SA	EA
t value	0.372	0.299	0.248	-1.92	0.354

\*Significance level at 0.05( 2.365)

Hence according t values there is significant difference between successful and failed jumps

**CONCLUSION AND RECOMMENDATIONS:** The variations in variables may be depended on various factors like take off leg elastic strength as well as consistency of the optimal take off technique. . High performances in high jumping are possible by jumpers who use optimal technique and strength to achieve high vertical variations in the velocity of the CG.

The present results showed that majority of subjects' knee angle at touchdown were lower than elite athletes. Hence it is suggested to extend the knee (up to ideal knee angle 168°) by plant (at touchdown) the take off leg ahead of the body. Every high jumper is necessary to drive the centre of mass as high as possible by keeping the favorable position at start of the take off phase.

The momentum of free limb of arm swing could help in effective take off at the end of takeoff phase hence shoulder angle should be low and elbow angle should be high. In this study the shoulder angle mean was low in successful jumps than that of failed jumps and elbow angle was high in successful jumps than that of failed jumps.



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## PHYSICAL ACTIVITY FOR PEOPLE WITH A DISABILITY: A CONCEPTUAL MODEL

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### Abstract

The promotion of a physically active lifestyle has become an important issue in health policy in the world. Stimulating physical activity behaviour in persons with a physical disability is important. A physically active lifestyle is accompanied by several fitness and health benefits. Individuals with a disability can particularly benefit from an active lifestyle: not only does it reduce the risk for secondary health problems, but all levels of functioning can be influenced positively. The objective of this article is to propose a conceptual model that describes the relationships between physical activity behaviour, its determinants and functioning of people with a disability. The literature was systematically searched for articles considering physical activity and disability, and models relating both topics were looked for in particular. No models were found relating physical activity behaviour, its determinants and functioning in people with a disability. Consequently, a new model, the Physical Activity for people with a Disability (PAD) model, was constructed based on existing models of disability and models of determinants of physical activity behaviour. The starting point was the new WHO Model of Functioning and Disability, part of the International Classification of Functioning, Disability and Health (ICF), which describes the multidimensional aspects of functioning and disability. Physical activity behaviour and its determinants were integrated into the ICF model. The factors determining physical activity were based mainly on those used in the Attitude, Social influence and self-Efficacy (ASE) model. The proposed model can be used as a theoretical framework for future interventions and research on physical activity promotion in the population of people with a disability. The model currently forms the theoretical basis for a large physical activity promotion trial in rehabilitation centres.

**Key words:** Disability, self efficacy, intervention and people with disabilities.





## PHYSICAL, PHYSIOLOGICAL AND PSYCHOLOGICAL FITNESS AMONG MIDDLE AGED WOMEN

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**ABSTRACT:** The purpose of this study was to determine whether adult women who are in a state of high physical fitness are in a good state biologically, in terms of biological and physical fitness ages as estimated by statistical means. The subjects were 65 healthy Japanese women (aged 20-64 years). Biological and physical fitness ages were estimated from the data for 18 physiological function tests and 5 physical fitness tests, respectively, by a principal component model. The correlation coefficient between biological and physical fitness ages was 0.70 ( $p$  less than 0.01), which was generally regarded as a high correlation. Therefore, those who were in a state of high physical fitness were considered to be in good biological condition. This result is in good agreement with the results ( $r = 0.72$ ) from adult men, on whom we reported previously. A statistical analysis to ascertain the relative importance of each contributory variable associated with the variance in biological age suggested that routine clinical evaluation of blood pressure and lipid metabolism might play an important role in determining not only the presence and severity of vascular disease but also the rate of biological aging in women

**key words:** physical, physiological and psychological fitness, study of middle aged women

### I. Introduction :

The status of women in India has been subject to many changes over the past few years. From a largely unknown status in ancient times through the low points of the medieval period, to the promotion of equal rights by many reformers, the history of women in India has been eventful. Aging is inevitable, and as life expectancy increases it becomes more important to understand physiological mechanisms associated with the normal aging process so that quality of life can be sustained. Maintaining physiological function or "health" in an aging population will help to reduce the burden on the existing medical systems as older individuals consume medical services. Physiologists are in the ideal position to develop and test hypotheses of how genetic, molecular, and cellular mechanisms of aging affect human physiology in middle-aged women, genetic factors remain the strongest influence on the amount and distribution of body fat, accounting for up to 60% of the variance. Among the environmental factors leading to total and central obesity, decreased physical activity is more important than energy intake and dietary composition.

### II. Methodology

The selection of subjects, selection of variables, selection of tests, reliability of instruments, reliability of the questionnaires, reliability of the data, tester's competency, orientation to the subjects, collection of the data, administration of the tests, the experimental design and statistical procedures have been presented.

#### II. A. Selection of subjects

The purpose of the study was intended to find out the significant difference between Tamil Nadu and Andhra Pradesh middle aged physical education and non physical education women teachers. To achieve this purpose of the study, one hundred middle aged teachers in Tamil Nadu, and one hundred middle aged teachers in Andhra Pradesh, India were randomly selected as subjects. The age of the selected subjects were ranged from

35 to 40 years. Among one hundred teachers in Tamil Nadu, fifty physical education teachers (PET's) and fifty non physical education teachers (Subject teachers) were selected. In Same way, among one hundred teachers in Andhra Pradesh, fifty physical education teachers (PET's) and fifty non physical education teachers (Subject teachers) were selected. A qualified medical officer of the R.M.M.C. & H, Annamalai University, Annamalai Nagar, Chidambaram, Tamilnadu and District Hospital, Tirupathi, Andhra Pradesh, examined all the subjects. Their written voluntary consent was obtained after clearly explaining the nature of the study and the testing procedures of selected variables under which they would be tested and they were assured that their data would not be used for any purpose other than the present study. They were also assured that the results would be kept strictly confidential.

## II. B. Selection of Variables

The twenty first century people seem to be facing several grave health related problems. Regular physical activity reduces depression and anxiety, improves mood and has been associated with increased ability to perform daily tasks for middle aged women. Apart from the menopause and weight gain "middle age" today is more of a psychological than a physical change. Event such as significant birthdays, the appearance of wrinkles and grey hair, and noticing the adult status and success of much younger women, often prompts a certain amount of life-assessment. Such a period of 'stock-taking' can be positive, provided you do not panic, it often opens the door to a new phase of maturity with an added confidence and creativity and greater awareness of personal achievements, needs and limits. Before proceeding with the study, the researcher had gone through the available literature in the area and had on the basis of his personal experience, discussed the results with his research supervisor. Consultation with the other experts was made to consider the factors of feasibility, availability of proper techniques and instruments, certain variables were selected during this study.

**The criterion variables selected were:**

### Physical Fitness Variables

- Speed
- Cardio Respiratory Endurance
- Strength Endurance

### Physiological Fitness Variables

- Systolic Blood Pressure
- Diastolic Blood Pressure
- Resting Pulse Rate

### Psychological Variables

- Anxiety
- Aggression
- Stress

## II.C. Selection of Tests

The purpose of the study was to find out the significant difference between Tamil Nadu and Andhra Pradesh middle aged physical education and non physical education women teachers on selected physical, physiological and psychological variables namely speed, cardio respiratory endurance, strength endurance, systolic blood pressure, diastolic blood pressure, resting pulse rate, sports competition anxiety, aggression and stress. The researcher had consulted with the experts, physical education professionals, reviewed various literatures accessible to him and selected the following test items, which were standardized, appropriate and ideal for the selected variables. The criterion variables are presented in Table I.

**TABLE I: TESTS SELECTION**

S. No.	Criterion Variables	Test Items
1.	Speed	50 mts Run
2.	Cardio Respiratory Endurance	Cooper's 12 min Run/Walk Test

3.	Strength endurance	Bend knee Sit ups
4.	Systolic and Diastolic Blood Pressure	Sphygmomanometer
5.	Resting Pulse Rate	Radial Pulse
6.	Sports Competition Anxiety	Sports Competition Anxiety Test Questionnaire
7.	Aggression	Smith's Aggression Test Questionnaire
8.	Stress	Everly and Girdandos Psychological Stress Scale

## II. D. Reliability of the Instruments

All the instruments and equipment used for the study were standard ones and of high quality. None had any functional defect and were being used for the same purposes. Each instrument was tested several times and was used on subjects only being satisfied with the performance of the instrument. Stop watches and floor mats used for measuring speed and strength endurance were acquired from reputed companies. Sphygmomanometer and stethoscope used for measuring blood pressure were acquired from a physician who has been using it for diagnostic purposes on his patients for quite some time. A qualified person was assisted to take blood pressure.

## II. E. Reliability of the Questionnaires

Competition Anxiety: The reliability of the questionnaire was established through test and re-test method by Rainer Marten's, reliability co-efficient ranged from 0.55 to 0.93.

Aggression: The reliability of the questionnaire was established through test and re-test method by Smith reliability co-efficient ranged from 0.61 to 0.83.

Stress: The reliability of the questionnaire was established through test and re-test method by Everly and Girdandos reliability co-efficient ranged from 0.51 to 0.91.

Reliability of the Data: Reliability of the data was established by test and re-test process where consistency of scores was statistically tested by computing intra class co efficient of correlation for ten subjects on the entire selected criterion variables. All the variables revealed high correlation when tested and re-tested, thus ensuring their reliability. The results were presented in Table II.

**Table II: INTRA CLASS CO-EFFICIENT OF CORRELATION VALUES ON SELECTED CRITERION VARIABLES**

Variables	'R' Value
Speed	0.88*
Cardio Respiratory Endurance	0.87*
Strength endurance	0.82*
Systolic blood pressure	0.91*
Diastolic blood pressure	0.89*
Resting Pulse Rate	0.95*

\* Significant at .05 level of confidence.

(The table value required for significance at .05 level of confidence with df 9 was 0.767).

## II. F. Tester's Competency:



Prior to the commencement of the study, the investigator and her colleagues had undergone training in various techniques in the testing procedures. They had a number of practice session in order to familiarize the testing procedure.

## II.G. Orientation to the Subjects:

The researcher explained about the purpose of the study to the subjects and had also explained the testing procedures on selected criterion variables and gave instructions to the subjects about the procedures to be adopted while measuring. Three sessions were spent to familiarize the subjects with the testing procedures. The subjects were verbally motivated to attend the training session regularly. It helped them to perform well.

## II.H. Collection of the Data:

The data were collected on the selected physical fitness variables such as speed, cardio respiratory endurance and strength endurance were measured by using 50 meters run, cardio respiratory endurance and bend knee sit-ups. The selected physiological variables such as systolic blood pressure and diastolic blood pressure was measured with the help of sphygmomanometer and resting pulse rate was measured by taking radial pulse and the selected psychological variables such as sports competition anxiety, aggression and stress were measured by using Rainer Marten's Sports Competition Anxiety Test Questionnaire, Smith's Aggression Test Questionnaire and Everly and Girdandos Psychological Stress Scale respectively.

## Administration of the Tests:

### III. Cooper's 12 Minutes Run/Walk Test

**Purpose:** To measure the cardio vascular endurance

**Facilities and Equipment:** A 400 mts. track with marking. A specific course was measured in distance and the number of laps completed was counted. The entire course was divided into eights by placing makers. This enable the tester to quickly determine the exact distance covered in 12 minutes. Stopwatches, whistle, and distance markers are needed for group testing.

**Procedure:** Each runner was assigned a spotter. The runners start behind a line and upon the starting signal; run as many laps as possible around the course within the 12 minutes. Thespotters maintain a count of each lap, and when the signal to stop was given, they immediately run to the spots at which their runners were at the instance the whistles to stop was given.

**Scoring:** The score in meters was determined by multiplying the number of completed laps. The distance (400 mts.) of each laps (Ex 400 mts. plus the number of segments in eights of an incomplete lap, plus the number of meters stepped off between particular segments).

## CONCLUSION

A regular physical, physiological and psychological fitness program can reward you with many benefits. It will very likely decrease your risk of contracting various diseases, raise your sense of well-being and confidence, and improve your ability to engage in recreational sports and outdoor activities. Ideally, your physical, physiological and psychological fitness program will improve your aerobic endurance, muscular strength, muscular endurance, speed, agility, flexibility and balance. It will also improve your body composition, building muscle and reducing body fat. However, the most well-intentioned and well-designed program is only as good as your ability to stick to it. Therefore, someone who has been relatively sedentary and is just beginning a program should not try to take on too much because the body and mind need time to adjust to the demands of exercise. All too frequently, a beginner throws himself into an exercise program and either gets hurt by ramping up too fast or burns out psychologically and just quits. Since the object is to improve health by developing a lifelong habit of exercise, it is best to undertake a physical, physiological and psychological fitness program that is appropriate in duration and intensity to your level of physical fitness and motivation. The following are general principles that will enhance the likelihood that you will make exercise a lifelong habit.

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## COMPUTER TECHNOLOGY IN SPORTS

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### INTRODUCTION

Computer science in sport is an interdisciplinary discipline that has its goal in combining the theoretical as well as practical aspects and methods of the areas of informatics and sport science. The main emphasis of the interdisciplinary is placed on the application and use of computer-based but also mathematical techniques in sport science, aiming in this way at the support and advancement of theory and practice in sports. The reason why computer science has become an important partner for sport science is mainly connected with "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".

Historical background: Going back in history, computers in sports were used for the first time in the 1960s, when the main purpose was to accumulate sports information. Databases were created and expanded in order to launch documentation and dissemination of publications like articles or books that contain any kind of knowledge related to sports science. Until the mid-1970s also the first organization in this area called IASI (International Association for Sports Information) was formally established. Congresses and meetings were organized more often with the aim of standardization and rationalization of sports documentation. Since at that time this area was obviously less computer-oriented, specialists talk about sports information rather than sports informatics when mentioning the beginning of this field of science. Based on the progress of computer science and the invention of more powerful computer hardware in the 1970s, also the real history of computer science in sport began. This was as well the first time when this term was officially used and the initiation of a very important evolution in sports science. In the early stages of this area statistics on biomechanical data, like different kinds of forces or rates, played a major role. Scientists started to analyze sports games by collecting and looking at such values and features in order to interpret them. Later on, with the continuous improvement of computer hardware - in particular microprocessor speed - many new scientific and computing paradigms were introduced, which were also integrated in computer science in sport. Specific examples are modeling as well as simulation, but also pattern recognition, design, and (sports) data mining.

### COMPUTERS ARE USED IN SPORTS

There's scarcely a facet of life that hasn't been impacted in some way by computers, and sports are no different. Virtually every aspect of sports - from how they're played to how they're measured, to how they're viewed - has been forever altered by the computer age.

**1.STATISTICS** - Sports fans love statistics. They are the common thread binding past and present together; the gauge by which we measure modern-day athletes to their forerunners. Computers give us the ability to compile vast databases of statistical information in real time, thus facilitating:

**2.Scouting** - Today's managers and scouts have virtually unlimited data at their fingertips with which to assess athletes. Everything from how effective a pitcher is on 3-days' rest to the average number of fastballs he throws on a 3-2 count, can be summoned at a mouse-click.

**3.EQUIPMENT DESIGN** - CAD, or computer-assisted design, has led to incredible innovations in sports equipment. Helmets have become more effective in providing player protection; padding is more form-fitting and allows for greater range of motion. Club design has enhanced golfers' performance.



**4.BIO-MECHANICS** – By studying the movements of athletes via computerized simulators, manufacturers have been able to develop better training equipment; trainers are able to customize workout regimens for individual athletes, and sports medicine is more capable of assessing, and preventing, sports-related injuries.

**5.PERFORMANCE ANALYSIS** – Another benefit of bio-mechanical studies, in that it allows players and coaches to break down the motions of an athlete – scrutinize golf swings or batting stances, for instance, in order to maximize the player's performance.

**6.SIMULATED GAMES** – Team and individual players stats can be used to determine probabilities in actual game situations by inputting the data into a simulator, which of course leads us to:

**7.VIDEO GAMES** – Fans of the game can manage simulated games and make managerial decisions with the same info available to the actual coaching staff. Realistic graphics and body movements are common in modern-day video games, thanks again to bio-mechanical research of the pro athletes themselves.

**8.CONTROLLING SCOREBOARDS** – The pro sports venues of today are managed by a large array of computers which will update player stats, out-of-town scores, graphic displays, even weather forecasts in real time.

**9.OFFICIAL WEBSITES** – All of your favorite teams are just a click away. You can look up stats, schedules, and the latest team news, buy tickets and merchandise, all at your fingertips. Historical archives, streaming video, interviews and scheduled events are also online.

**10.SPORTS MEDIA** -Computers play a major role in how well media outlets cover their respective sports. Sports media outlets use computers everyday in their jobs. Writers use computer research for their subjects. They use various computer programs to make their writings attractive.

## **11.COMPUTERS AND SPORTS TRAINING**

Computers help gauge an athlete's performance during a specific training regimen. Trainers for sports teams can put a player's height, weight and body model into a computer and develop a training program that best fits her needs. Trainers can also put sensors and equipment onto a player during training, allowing the computer to register results while the player trains. The computer can model an athlete's motions, allowing trainers to see where an athlete can improve.

## **12.PHOTO FINISH TIMING FROM SPORT SYSTEMS**

Sport Systems' Finish Lynx Photo Finish Timing System is suitable for all track athletics and it can also be used to time many other sports. If timing and accuracy is a challenge for your event, contact us to discover how we can help you.

Rapid results service - as soon as your last competitor had finished, the results are delivered. There's no waiting around - the results can be announced just

as soon as they get to the event announcer!

Accurate time – Photo Finish records down to just one thousandth of a second so if you've got a potential world record we've got the system to capture it. Accurate judging - Photo Finish can sort

out a confusing mess of competitors crossing the finishing

line all at once. The winner's time is displayed on the event clock as soon as they

cross the finish line. Photo Finish provides results for media and spectators, either

in printed form or by TV screen. Finish Lynx's Photo Finish is recognized

by the governing bodies of most sports as the de-facto standard, where records are produced,

even world records.

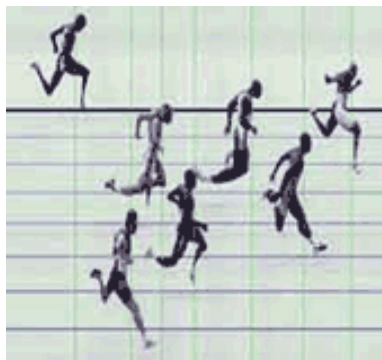
Every event is recorded and saved on disk, making it possible to review the finish of the event in case of appeals.

The Finish Lynx Photo Finish operated by Sport Systems

is the world's leading electronic timing system. It combines laptop computer technology with







a digital camera that takes 10,000 frames per second. The system is activated by the starter's gun triggering the equipment's sensor. This in turn starts the event's clock ticking. As the first competitor crosses the finish line, the Photo Finish camera captures the moment and displays the event on the computer's screen. Photo Finish doesn't take away all human responsibility; it will not tell you who your winner is. Instead it provides the tools and information to allow the race's senior timekeeper to make that decision. Behind the system is a database of competitors' details including items like club and age group data. Once a winner has been determined, the equipment operator types in either their lane number (for athletics) or the competitor number. This is repeated for

all competitors and, as soon as the last one is in, the results can be displayed. Competitor status like DNS, DQ or DNF are also managed by the system. Split times for each competitor are also calculated.

It's hard to believe we ever managed without computers in the sports world, when you consider that nowadays we scrutinize every nuance of an athlete's performance, and keep stats on practically everything. For the improvements they've made possible in players' performance, training; equipment, and sports medicine, computers are indeed invaluable to sports

#### **BENEFITS OF ADVANCED SPORTING TECHNOLOGIES**

Recent developments in sporting technologies have created a variety of products aimed at improving and increasing athletic performance. Athletic health can be maintained and observed, and injuries treated, through the production of modern sporting technologies such as heart rate monitors, pedometers and body-fat monitors. Through this, a greater deepened knowledge of the human body and its potential has been recognised, allowing athletes to train and compete in sports to a much older age. Participant safety at all times has also been made possible through the development of certain sporting equipment, such as helmets and body protection which are used in boxing and ice hockey to help prevent injuries. Modern sporting technologies have also made competition judging easier and more accurate, and spectator interest and excitement is enhanced by broadcasting and in-stadium displays (scoreboards).

#### **TECHNOLOGY BE USED TO ANALYSE ATHLETIC PERFORMANCE**

Technologies such as CAD (Computer Aided Design) can play a major role in the improvement of sporting equipment. CAD allows virtual design and testing techniques to be applied to all aspects of sport and leisure equipment research and development. CAD offers an efficient means of considering and assessing new products and ideas, and is primarily used to improve safety, comfort and effectiveness of specialised sports equipment. CAD is also used regularly in the justification of physical facts and figures, and for both competitive and training circumstances. Other technologies such as 'smart' equipment can be used to evaluate human performance. These include sensors and computers as part of their utility and can be used by athletes as part of their training regime. Examples of 'smart' equipment technologies include devices used for exercise stress testing and cardiovascular assessment, human reaction time and frequency of movement meters, and jump and run characteristics devices. More modern technologies such as motion capture analysis are also used to analyse athletic performance. This involves digitally recording the movements of athletes during sporting activities which can then be used for personal performance evaluation by the sports person, for enhanced spectator entertainment, and in some cases medical treatment.

#### **Conclusions**

The sports equipment industry relies heavily on computer aided design (CAD) software to create new shoes, balls, skis, and other equipment. Recent developments in sporting technologies have created a variety of products aimed at improving and increasing athletic performance



## THE TECHNIQUES TO DEVELOP THE PERFORMANCE OF KABADDI PLAYERS THROUGH MOTIVATION

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### INTRODUCTION:

The sport has a long history dating back to pre-historic times. It was probably invented to ward off croup attacks by individuals and vice-versa. The game was very popular in the southern part of Asia played in its different forms under different names. A dramatized version of the great Indian epic, the "Mahabharata". has made an analogy of the game to a tight situation faced by Abhimaneu, the heir of ' the Pandava kings when he is surrounded on all sides by the enemy. Buddhist literature speaks of the Gautam Buddha playing Kabaddi for recreation. History also reveals that princes of yore played Kabaddi to display their strength and win their brides! The game, known as Hu-Tu-Tu in Western India, Ha-Do-Do in Eastern India & Bangladesh, Chedugudu in Southern India and Kaunbada in Northern India, has undergone a sea change through the ages. Modern Kabaddi is a synthesis of the game played in its various forms under different names.

Sports are as old as the human society and it has achieved a universal following in the modern times. Millions of fans follow different sports events all over the world with great devotion and enthusiasm. Many participate in sports activities for the fun or for health fitness. To others it is a profession linked with high degree of popularity.

Thus today's world is the world of sports and sports psychology has given a great height to it. For less than the last century sport has been studied scientifically and sport psychology is an important part of that scientific study. Here sports psychology is the study of people and their behaviors in a sporting arena. Recently interest in sport psychology has increased. Kabaddi Player and coaches talk regularly in the media about how sporting success can be attributed, to how focused and motivated a player is, (or) how well a team has been able to work together. Thus the central issue in sports psychology is motivation.

In the present time of competitive world of sports, it is not only physical differentials which matter but the psychological makeup of an individual is also of paramount consideration as it plays a decisive role in the performance of the competitors. Sports psychology is concerned with psychological factors that influence participation and performance in sports. Sports psychology is a division of psychology aimed at better preparing the mind of an athlete for competition. Sports psychologists study motivation, personality, anxiety, group dynamics, leadership, mental imagery, self-concept, aggression, adjustment and many other dimensions of participation in sports and games. It is a well established fact that there are numerous psychological factors which effect and improve the sports performance. Sports psychologists, coaches and physical educators who teach sports psychology and work with athletes to improve performance and enhance the quality of the sports and games.

### Motivation:

Most definitions of motivation refer to having a drive to take part and to persist in an activity. A sport-specific definition is the tendency of an individual or team to begin and then carry on with the activities relating to their sport.

There are two main types of motivation Intrinsic and Extrinsic.



Intrinsic Motivation in its purest form is when an athlete participates in a sport for enjoyment. When people are asked why they play sport, if they reply with 'for fun' or 'because it makes me feel good' they can said to be intrinsically motivated.

Extrinsic Motivation is when someone behaves the way they do because of some form of external mechanism. The most common forms of Extrinsic Motivation come through the use of tangible and intangible rewards.

Before going to study the effect of motivation and techniques, the coaches, managers have to develop a motivation climate. It is the environment in which an athlete finds themselves at the same time it will focused on mastery of tasks-where the Kabaddi Player receives positive reinforcement and there is greater emphasis on team work and co-operation that will improves Kabaddi Player attitudes, efforts and learning techniques.

### **Achievement motivation**

Motivation is a key means to achieving success. It greatly depends on the coaches' personality and attitude means of getting players interested in ettering themselves and accepting the means by which they can develop. In Kabaddi, nothing can affect performance as dramatically as a sudden loss of motivation. Without the motivate ion to succeed a player cannot survive the challenges Kabaddi can throw up. If the team or player is going through a bad patch then motivating your players becomes especially important. However, an overly motivated player may be nervous and take risks. During match preparation, the aim of the coach is to find the right motivational levels. This can be attained by watching the attitude of the players and providing a good pep-talk. The coach can play up or play down the importance of a game in order to reduce or increase motivation. He can also take pressure off too key-up players by accepting responsibility for the result. The experience of the coach does often tellin these situations and will play a role in the resulting performance. Every player has a dream in Kabaddi and some players pursue their dreams and expect to achieve them through renewed hard work and dedication. Obstacles are seen as a challenge and each setback as a call for more effort to improve and overcome these problems. This type of player is intrinsically self-motivated as their desire to succeed comes from within themselves. Motivation is a key means to achieving success. It greatly depends on the coaches' personality, attitude and means of getting players interested in bettering themselves and accepting the means by which they can develop. Generally, the coach should try to understand what motivation is and the ways to turn under or extrinsically motivated players into intrinsically highly motivated successful players

### **Effect of Motivation on sports Performance:**

Motivation is an essential component of successful sports performance. It depends on the amount of reinforcement (e.g praise, feedback, sense of pride or achievement), the perceived status of the model and importance of the task. However of someone is so motivated that won't stop, this can cause problems (i.e) the effect may be positive or negative.

**Positive Effect:** Someone who is motivated to play, perform and train at an optional level will experience increases in performance. It is the role of Kabaddi Player, coaches, managers and supporting staff to make sure that the athlete is at optional levels of motivation, without experiencing any negative side effects.

**Negative Effect:** Being over motivated can be a big problem for Kabaddi Player. Kabaddi Player is often under pressure to perform at a high level, so feel the need to train more and more. However over-motivation and a grueling schedule can lead to overtraining staleness and burnout. The key sign is that the athlete is unable to maintain a previous performance level or that performance levels may decrease significantly.

### **Techniques to improve the performance of kabaddi Players:**

Thus to avoid these negative effects of motivation and to develop an effective motivational climate Epstein (1989) suggested the TARGET technique. The detailed explanation is

**Tasks:** having a range of tasks that require the athlete to actively participate in learning and decision making.

**Authority:** giving athletes authority over monitoring and evaluation their own learning and decision making.



**Reward:** Using rewards that are focused on individual improvement rather than comparing levels to other athletes.

**Grouping:** giving athletes the opportunity to work in groups so that they develop skills in a group based environment.

**Evaluation:** focusing on an individual's effort and improvement.

**Timing:** timing activities effectively so that all of the above conditions can interest effectively/ some more techniques are

- Minimizing the punishment or criticism – this does not mean to ignore mistakes rather using instruction and encouragement to help athletes improvement.
- Let the athletes know, what they do well as, what needs improvement (e.g good hustle, nice effort, good catch, way to be in the right place)
- Encouraging them for team work (i.e) using drills where athletes have to work together to meet their goals.
- Goal setting is very valuable in motivation teenaged athletes. Establishing goals helps athletes to work harder and having them interact with their goals, results in higher motivational levels.
- By giving immediate feedback at every task by following the above said techniques the benefits will be
- Kabaddi Players will be motivated to continuous improving and trying hard.
- Kabaddi Players will be more confident as the coach points out their improvements and successes.
- Team cohesion will improve.
- Practices and game will be more fun.
- Kabaddi skills will improve as they get more instruction.

## **Conclusion**

On the basis of the conclusion drawn it is recommended that more emphasis should be given to develop high achievement motivation for the improvement of performance of Kabaddi Player in kabaddi.

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## **"THE ENHANCEMENT OF QUALITY IN HIGHER EDUCATION THROUGH SPORTS"**

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The concept of education is dynamic. It has passed through many ages and stages in the process of evolution and at every stage it has had a different meaning according to the then social existing social conditions. The concept is still in the process of evolution and this process will never come to an end. Emerging time will always demand revision the prevailing educational ideals.

The word education derived from the Latin word Educere' which means "to educate 'to bring up' or to rise probably from this explanation the term education is directly derived. It is again believed, that the term education is derived from Latin word educatum which means the art of teaching or training. Thus we find that according to Latin words 'educere' education is external in nature. It is imposed on child from outside. But adoring educating education is making potential and actual. Thus education is both acquisition of Knowledge or art of teaching and development of skill, attitudes, habits etc. The child should be trained through experience of his life, so the best in his life can be achieved.

The concept of education defined by many philosophers. Socrates defined 'Education means bringing about out of the ideas of universal validity which talent in the mind of every man.

Aristotle "education is the creation of a sound mind in a sound body. It develops mans' faculty, especially his mind so that he may be able to enjoy the contemplation of supreme truth, goodness and beauty of which perfect happiness essentially consist."

Hear the need arose the meaning of education in the narrow sense 'is a planed, organized and formalized process. It is imparted at a particular place school, college or university, and at a limited time. It is also imparted by definite persons the teachers to definite persons the students its curriculum too is formal. The amount of education received by child is measured in terms of number and grade of examinations passed by them. The teacher makes deliberate efforts to inculcate certain rules, attitudes or habits in the children, which are considered to be most essential and useful.

Thus the primary aim of all educational efforts should be to help boys and girls to achieve the highest degree of individual development of which they are capable.

The indiscriminate sanction of permissions to establish higher education's institutions led to the mushroom growth of institutions of higher education with substandard qualities and have thereby diluted standards. To address this national policy on education was framed in 1986 and in 1992 a revised policy document and action Plan was approved by the parliament. These police paved the way for formulation of several assessment bodies to the assessment of the education system and techniqesto quality assurance. Most among them are bench marking or base line techniques, ISO 9000 TMQ and NAAC, and an autonomous University grants Commission. Among them most popular are bench marking and accreditation from NAAC(National Assessment and Accreditation council). This was the most important development which has contributed to the assessment of the education system. NAAC has significantly contributed to the growth and governance of educational institutions during the last twenty years. It has amply stressed the need for imparting the quality education. The Indian system of quality assurance is based on the philosophy ' well begun is half done" and the other half is to be done by fine tuning the experience of discovering our strength



and sustained improvement by eradicating weakness. NAAC evolved indicators of quality to facilitate academic mobility is one of the most important regional and international dimensions of quality assurance.

Here we emphasized the word "quality in Education" the oxford dictionary defines "the notion of quality includes all attributes of a thing, except those of relation and quantity."

British standard institute defines 'quality in functional terms as the totality of features and characteristics of a product or service that bear upon its ability to satisfy the stated or implied needs...

Crawford and shutler defined it "quality is a positive and dynamic idea achievable by design with meaningful investment, and not a negative idea of absence of defect. "

#### The Role of sports in enhance of Quality in higher education

The enhancement of quality of education or academic affairs depends upon the physical condition. Poor achievements of student in academic matters or quality are due to physical conditions. The researchers in Physical education established the fact that there exact relationship of physical activity and motor skill and health are needed to academic achievements. Therefore a kind of physical education programs like sports and games are necessary to help every boy and girl in his or her quality academic achievement.

Modern thinkers in education emphasized the best individual is one who is physically fit mentally sound, intellectually sharp, emotionally balanced and socially well adjusted. Therefore in the modern curriculum physical education finds its due place. Physical education and physical director aimed at the development of health of a person or student he only imparts health programs in the higher education institutions to achieves quality education.

The present scenarios of the higher educational institutions in A.P. are in a state of sorry state. There were 1751 colleges, 1215 junior colleges 315 engineering colleges 400 and odd schools, majority of these institutions are run by private managements, even in the government institutions there were no physical directors due to the non filling of physical director vacancies, governments shown stepmother attitudes towards physical education. The private college managements never played interest to appoint physical directors are mere waste of money. Many colleges were run in the apartments, without proper play grounds which reflect on the quality of education. The then chief minister of unified Andhra Pradesh Rajasekar Reddy openly commented that only 20 percent of the out comers of educational institutions are employable which shows the unfortunate state of student.

The government of India has expressed its concern over the promotion of physical fitness and and most of the state governments have made provision for physical education at different stages of educational institutions. This however is not enough we should try to improve the existing programs through scientific planning. Some of the suggestions which may lead to proper planning and organization of Physical activity to overcome the situation to enhance the quality of the education through the sports at the secondary and the college level.

- 1.The government while sanctioning the permission or the affiliation to the colleges it should impose condition that there should be a sufficient Play ground.
- 2.The educational institutions should employ physical directors or special teachers of physical education.
- 3.The educational institutions should raise funds for necessary facilities equipment and supplies should provided and spend some of amount on sports and games every year.
- 4.Physical education facilities or opportunities should be provided for all pupils.
- 5.Physical fitness testing programs should establish.





## SIGNIFICANCE OF SPORTS AND ENHANCEMENT OF QUALITY EDUCATION

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As we know health is wealth we should question ourselves like, from where health comes?

It was man's desire for a healthy pastime and a method of self evaluation and competition that gave birth to sports. Sports have been part of humanity from the earliest chapters of history. The games played in Egypt and Mayan civilizations prove this. Football, hockey and rugby are followed as religions, whereas the athletic meets are always full of celebrations. Sports have been an integral part of our generation from early childhood. However, the statement does not stand true in the present scenario anymore, as the new age kids have moved their playgrounds to cyber world, thus losing out on all the fun and learning experience. As peers, parents and friends, it is important to look deep down and ask ourselves that have we said and done enough for kids to know the real benefits of sports in life? Well, to preach we need to practice and for practice we need understanding too. Herein, we have tried to assimilate the importance of sports in the next few passages. Though it might not be sufficient to completely bestow the significance of sports upon the gen next, but it definitely is a start.

### **Significance of Sports In Our Life**

No matter what sport you play, you are bound to have better health than people who avoid sports. No other activity is as productive in gaining endurance, strengthening of muscles and overall physical fitness as sports. To attain a fit body and pleasing and attractive personality, you need to play sports.

When we are playing, we actually utilize our free time in doing something good. In fact, parents who scold their kids for playing, instead of mugging up books in afternoons, must realize that the kid gains nothing from disinterested studying, while they gain good health and better psyche from games.

Playing increases sharpness of mind and mental strength. Sport teaches you how to handle failures with dignity, while enjoying victories to the maximum. Also, it trains people to handle crunch situations, where stress can try and pull them down. All positive traits for a healthy mind and a healthy person can be gained from sports.

Sports teach you to be completely alert all the time. It also gives you the ability to make split second decisions, when you are required to do so. Playing games actually increases your brain activity; never letting your attention wander and also making you understand things in more detail. The knowledge, thus, achieved is not limited to the ground or the court and can be used in making split-second decisions in tough situations posed by life as well.

Sports are the healthiest way to de-stress yourself. Playing a game relaxes you and also gives a fresh positive feeling to life. A hard day at work can be really taxing and strenuous both for the mind and the soul. In such circumstances, what can be the best way to deal with the parched nerves than to jump into a pool of warm water and swim your way out of it!

Self confidence is boosted by excelling in sports and while trying to excel, discipline becomes a part of life. Anyone who takes sports seriously knows the importance of discipline and the determination to succeed. He also becomes dedicated and responsible, in turn, becoming more successful and confident.

Most of the popular games are team events and those played individually also have team versions. Playing team games makes a person more comfortable with others. It improves the interpersonal skills and makes a



person efficient as a team player. He generates positive vibes that help him to work in any scenario with different people, who have different senses and sensibilities.

Sports can also be chosen as a career. Sportspersons are heroes of national and regional importance who are looked up to. They are role models for many and are imperative people who do the nation proud throughout the world. As far as monetary benefits are concerned, playing sports is today a booming career, given the kind of money involved. Sportspersons make lots of money through endorsements and other activities, apart from the money generated through sports

## **ENHANCEMENT OF QUALITY EDUCATION**

India, like any other knowledge economy, depends on the development of its educational sector. Higher education drives the competitiveness and employment generation in India. However, research findings have shown that the overall state of higher education is dismal in the country. There is a severe constraint on the availability of skilled labor (Agarwal, 2006). There exist socio-economic, cultural, time and geographical barriers for people who wish to pursue higher education (Bhattacharya and Sharma, 2007). Innovative use of Information and Communication Technology can potentially solve this problem. Education is the driving force of economic and social development in any country (Cholin, 2005; Mehta and Kalra, 2006). Considering this, it is necessary to find ways to make education of good quality, accessible and affordable to all, using the latest technology available. The last two decades have witnessed a revolution caused by the rapid development of Information and Communication Technology (ICT). ICT has changed the dynamics of various industries as well as influenced the way people interact and work in the society (UNESCO, 2002; Bhattacharya and Sharma, 2007; Chandra and Patkar, 2007). Internet usage in home and work place has grown exponentially (McGorry, 2002). ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. It can be used as a tool to overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome time and distance barriers (McGorry, 2002). India has a billion-plus population and a high proportion of the young and hence it has a large formal education system. The demand for education in developing countries like India has skyrocketed as education is still regarded as an important bridge of social, economic and political mobility (Amutabi and Oketch, 2003). The challenges before the education system in India can be said to be of the following nature:

**Access to education-** There exist infrastructure, socio- economic, linguistic and physical barriers in India for people who wish to access education (Bhattacharya and Sharma, 2007).

**Quality of education-** This includes infrastructure, teacher and the processes quality.

**Resources allocated-** Central and State Governments reserve about 3.5% of GDP for education as compared to the 6% that has been aimed (Ministry of Human Resource Development, 2007). **Resources allocated-** Central and State Governments reserve about 3.5% of GDP for education as compared to the 6%th

## **Summary and conclusions**

Changes in the curriculum do support fundamental economic and social transformation in the society. Such transformations require new kinds of skills, capabilities and attitudes, which can be developed by integrating ICT in education. The overall literature suggests that successful ICT integration depends on many factors. National policies as well as school policies and actions taken have a deep impact on the same. Similarly, there needs to be an ICT plan, support and training to all the stakeholders involved in the integration. There needs to be shared vision among the various stakeholders and a collaborative approach should be adopted. Care should be taken to influence the attitudes and beliefs of all the stakeholders. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would enable development of collaborative skills as well as knowledge creation skills. This in turn would better prepare the learners for lifelong learning as well as to join the industry. It can improve the quality of learning and thus contribute to the economy at has been aimed (Ministry of Human Resource Development, 2007)

## A STUDY : EFFECT OF TYPE 2 DIABETES IN INDIA

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### Introduction

Diabetes is metabolic disease due to either the pancreas not producing enough insulin or the cells of the body not responding properly to insulin.

There are Three main types of diabetes

#### Type 1

Juvenile diabetes cause is unknown. These Phenomena are believed to occur no more frequently than in 1% to 2% of the persons with type 1 diabetes.

#### Type 2

Adult –onset diabetes, primary cause is excessive body weight and enough exercise.

#### Type 3

Gestational diabetes causes when pregnant women without a previous history of diabetes develops a high glucose levels. This type of diabetes usually resolves after the birth of the baby.

The more common form of diabetes is T0ype 2, which affects 90 to 95 % of diabetes. In this type, body produces insulin but is unable to recognize and use it properly. It is considered an advanced stage of insulin resistance. Insulin resistance allows sugar to increase and cause of host of complications.

### Symptoms

The classic symptoms of untreated diabetes are weight loss, increased urination, increased thirst and increased hunger, Symptoms may develop rapidly (weeks or months) in type 1 diabetes, while they usually develop much more slowly and may be subtle or absent in type 2 diabetes.

Several other signs and symptoms can mark the onset of diabetes, although they are not specific to the disease. In addition to the known ones above, they include blurry vision, headache, fatigue, slow healing of cuts and itchy skin. Prolonged high blood glucose can cause glucose absorption in the lens of the eye. Which leads to changes in its shape, resulting in vision changes, number of skin rashes that can occur in Type 2 Diabetes. The role of type 2 Diabetes is increasing rapidly because of population ageing unplanned urbanization and globalization of Trade and Marketing urbanization changing dietary pattern changing nature of work place, emerging economic prosperity and taste urbanization in developing nations are all leading to shift towards sedentary life style patterns and eventually providing an invitation to type 2 diabetes.

Several life style factors including physical inactivity and low fiber diet with high glycemic index.

### Complications

All forms of diabetes increase the risk of long term complications. The major long-term complications relate to damage to blood vessels. Diabetes doubles the risk of cardiovascular disease and about 75 % of deaths in diabetes are due to coronary artery disease other “macro vascular” diseases are stroke, and peripheral vascular disease.

The Primary micro vascular complications of diabetes include damage to the eyes, kidneys and nerves damage to the eyes is caused by damage to blood vessels in retina of the eye and can result in gradual vision loss and blindness damage to the kidneys, can lead to tissue scarring, urine protein loss, and eventually chronic kidney



disease, sometimes requiring dialysis or kidney transplant. Damage to the nerves of the body known as diabetic neuropathy is the most common complication of diabetes. The symptoms can include pain and altered pain sensation which can lead to damage to the skin. Diabetes related foot problems (such as diabetic foot ulcers) may occur, and can be difficult to treat.

## **Diabetic effect in India**

India the second most populous country of the world, has been severely affected by the global diabetes epidemic. As per the International Diabetes Federation (2014) approximately 50 % of all people with diabetes live in just three countries: China (98.4 Million) , India ( 65.1 Million), and the USA (24.4 million) There is clear evidence to show that diabetes prevalence is rapidly increasing especially in urban India. The conventional risk factors of urbanization, unhealthy eating habits and physical inactivity, coupled with inherent genetic attributes and differences in body composition are propelling the increase in case of diabetes. The low levels of education and poor awareness of the disease in the country are enhancing its impact on health of the population. Every sixth diabetic in the world is an Indian, making the country the world's diabetes capital. While 80 percent of diabetes spending is done by the richest countries over 70 percent of diabetes are from poorer countries. India spends over Rs. 40,000 Crores on diabetes which is just one percent of global spending. The US spends the maximum at over Rs. 92 Lakhs Crores This accounts for 52.7 percent of the world's total spending. The report says India will be a major driving force for the increase of diabetes in South – East Asia to 8.4 percent in 2030 from the current seven percent. Diabetics is threatening global health and economic prosperity.

## **Prevention & Suggestions**

1. Maintaining your ideal body weigh. This is especially true if you have a family history of diabetes.
2. Exercising regularly like as brisk walk of 1 – 2 miles in 30 minutes at least five times a week even if that does not result in you achieving an ideal weight that because regular exercise reduce insulin resistance.
3. Eating a healthy diet.
4. Taking Medication: The medication metformin (Glucophage) offers some additional protection for people with pre –diabetes. Pre –diabetes is defined as blood glucose levels between 100 and 125 mg/dl.
5. Pedometers as a measurement tool of physical activity through walking pedometers, which measure walking activity in the form of daily step counts, also serve as a motivator It is put on the waist of a person and gives good result.
1. **Check your risk of diabetes:** Take the Life ! risk assessment test and learn more about your risk of developing type 2 diabetes.
2. **Manage your weight :**Excess body fat, particularly if stored around the abdomen, can increase the body's resistance to the hormone insulin. This can lead to type 2 diabetes.
3. **Exercise regularly:** Moderate physical activity on most days of the week helps manage weight, reduce blood glucose levels and may also improve blood pressure and cholesterol.
4. **Eat a balanced, healthy diet:** Reduce the amount of fat in your diet, especially saturated and trans fats. Eat more fruit, vegetables and fiber foods.
5. **Limit your alcohol intake:** Too much alcohol can lead to weight gain and may increase your blood pressure levels.
6. **Quit smoking:** Smokers are twice as likely to develop diabetes as non-smokers.
7. **Control your blood pressure:** Most people can do this with regular exercise, a balanced diet and by keeping a healthy weight. In some cases, you might need medication prescribed by your doctor.
8. **Reduce your risk of cardiovascular disease:** Diabetes and cardiovascular disease have many risk factors in common, including obesity and physical inactivity.



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## **“ IMPORTANCE OF SPORTS TO IMPROVE THE QUALITY OF EDUCATION- YOGA HEALTH & WELLBEING”**

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### **Introduction**

Healthy living is a Universally accepted and realized terminology. The present concept of Healthy Living is not only freedom from disease, but also to gain enough strength, agility, flexibility, endurance and skills to meet the demands of daily life and to build sufficient reserve energy to withstand stress and strain. Yoga is the Universal religion a way of life. The importance of Yoga gaining the benefits of Physical Health, Mental Health and Social Wellbeing. Yoga exercise according to Pathanjali have to practice in systematic way through Astanga Marga namely Yama-abstention, Niyama-regulations discipline, Asana-easy posture, Pranayama-control of breathing, Pratyahar-sense of control, Dharana-concentration, Dhyana-meditation and Samadhi-super conscious state. These astangamarga are usually categorized into three groups. Yama, Niyama and Asana are including into Bahirangsadhana, Pranayama and Pratyahar included in AntarangSadhana and Dharna, Dhyana and Samadhi comes under Antaratmasadhana. So many people consider yoga to be only Asana and Pranayama but it is wrong. It is because without following Yama and Niyama can get physical strength and abilities, but he will not get relief from mental stress.

### **Purpose of the Study**

The purpose of this study was to identify their sugar level in blood pressure and come to normal who were age from 60 to 70 years of old.

### **Methodology**

The subjects were selected exercise were conducted to the thirty inmates of 'Old Age Home' located at Yanam, Pondichery State who are in the age group of 60 to 70 years of age. These exercises are conducted for a period of four weeks of one hour duration per day.

### **Discussion**

Yoga deals with health, strength and conquest of the body. It lifts the veil of difference between the body and the mind. Asanas purify the body and mind and gave preventive and curative effects. They are innumerable, catering to the various needs of muscular, digestive, circulatory glandular, nervous and other systems of the body. It brings health, strength, fitness and expression. In fact Yoga is the medicine of the body, which can restore the vigor of the vital organs like the Heart, Kidney etc., which are effected by reduced blood circulation due to either our sedentary or stressful life.

### **Results**

They are disease free, their sugar level and blood pressure come to normal and all of them expressed stress-free life with sound sleep.

### **Conclusion**

These Yoga practices improve the functioning of Organs and upgrade the Mental health and Physical efficiency of the body.



## EFFECT OF 6 WEEKS AEROBIC DANCE TRAINING ON SELECTED RHEOLOGICAL PROPERTIES OF BLOOD AMONG INTER COLLEGIATE CRICKET PLAYERS

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### INTRODUCTION

Training is one of the used methods to improve the exercise performance, but too much intensive training and competition may also cause some adverse effects on the health state of sportsmen manifested in the haematological parameter values. The health benefits of engaging in regular physical activity are widely known enhanced cardio respiratory fitness, increased muscular strength and endurance and favourable cholesterol and other profiles. Nevertheless, particularly in youth sports program, the competitive sport imposes substantial energy, mechanical, mental and emotional burdens on the human.

Blood is a complex fluid and has some specific dynamics of its circulation. There are many factors affecting the blood stream such as red blood cell number, deformability, leucocyte number, plasma proteins and haematocrit. Sports performance strongly depends on the oxygen transportation capacity to supply exercising muscles. This capacity is associated with the erythrocyte values, which may thus be regularly assessed throughout the sports season (Fallon, 2004; Lesesve et al, 2000) to allow trainers and medical staff members to collect useful fitness and health related information on players. The work of skeletal muscles causes a number of functional immediate nature changes in an organism. The nature of these changes is heterogeneous, which means that they proceed faster or more slowly. The factors such as the kind of training stimulus or individual genetic conditioning to physical work decide on the nature of changes.

**Aerobic and anaerobic:** aerobic respiration is where energy is made using oxygen. This happens in activities such as running marathon. **Aerobic dance:** since 1970s the practice of aerobics namely aerobic dance workouts have been growing worldwide. Aerobic dance work outs and exercises help to improve cardiovascular capacity by increasing the overall use of oxygen in our body and allowing the heart to work with full efficiency and capacity with less effort. These aerobic workouts that done for exercise not only provide health fitness but provide improved overall level of consciousness and alertness, decreased stress level, increased cardiopulmonary health intolerance against disease and infection.

### Objective of the study:

To investigate the "effect of 6 weeks aerobic dance training on selected rheological properties of blood among inter collegiate cricket players"

### Methodology:

Subjects are randomly selected from the college cricket team who were regularly undergoing the training schedule regularly. During the last week of the session blood samples are collected before starting the activity (pre-test) and after 45 minutes of continuous activity again venous blood samples were taken (post-test). Red blood cell count, white blood cell count, haematocrit count, haemoglobin percentage, Mean Corpuscular value, Mean Corpuscular Haemoglobin, Mean Corpuscular Haemoglobin Concentration was analysed. The training protocol of this study was general conditioning exercises, weight training, speed conditioning exercises and endurance activities. Subjects agreeing to participate signed an institutionally approved consent form.

## Blood samples:

Blood samples were collected from each subject from antecubital vein and a blood sample was drawn before the activity and after the activity. EDTA coated vials (anticoagulant) were used for cell counts and immediately put on ice 4°C to 7°C temperature.

## Instruments:

Haemocytometer – RBC and WBC Count

Microhaematocrite centrifuge – Haematocrit

Sahlis haemoglobin meter – Haemoglobin concentration

### Aerobic dance protocol for six weeks (60 minutes)

Basic movements for aerobics	Basic movements for step	Repetitions
March	Basic step	8
Running	Wide step	8
Step touch	Tap up, tap down	8
Step touches front and back	Knee lift	8
Double step touch	Leg curl	8
Grapevine	Leg opening side and back	8
Side to side Knee lift	Kick , Knee lift and Leg curl repeater	8
Leg curl	Straddle up-down	
Leg opening side and back	Turn step	8
Kick side and front	Turn travel	8
Lunge side and back	Over the top	8
Squat	Across the top	8
Slide	Corner to corner	8
Jumping jacks	Lunge	8
Jumping (knee to chest)	Reverse step	8

## Results and Discussions:

**Table 2 showing the post-test values**

S.NO	NAME OF THE STUDENT	PCV	Hg	TEC	TLC	LYM	MCV/CUBIC MICRONS	MCH/MICRO GRAMS	MCHC%
1	D.SRINIVAS	47	15.2	5.46	5.9	30	86	27.8	32.3
2	P.POLINAIDU	50	16.2	6.7	6	33	74.6	24.1	32.4
3	B.POORNACHARAN	55	16.8	6.7	6.1	33	74.6	25	30.5
4	B.V.B.RAJU	48	15.2	5.4	6.2	31	88.8	28.1	31.6

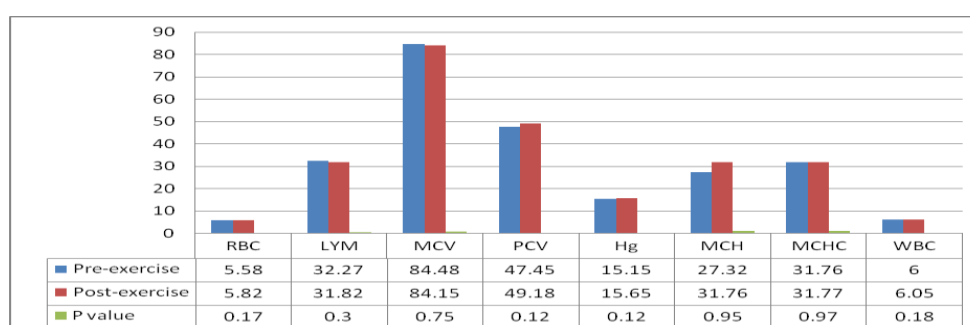
5	J.NANDA KISHORE	50	15.6	5.5	6	30	90.9	28.3	31.2
6	K.PRAVEEN	50	16	5.4	6.1	32	92.5	29.6	32
7	N.SURYA TEJA	50	16.8	6.7	6.1	33	74.6	25	33.6
8	M.VENKATESW ARLU	48	15.2	5.6	6	34	85.7	27.1	31.6
9	M.JAGADESH	47	15	5.5	6	30	85.4	31.2	31.9
10	P.SRINIVAS	50	15.2	5.7	6.2	32	87.4	26.5	30.4
11	M.NAVEEN	46	15	5.4	6	32	85.1	27.7	32

The average values of the investigated rheological parameters

Variables	Pre-exercise	Post-exercise	P value
RBC	5.58	5.82	0.17
LYM	32.27	31.82	0.3
MCV	84.48	84.15	0.75
PCV	47.45	49.18	0.12
Hg	15.15	15.65	0.12
MCH	27.32	31.76	0.95
MCHC	31.76	31.77	0.97
WBC	6.00	6.05	0.18

The below table explains about the averages and P- values of the blood samples collected from the samples. PCV- indicates the Packed Cell Volume, Hg- haemoglobin, RBC- Red Blood Cells, WBC- White Blood Cells, LYM- Lymphocytes count, MCV- Corpuscular value, MCH-Mean Corpuscular Haemoglobin, MCHC- Mean Corpuscular Haemoglobin Concentration

The histogram showing the changes in haematological variables of the players before and after the activity.



The above histogram explains about the average values of rheological variables of the players. It shows that there is a slight change in the haematocrit values after continuous activity. A highly increased Hct increases blood viscosity and there by increases the work load of the heart to pump more oxygenated blood to the muscle tissues. It therefore bears the risk of cardiac overload.

In this study, there is no significant difference in red blood cell; hematocrit, mean corpuscular volume, mean corpuscular hemoglobin, Mean Cell Hemoglobin Concentration and white blood cell were observed. The published data reveal that the intense and prolonged exercise training usually does not affect the immune system and haematological systems disorders in the college basketball players.



Most reports describing rheological changes induced by sporting activity focus on specific disciplines or special training characteristics, such as endurance or strength training. The effects of endurance sports have been extensively studied: rheological changes reported for endurance-trained athletes when compared with the normal population include decreased Hb, Hct, and RBC, associated with reticulocytosis or an increased number of young erythrocytes, characterized by lower corpuscular Hb content and a higher cell volume.

## **Conclusions:**

Despite the available information, the point that is not exactly answered is that what volume of exercise intensity can have considerable impact on hematological parameters and the changes also depend on the surrounding environment and how possible changes in blood parameters can be optimally used to increase physical work and exercise capacity. Most of the studies are done in Foreign Nationals where there are lots of variations in the diet and environment conditions as compared to the Indian conditions. Given that few papers on the effects of exercise on hematological parameters, the importance of conducting studies on this topic becomes doubled.

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## A STUDY OF EFFECTS OF RUNNING AND JUMPING PROGRAMMES ON PHYSICAL FITNESS AMONG OBESE MEN

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### INTRODUCTION

The human body is built for physical activity and movement. Throughout the ages, man has had to be physically active in order to procure his daily food and to succeed in the battle for survival. Improved standard of living and increasing affluence, however, have led to a decreased emphasis on physical fitness and locomotive power and in the industrialized world modern man has become more and more sedentary both at work and during his leisure hours. The need for physical activity, however, remains as great as ever, which is why sport is as important, particularly as a leisure pursuit.

**Training:** Training has been explained as a Programme of exercise designed to improve the skills and increase the energy capacities of an athlete for a particular event. Training has been a part of human life since ancient times. It denotes the process of preparation for some tasks. Through systematic training Programme one can improve his fitness both physically and mentally; Training is a complex behaviour, because it varies over a time frame ranging from seconds to years. There are three methods for measuring training; direct observation of training in progress or recorded on video; physiological monitoring of oxygen uptake, heart rate or blood lactate; and subjective recording via diaries or questionnaire. Direct observation is suitable for assessing short intervals of training, from a single movement thought a training session. Physi9ological monitoring is suitable only for measuring intensity of training maintained at a steady intensity for a least several of more or less uninterrupted physical activity workouts may occupy a few minutes or hours, and may be continuous exercise, a set of reps or repeated movements, or a set of sets. A complete training session usually lasts an hour or two and consists of one or more workouts. The nature of each session may vary, but after a week or so a repeated pattern of sessions known as a micro cycle usually emerges. A series of micro cycles may constitute a phase of training, for examples a build-up or specialty phase. A repeated pattern of phases or micro cycles makes up a mesocycle, and a season or macro cycle of training may consists of a repeated set of mesocycles. Finally, over a period of years training develops.

**Characteristics of Training:** The concept of training is reflected in words or terms, which are given to separate components of training (technique training, strength training) or separate methods of procedures of doing physical exercise (interval training and circuit training). Training means are various physical exercises and their objects, methods and procedures, which are used for the improvement, maintenance and recovery of performance capacity and performance readiness. Physical exercises are the physical means of training. The other means are used in addition to physical exercises or separately as per requirement. Each training means has its own specific effect on the performance capacity. This effect may be direct or indirect. Physical exercises have a direct effect on performance capacity means like physiotherapy, autogenously training has indirect effect. The series of research work done related to the present investigation have been presented in this chapter. The scanning of review of related literatures may serve as an important thing to the researcher for the interpretations of the study. A study of relevant literature is an essential step to get a full picture of what has been done and said abroad and in one's own country with regard to the problems under study. The reviews were confined to the Library, Annamalai University, Annamalai Nagar and Internet sources.



**Walking:** Ready and others made a research to find out whether the walking program reduces elevated cholesterol in women post menopause. Objective: To examine the effect of a moderate exercise regimen on total serum cholesterol, triglyceride, high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), body composition and cardiovascular fitness (VO<sub>2</sub> max) in mildly hyperlipidemia women, postmenopausal. Design: Randomized assignment to walking (n=24) or control (n = 16) groups. Setting: Community based intervention. Participants: Over 300 volunteers were screened to obtain the sample of 40 eligible women. Participants were mildly hyperlipidemia, post menopause (mean age 62.0 +/- 5.7 years), sedentary, nonsmokers and not on hormone replacement therapy. Results are reported for the 25 subjects (15 walkers, 10 controls) who completed the study. Intervention: Exercisers walked an average of 54.3 +/- 7.7 mins/day, 4.9 +/- 1.7 days/week, at an intensity of 54% maximum heart rate reserve, for six months. Participants were counseled not to change their diets. Main Results: Total serum cholesterol, triglyceride, total serum cholesterol: HDL-C ratio, weight and fat mass decreased significantly in the walkers compared with the controls (P < 0.05), as did body mass index (P < 0.01). Walking resulted in a significant increase in VO<sub>2</sub> max (P < 0.01). Changes in serum lipids were significantly related to changes in body fat, but not to change in aerobic fitness. There were no changes in dietary intake.

## SELECTION OF VARIABLES

The more fit the individual, the lower the risk. Obesity is a very common problem in our society. It refers to the condition of having an excessive amount of body fat. Obesity has multiple causes. The development of obesity is a complex interaction among genetic, psychological socio-economic, hormonal and cultural factors. Inactivity may be a far more significant factor in the development of obesity than overeating.

Physical training can alter body composition. People of all ages both male and female benefit from regular physical activity. Physical activity is important in both weight maintenance and weight loss. In addition to the calories that are expended during exercise, a substantial expenditure of calories occurs during the post-exercise period. During exercise, fatty acids are freed from their storage sites to be burnt for energy.

Regular physical activity may assist in better controlling appetite, so that caloric intake balances with caloric expenditure. Significant health benefits can be obtained by including a moderate amount of physical activity. Physical activity reduces the risk of premature mortality in general and of coronary artery disease, hypertension, colon cancer and diabetes mellitus in particular. Physical activity also improves the mental health and is important for the health of muscles, bones and joints. Thus, the physical exercise must be recognized as an essential component in any program of weight reduction or control. Walking and jogging are easy ways for most people to get regular exercise because they do not require special facilities or equipments other than good and comfortable shoes. The primary activity recommended to someone who is sedentary for a long period is walking. Jogging is also recommended for sedentary people. Hence, the investigator designed a physical exercise training Programme based on isolated and combined walking and jogging programmes for obese women.

## RELIABILITY OF THE INSTRUMENTS

To conduct the tests on selected criterion variables, instruments like stop watch, measuring tape, skinfold caliper, ormon automatic digital blood pressure monitor were produced from Human Resources Research laboratory, Department of Physical Education and Sports Sciences, Annamalai University. These instruments were all in good condition. They were purchased from the reliable companies and their calibration was accepted as accurate enough to serve the purpose of this study. The biochemical variables were tested in the medical laboratory, Rajah Muthaiah Medical College, Annamalai University, with the qualified medical personnel.

## RELIABILITY OF THE DATA

To ensure the reliability of the data, the test and re-test method was followed. Ten subjects were randomly selected from Annamalai University, and they were tested twice by the same testers under similar condition on each criterion variable.





## BENIFITS OF FITNESS

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### 1.INTRODUCTION

What does it mean to be fit? What does fitness mean? Fitness means something a little different to everyone. To me, it is more than just what time you can do a race in, or how many weights you lift. Fitness is an increased enjoyment in life. Fitness has so many benefits: getting sick less often, relieving stress, burning calories, better sleep, improved disposition, and so many more

**2.ABOUT FITNESS:** Fitness is defined as the quality of being suitable to perform a particular task. Around 1950, perhaps consistent with the Industrial Revolution and the treatise of World War II, the term fitness increased in western vernacular by a factor of ten.[2] Modern definition of fitness describe either a person or machine's ability to perform a specific function or a holistic definition of human adaptability to cope with various situations. This has led to an interrelation of human fitness and attractiveness which has mobilized global fitness and fitness equipment industries. Regarding specific function, fitness is attributed to personnel who possess significant aerobic or anaerobic ability, i.e. strength or endurance. A holistic definition of fitness is described by Greg Glassman in the CrossFit journal as an increased work capacity across broad times and modal domains; mastery of several attributes of fitness including strength, endurance, power, speed, balance and coordination and being able to improve the amount of work done in a given time with any of these domains.[3] A well rounded fitness program will improve a person in all aspects of fitness, rather than one, such as only cardio/respiratory endurance or only weight training. A comprehensive fitness program tailored to an individual typically focuses on one or more specific skills,[4] and on age-[5] or health-related needs such as bone health.[6] Many sources[7] also cite mental, social and emotional health as an important part of overall fitness. This is often presented in textbooks as a triangle made up of three points, which represent physical, emotional, and mental fitness. Physical fitness can also prevent or treat many chronic health conditions brought on by unhealthy lifestyle or aging.[8] Working out can also help some people sleep better and possibly alleviate some mood disorders in certain individuals.[9] The U.S. Centers for Disease Control and Prevention encourages the adult public, ages 18 to 64, to engage each week in at least one and a quarter hours of vigorous-intensity aerobic activity or two and a half hours of moderate-intensity aerobic activity; that time can be met in any increments.[10]

### 3.FITNESS & IMPORTANT IN OUR DAILY ACTIVITES:

**No. 1:** Exercise controls weight Exercise can help prevent excess weight gain or help maintain weight loss. When you engage in physical activity, you burn calories. The more intense the activity, the more calories you burn. You don't need to set aside large chunks of time for exercise to reap weight-loss benefits. If you can't do an actual workout, get more active throughout the day in simple ways — by taking the stairs instead of the elevator or revving up your household chores.

**No. 2:** Exercise combats health conditions and diseases Worried about heart disease? Hoping to prevent high blood pressure? No matter what your current weight, being active boosts high-density lipoprotein (HDL), or "good," cholesterol and decreases unhealthy triglycerides. This one-two punch keeps your blood flowing smoothly, which decreases your risk of cardiovascular diseases. In fact, regular physical activity can help you prevent or manage a wide range of health problems and concerns, including stroke, metabolic syndrome, type 2 diabetes, depression, certain types of cancer, arthritis and falls.

**No. 3:** Exercise improves mood



Need an emotional lift? Or need to blow off some steam after a stressful day? A workout at the gym or a brisk 30-minute walk can help. Physical activity stimulates various brain chemicals that may leave you feeling happier and more relaxed. You may also feel better about your appearance and yourself when you exercise regularly, which can boost your confidence and improve your self-esteem.

#### **No.4: Exercise boosts energy**

Winded by grocery shopping or household chores? Regular physical activity can improve your muscle strength and boost your endurance. Exercise and physical activity deliver oxygen and nutrients to your tissues and help your cardiovascular system work more efficiently. And when your heart and lungs work more efficiently, you have more energy to go about your daily chores.

#### **4.INVOLED MOTOR QUALITIES IN FITNES:**

**Coordination:** Coordination describes the synchronization of your senses and your body parts in a way that enhances motor skills. Volleying a table tennis ball is an example of hand-eye coordination. A variety of tests measure coordination, including juggling or hitting a ball.

**Agility :**Agility is the capacity to change course, controlling the direction and position of your body while maintaining your momentum. Changing course while sprinting to hit a tennis ball is an example of agility. Sports coach Brian Mackenzie offers a simple zig-zag run to test agility.

**Speed:** Speed is the facility to move your body swiftly. Speed is usually associated with running, but other exercises, like throwing or kicking a ball, depend on moving your arms or legs rapidly. Some athletic coaches measure speed with a 40-yard dash. **Strength** is a type of physical exercise specializing in the use of resistance to induce muscular contraction which builds the strength, anaerobic endurance, and size of skeletal muscles.

When properly performed, strength training can provide significant functional benefits and improvement in overall health and well-being, including increased bone, muscle, tendon and ligament strength and toughness, improved joint function, reduced potential for injury,[1] increased bone density, increased metabolism, increased fitness,[2][3] improved cardiac function, and improved lipoprotein lipid profiles, including elevated HDL ("good") cholesterol.[4] Training commonly uses the technique of progressively increasing the force output of the muscle through incremental weight increases and uses a variety of exercises and types of equipment to target specific muscle groups. Strength training is primarily an anaerobic activity, although some proponents have adapted it to provide the benefits of aerobic exercise through circuit training.

Sports where strength training is central are bodybuilding, weightlifting, powerlifting, strongman, Highland games, shotput, discus throw, and javelin throw. Many other sports use strength training as part of their training regimen, notably American football, wrestling, track and field, rowing, lacrosse, basketball, poledancing (or polefitness), hockey and football. Strength training for other sports and physical activities is becoming increasingly popular. **Endurance** (also related to sufferance, resilience, constitution, fortitude, and hardiness) is the ability of an organism to exert itself and remain active for a long period of time, as well as its ability to resist, withstand, recover from, and have immunity to trauma, wounds, or fatigue. It is usually used in aerobic or anaerobic exercise. The definition of 'long' varies according to the type of exertion – minutes for high intensity anaerobic exercise, hours or days for low intensity aerobic exercise. Training for endurance can have a negative impact on the ability to exert strength[1] unless an individual also undertakes resistance training to counteract this effect. Many personnel consider endurance to be an indicator of progress, when strength and cardio training. A person is able to accomplish or withstand a higher amount of effort than their original capabilities means their endurance is increasing expressing improvement. In looking to improve ones endurance they may slowly increase the amount of repetitions or time spent, if higher repetitions are taken rapidly muscle strength improves while less endurance is gained.[2] Increasing endurance has been proven to release endorphins resulting in a positive mind. The act of gaining endurance through physical activity has been shown to decrease anxiety, depression, and stress, or any chronic disease in total.[3] Although a greater endurance can assist the cardiovascular system it does not imply that any cardiovascular disease can be guaranteed to improve.[4] "The major metabolic consequences of the adaptations of muscle to endurance



exercise are a slower utilization of muscle glycogen and blood glucose, a greater reliance on fat oxidation, and less lactate production during exercise of a given intensity." The term stamina is sometimes used synonymously and interchangeably with endurance. Endurance may also refer to an ability to keep going through a tough situation involving hardship, stress, etc. (see patience)

**5: LACK OF FITNESS & ITS IMPACT IN OUR LIFE:** When it comes to being couch potatoes, Americans aren't alone. Physical inactivity has become a global pandemic, say researchers in a series of related papers published in the journal *Lancet*. According to one of the reports, lack of exercise causes as many as 1 in 10 premature deaths around the world each year — roughly as many as smoking.

About 5.3 million of the 57 million deaths worldwide in 2008 could be attributed to inactivity, the new report estimates, largely due to four major diseases: heart disease, Type 2 diabetes, breast cancer and colon cancer. The study finds that if physical inactivity could be reduced by just 10%, it could avert some 533,000 deaths a year; if reduced by 25%, 1.3 million deaths could be prevented. Say we got everyone off the couch and eliminated inactivity altogether: the life expectancy of the world's population would rise by about 0.68 years (more, if you discount those who were already active), comparable to the effect of doing away with smoking or obesity.

**6: FITNESS IN SPORTS :** Basic fitness can be classified in four main components: strength, speed, stamina and flexibility. However, exercise scientists have identified nine components that comprise the definition of fitness (Tancred 1995)[1]:

- **Strength** - the extent to which muscles can exert force by contracting against resistance (e.g. holding or restraining an object or person)
- **Power** - the ability to exert maximum muscular contraction instantly in an explosive burst of movements. The two components of power are strength and speed. (e.g. jumping or a sprint start)
- **Agility** - the ability to perform a series of explosive power movements in rapid succession in opposing directions (e.g. ZigZag running or cutting movements)
- **Balance** - the ability to control the body's position, either stationary (e.g. a handstand) or while moving (e.g. a gymnastics stunt)
- **Flexibility** - the ability to achieve an extended range of motion without being impeded by excess tissue, i.e. fat or muscle (e.g. executing a leg split)
- **Local Muscle Endurance** - a single muscle's ability to perform sustained work (e.g. rowing or cycling)
- **Cardiovascular Endurance** - the heart's ability to deliver blood to working muscles and their ability to use it (e.g. running long distances)
- **Strength Endurance** - a muscle's ability to perform a maximum contraction time after time (e.g. continuous explosive rebounding through an entire basketball game)
- **Co-ordination** - the ability to integrate the above listed components so that effective movements are achieved. Of all the nine elements of fitness cardiac respiratory qualities are the most important to develop as they enhance all the other components of the conditioning equation.

**7. FITNESS IN EDUCATION:** it is mandatory for pupils to take a total of 3 hours of physical education through primary and secondary level schools [citation needed]. In Portugal, pupils from primary school could optionally join PE as an extra-curricular activity. From middle school to secondary school, pupils must participate in PE classes 2 hours per week. [citation needed]. In Singapore, pupils from primary school through junior colleges are required to have 2 hours of PE every week, except during examination seasons. Pupils are able to play games like football, badminton, captain's ball, and basketball during most sessions. Unorthodox sports such as touch ball, fencing, and skateboarding are occasionally played. In more prestigious secondary schools and in junior colleges, sports such as golf, tennis, shooting, and squash are played. A compulsory fitness exam, NAPFA, is conducted in every school once every year to assess the physical fitness of the pupils. [citation needed] Pupils are given a series of fitness tests (Pull-ups/Inclined pull-ups for girls, standing broad jump, sit-ups, sit-and-reach and 1.6 km for primary [10-12 year-olds]/2.4 km for secondary and junior college levels [13-

18 year-olds)). Students are graded by gold, silver, bronze or fail. NAPFA for pre-enlistees serves as an indicator for an additional 2 months in the country's compulsory national service if they attain bronze or fail.

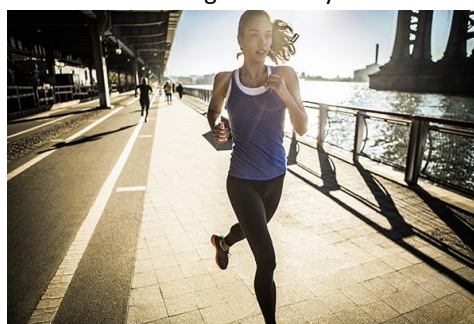
In Malaysia, pupils from primary schools to secondary schools are expected to do 2 periods or 1 hour of PE throughout the year except a week before examination. In most secondary schools, games like badminton, sepak takraw, football, basketball and tennis are available. Pupils are allowed to bring their own sports equipment to the school with the authorization of the teacher. In most secondary schools, physical exams are rarely done, but schools record pupils' height, weight and number of push-ups they can do.[citation needed]

In Philippines, PE is mandatory for all years. Unless, the school gives the option for a student to do the Leaving Certificate Vocational Programme instead for fifth and sixth year.



Indonesian high school students playing the traditional game "Benteng" In Indonesia, students ranging from Kindergarten to High School have PE integrated with their curriculum. Kindergarten until Grade 3 of Elementary students have gymnastics, starting from Grade 4 of Elementary School, students will be introduced into traditional martial arts Pencak Silat and some team games such as badminton, tennis, soccer, futsal, rounders, basketball, etc. Starting from Junior High School, Both gender are separated during PE class. PE find its place in extracurricular forms, where students can specialize themselves in one kind of sports they choose. Sport Festival can be held during vacuum period, usually after examination. At this time students can compete each other by bringing own class' flag. Some universities such as ITB include PE in curriculum for freshmen. In the Philippines, some schools have integrated martial arts training into their physical education curriculum

**8: KNOW YOUR FITNESS:** Calculate Your "Fitness Age"—It May Predict How Long You'll Live



How old are you? Before you jump to the quick answer—i.e. the one you've celebrated every year with a progressively increasing number of candles and cake—know that you have another, even more important age: your fitness age. First created by researchers from the Norwegian University of Science and Technology, your fitness age takes your respiratory health into account and is made up of different components including your heart rate, waist circumference, exercise routine, and more. Go ahead and calculate it here. Okay, so why should you even care about the number that pops up on your screen? Because it may predict how long you'll live, the researchers found, to an even better extent than your actual age can. The lower your fitness age is from your actual age, the higher your chances of living a long life. Plus, if you're not getting the number you want when you plug in your stats, up your exercise—your fitness age can decrease over time.

**9: LATEST TRADITIONS IN FITNESS:**

Fitness Trends :6 Fitness Trends for 2015 That Have the Experts Buzzing

The result was an incredibly thoughtful and well-informed discussion about what healthful living looks like today and what it will look like tomorrow. Here are some key themes to look out for in 2015 according to the experts.<sup>5</sup> Fresh Ways To Get Fit This Fall



You're finally ready to hunker down and get fit. Good news: We've got just the class, gear and ideas for you. By Corrie Pikul @media o...

## Old Fitness Tools Get Trendy Upgrades



## Everything You Wanted To Know About The Latest Exercise Trends



## Consultation:

The initial Fitness Consultation is a great way to get started with your Wellness membership! It typically lasts about 1 hour





## **A STUDY ON EFFECT OF PROGRESSIVE MUSCLE RELAXATION TRAINING ON COMPETITIVE ANXIETY OF FEMALE INTER – COLLEGIATE KABADDI PLAYERS**

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### **INTRODUCTION**

The present study is mainly concerned with Kabaddi players, who are participated in the high level competition. Now a days, the game Kabaddi is becoming as a professional sport rather than the competitive sport. So the competitiveness among the Kabaddi players is growing up day by day with different color. Reason for such competitiveness is arise naturally among the players, because of pressures such as equal competition, concern about fulfilling the expectation of their Physical Directors, Coaches, parents and peer group and personal needs. It leads mental and physical stress.

In consideration of the previous evidence that psychological skill training can reduce competitive anxiety, the present study will further-investigate the impact of progressive muscle relaxation, a type of psychological skill training, on a-state competitive anxiety with an emphasis on the three sub-levels of competitive anxiety. Cognitive anxiety, somatic anxiety and state self confidence will be examined. It will be beneficial to test if in fact, psychological skill training such as relaxation training lowers competitive anxiety and if so which of the three sub-scales are most affected.

### **HYPOTHESIS**

It was hypothesized that Psychological skill training such as progressive muscle relaxation training lowers competitive anxiety.

### **OBJECTIVES OF THE STUDY**

The objective of the study was to find out the effect of progressive muscle training on competitive anxiety of Female Inter -Collegiate Kabaddi players.

The impact of anxiety on sport performance has become an interest in the field of Sport Psychology within the last decade. Moreover the present study will examine competitive anxiety and the impact of relaxation training. The variable being manipulated is the relaxation training, which is defined as progressive muscle relaxation .Progressive muscle relaxation generates relaxation by systematically progressing through skeletal muscles. The variables being measured are the subject's trait anxiety level, competitive anxiety level and the three sub -levels of state anxiety: somatic anxiety, cognitive anxiety, and state self confidence.

### **METHODS**

The purpose of the study was to find out the effect of progressive muscle relaxation training on competitive anxiety of Female Inter - Collegiate Kabaddi players. To achieve the purpose of the study twenty four Female Kabaddi players were selected from V.K.RCollege; Buddhavaram during the academic year 2012-2013.Their age was ranged from 18 to 22 years. The present study is an experimental one and to test the effects of varied forms of intervening strategies, the care was taken in distributing the samples to each experimental group. For this the selected samples (N=24) were divided in to two equal groups. Group one was considered as progressive Relaxation training Group (PRTG) in which they underwent progressive muscle relaxation practices. Group II was considered as control group, they are doing the regular Physical&Skill practice. The experimental group were given training for 3 days a week and for six weeks in total.

### **RESEARCH TOOL USED IN THIS STUDY**

**Competitive sport Anxiety Inventory -2**



Competitive state anxiety was assessed by using the Competitive state Anxiety Inventory -2(CASAI - 2, Martens et al.1990) which is a self report, Psychometric state anxiety inventory, consisting of 27 items. The CSAI - 2 normally takes less than five minutes to complete and was administered ten minutes before competition and practice session. The CSAI - 2 assesses two components of state anxiety, cognitive worry and somatic anxiety, and a related constructs self confidence.

## PROGRESSIVE RELAXATION TRAINING

The Kabaddi players were comfortable with the breathing technique. It is systematic technique developed by Jacobson. A Kabaddi player is asked to inhale and tense a specific muscle group approximately 7-10 seconds followed by releasing those 15-20 seconds. The Kabaddi player then exhales and releases the tension from the specified muscle group, concentrating on the feelings of relaxation. This procedure is repeated for a number of muscle groups, with each group begin tensed and relaxed three times.

## RESULTS and DISCUSSION

The study was designed to find out the effects of progressive muscle relaxation training on competitive anxiety of Female Inter - Collegiate Kabaddi players. The objective framed in the present study to test the data collected on variables: cognitive anxiety, somatic anxiety and self confidence. As one of the objectives of the present study was to test the effects of progressive muscle relaxation training on competitive anxiety, the initial test means and final test means were tested treatment wise by using the paired sample t- test.

**TABLE-1: Significance of Mean Gains/Losses between Pre and Post Test of Progressive Relaxation Training (PRTG) on Competitive Anxiety of Kabaddi Players**

Variables	Pre-test Mean	Post-test Mean	Mean Diff.	Standard Error Mean	t'- ratio
Cognitive Anxiety	21.50	20.08	1.42	.148	9.53*
Somatic Anxiety	22.08	20.50	1.58	.148	10.65*
Self Confidence	21.25	22.75	-1.50	.151	9.95*

\*Significance at 0.05 level.

**Table-1 Indicates that the obtained 't' ratios Were:** 9.53 for cognitive anxiety, 10.65 for somatic anxiety, 9.95 for self confidence. The obtained 't' ratios on competitive anxiety, when compared with critical value of 2.201 for degrees of freedom of 111 it was found that the mean gains and mean losses statistically significant. Resulting of these confirm that six week practice of progressive relaxation training produced a significant improvement in cognitive anxiety(1.42;p<0.05),somatic anxiety(1.58;p>0.05),self confidence(-1.50;p<0.05),statistically significant and explained its effect positively.

**TABLE - 2: Significance of Mean Gains/Losses between Pre and Post Test of Control Group on Competitive Anxiety of kabaddi Players**

Variables	Pre -test Mean	Post-test Mean	Mean Diff.	Standard Error Mean	V - ratio
Cognitive Anxiety	21.15	20.85	0.30	.923	1.45
Somatic Anxiety	21.25	20.85	0.40	.233	1.71
Self Confidence	21.50	21.75	-0.25	.910	1.22

**Table-2 indicates that the obtained' ratios were:** 1.45 for cognitive anxiety, 1.71 for somatic anxiety, and 1.22 for self confidence. The obtained 't' ratios on competitive anxiety, when compared with critical value of 2.201



for degrees of freedom of 111 it was found that the mean gains and mean loses statistically not significant. Resulting of these confirm that so it was found that the control group did not show significant improvement in cognitive anxiety(0.30; $p < 0.05$ ), somatic anxiety (0.40; $p > 0.05$ ), self confidence(-0.25; $p < 0.05$ ), statistically not significant.

## CONCLUSION

From the results of comparative effect among the progressive relaxation training, and control group on criterion Variables, it was concluded that players belong to progressive relaxation training is performed better in cognitive anxiety, somatic anxiety and self confidence as compared to control group.

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## THE IMPORTANCE OF FLEXIBILITY & MOBILITY IN OUR LIFE

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### Flexibility

#### THE BENEFITS OF FLEXIBILITY & MOBILITY

- Enhance physical fitness.
- Stretching can increase an athlete's mental and physical relaxation.
- Stretching can optimize an athlete's learning, practice and performance of many types of skilled movements.
- Stretching can promote an athlete's mental and physical relaxation.
- Stretching can reduce an athlete's risk of joint sprain or muscle strain.
- Stretching can reduce an athlete's risk of back problems.
- Stretching can reduce an athlete's muscular soreness.
- Stretching can reduce an athlete's muscular tension.

#### DIFFERENT METHODS OF STRETCHING

- **STATIC STRETCHING:** Static stretching involves holding a position.
- **BALLISTIC STRETCHING:** this stretching involves bobbing, bouncing, rebounding, and rhythmic types of movements.
- **PASSIVE STRETCHING:** this technique in which you are relaxed and make no contribution to the range of motion.
- **ACTIVE STRETCHING:** this technique is accomplished using your own muscles and without any assistance from an external force.
- **STATIC STRETCHING:** Static stretching involves holding a position.
- **BALLISTIC STRETCHING:** this stretching involves bobbing, bouncing, rebounding, and rhythmic types of movements.
- **PASSIVE STRETCHING:** this technique in which you are relaxed and make no contribution to the range of motion.
- **ACTIVE STRETCHING:** this technique is accomplished using your own muscles and without any assistance from an external force.
- **PNF Stretching:** this stretching can be implemented to improve your range of motion.
- **Ex. Contract-Relax technique,**
- **Contract-Relax-Contract Technique**

#### Don't stretch

- Recent fracture of a bone.
- Joint injury, ligament injury.
- Recent sprain or strain
- Suffer certain vascular or skin diseases.
- There is a loss of function or decrease in range of motion.

#### Surya Namaskra













- Surya Namaskar calms the mind and helps improve concentration.

- it boosts endurance power and reduces the feeling of anxiety and restlessness, especially during exams.
- Regular practice of Surya Namaskar gives strength and vitality to the body.
- It is the best workout for muscles and improves flexibility in spine and in limbs for our future athletes.
- Children as young as 5-year-olds can start doing Surya Namaskar daily.

## Surya Namaskar

- The regular practice of Surya Namaskar improves circulation of blood throughout the body, maintains health, and helps one remain disease-free.
- There are numerous benefits of Surya Namaskar for the heart, liver, intestine, stomach, chest, throat, legs.
- From head to toe, every part of the body is greatly benefitted by Surya Namaskar, which is why it is highly recommended by all yoga experts.
- Postures act as a good link between warm-ups and asanas and can be done any time on an empty stomach.
- However, morning is considered to be the best time for Surya Namaskar as it revitalizes the body and refreshes the mind, making us ready to take on all tasks of the day.
- If done in the afternoon, it energizes the body instantly and if done at dusk, it helps you unwind.
- When done at a fast pace, Surya Namaskar is an excellent cardiovascular workout and a good way to lose weight.

## Surya Namaskra

SURYA NAMASKARA (SUN SALUTATION)			
POSTURE	MANTRA	CONCENTRATION	DIAGRAM
1. Pranamasana	Om Mitraya Namaha OM HRAAM	Heart Centre ANAHATA Colour: Sky blue	 INHALE & EXHALE
2. Hasta Uttanasana	Om Ravaye Namaha OM HREEM	Neck Centre VISHUDDHI Colour: Mauve (purple)	 INHALE
3. Pada Hastasana	Om Suryaaya Namaha OM HROOM	Base of the spine SWADHISTANA Colour: Vermillion	 EXHALE
4. Ashwa Sanchalanasana	Om Bhaavaye Namaha OM HRAIM	Eyebrow Centre AJNA Colour: Silver	 INHALE
5. Parvatasana	Om Khagaaya Namaha OM HRAUM	Neck Centre VISHUDDHI Colour: Mauve (purple)	 EXHALE
6. Ashtanga Namaskara	Om Pushne Namaha OM HRAHA	Behind Navel MANIPUR Colour: Yellow	 INHALE & EXHALE
7. Bhujangasana	Om Hiranyagarbhaya Namaha OM HRAM	Base of the spine SWADHISTANA Colour: Vermillion	 INHALE
8. Parvatasana	Om Marichaye Namaha OM HREEM	Neck Centre VISHUDDHI Colour: Mauve (purple)	 EXHALE
9. Ashwa sanchalanasana	Om Adityaya Namaha OM HROOM	Eyebrow Centre AJNA Colour: Silver	 INHALE
10. Pada Hastasana	Om Savitre Namaha OM HRAIM	Base of the spine SWADHISTANA Colour: Vermillion	 EXHALE
11. Hasta Uttanasana	Om Arkaaya Namaha OM HRAUM	Neck Centre VISHUDDHI Colour: Mauve (purple)	 INHALE
12. Pranamasana	Om Bhaskaraya Namaha OM HRAHA	Heart Centre ANAHATA Colour: Sky blue	 EXHALE & INHALE

- The regular practice of Surya Namaskar improves circulation of blood throughout the body, maintains health, and helps one remain disease-free.
- There are numerous benefits of Surya Namaskar for the heart, liver, intestine, stomach, chest, throat, legs.
- From head to toe, every part of the body is greatly benefitted by Surya Namaskar, which is why it is highly recommended by all yoga experts.
- Postures act as a good link between warm-ups and asanas and can be done any time on an empty stomach.
- However, morning is considered to be the best time for Surya Namaskar as it revitalizes the body and refreshes the mind, making us ready to take on all tasks of the day.
- If done in the afternoon, it energizes the body instantly and if done at dusk, it helps you unwind.
- When done at a fast pace, Surya Namaskar is an excellent cardiovascular workout and a good way to lose weight.



## ROLE OF SPORTS IN STUDENTS LIFE

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### ABSTRACT

Survival and success of man has always depended upon his mental and physical energy. History tells us that only those nations could enjoy supremacy over others which more powerful and more active than their rivals. Therefore to develop standard of physical fitness nations of the world gave due importance to sports and games. In ancient Greece, such festivals were regularly held in which events of sports and games were arranged. The present day Olympic Games are conducted in the memory of Olympiads of the ancient Greece. Today in the modern age the importance of sports and games is much more than it was in the past. The impact of machine growing comforts of life, sports and games provide us the opportunities of physical exercise along with enjoyment. It is obvious that healthy individuals make a healthy nation and nobody can deny that, "Health is wealth".

### I INTRODUCTION

Every school and college has its sports day when annual competition in the games and sports are held. There are cricket clubs, hockey associations, swimming clubs, boating clubs, football clubs and athletic forces of the country sports and games hold an unrivalled place. The sports are popular among all classes of people; the reason is that sports influence a man physically and mentally as well as morally. In all kind of sports, the muscles of the body are engaged and so the body is developed. Different organs of the body are given exercise and as a result, eyes become sharper' hearing is made keener and so on. It is quite obvious how sports influence the body but sports do much more. As Hippocrates said, "sport is a preserver of health"

Playing games and sports has important advantages in a way that it socializes our lives. For example, when people intend to play basketball, they do it in groups. That will give them team spirit and a chance to identify each other very well and make friendships and relationships.

So it is true that any of sports and games has advantages, since they decrease the stress, teach us skills that we need, satisfy us, and socialize our lives. And to get the most of the benefits, they should be practiced daily.

In students life extracurricular activities empower them to make their own active decisions and also help them to gain an accurate experience, skills, and confidence to lead them on the path of their future. It is truly considered that through participation in sports and different games, students learn co-operation, teamwork, leadership methods and time management. Games also help students by discovering their hidden talents, help them interact with different people and make them learn about many things outside their own environment. Well, they are also an easy and interesting way to learn appreciation for new different activities. There are some types of games like billiards, board games and golf etc which are considered recreational activities and they increase our mental, physical skills while enjoying the excitement of our shots. In real sense, games affect a person's psychological state of mind which leads to excitement and brings out the feeling of one being proud for an accomplishment. It also increases our capabilities and guides us in developing a better understanding of our own-selves.

Games are creative and mindful expression of the human spirit which comes out through the creation of activity that has an entertaining, flexible, instructive and competing element. It explores and test people's



skills, efforts and invites them to develop new ways in managing the obstacles which stops them for attaining the game's goal. Games are the positive experience which helps in the strengthening of our body and mind. Some games are also considered as structured activities like cycling, cricket, swimming and football etc which helps us to take active decisions and sharpens our thinking process also.

## **II Advantages of Sports**

**COMPETITION FACTOR :** It generates healthy, fair and strong spirit of competition. It also conducts that positive competition is the best and active way of competition in students life.

**DISCIPLINE FACTOR :** It makes the child more active, patient and disciplined.

**UNITY FACTOR :** It teaches us about teamwork, sense of belonging and unselfish play. And also it encourages us to play for team rather than for our personal accomplishment.

**STRENGTH FACTOR :** It keeps our body in good shape and always give strength to our physical fitness. It also tones up muscles and strengthen the bones of our body.

**CONFIDENCE FACTOR :** It boosts our morale when we perform and also when we excel towards particular skills. On other hand it improves our self esteem and body postures as well, which makes us feel more confident and determined.

**ENERGY & BUILDING FACTOR :** It improves our body immune system which gives us good health and body. It also channelize and maintain our physical and mental energy in a more strong, active and positive manner. It gives us lot of inspiration and energizes our body.

## **III Significance of Games in Student's Life**

Games have great and significant value in student's life. It is truly believed that the foundations for good and successful life are laid in the school always. The sport field and medium of different games teaches many optimistic things to the student's in life. It also develops strong physique, team spirit, valiant will-power, sportsman ship, cheerful nature, good sense of humor and positive attitude among students. Well, all these are important and useful traits of successful and meaningful life. All the students should study properly and diligently and still take parts in games and sports to achieve an all-rounder and ideal personality in their life. In the field of sports a student learn etiquettes, manners, positive attitude and also the capacity to face victory and defeat in a good spirit. This spirit gives an impartial and unbiased outlook in-front of all others.

Games and Sports give us encouragement to face all the hard challenges of life. It provides us physical strength which is always needed for doing our work. It is conducted that without games, people usually becomes dull, boring, pessimistic and failure in life. There are different types of games and sports in life, but few of them are very much significant like running games – rugby, football, hockey and race etc which develops our agility power. Another is jumping games like – volleyball, badminton and basketball etc which increases our height and also reduce our weight. Well, both games are also an important part of education and help the students in the development of the physique and mind. Games teach us value of discipline and sportsmanship in life. It also helps in the development of our character and positive outlook. Well, syllabus of schools and colleges should be planned in such a manner that studies and games can be balanced for developing out the personality of the students.

Games play an important and valuable role in student's life. The essence of games in student's life is for providing them a creative environment which promotes their individuality, mental ability, thinking power and their all efforts came into existence. Games always enhance the abilities and skills of children and develop their challenging spirits. It helps us in the development of healthy mind and fit body. It is truly observed that healthy mind resides in a healthy body, so games should be practiced on a regular basis among all the students.

Games and sports are a necessary part of education. The students can build their health in good shape by playing different games. It is truly said that Education without games is incomplete. It teaches us discipline, patience and sportsmanship. It also provides a good excitement and enjoyment in the dull and boring life of students. The aim of education is the all-round development of a complete personality of a person so, physical





aspect of a student should not be neglected. As, we all know that development of mind and body are equally important in the way of good education. Games and sports are an integral part of education that's why without physical training, exercise and games – education will be incomplete at all. Well, along with the education, games also prepare all of us to stand up and face all the hard challenges of life. While playing games, students will be taking good intake of oxygen, their blood circulation will increase and greater digestion will be there.

Games and sports teach the students to co-operate with one another and achieve success in life. They develop our skills and abilities to get the best and maximum output from us. They also teach us values of obedience, manners and strict discipline. It is quite very important for all of us to follow all the rules and regulations of games because it helps us for becoming professionals, good leaders and disciplined citizens. It teach us fair play and to keep faith in equality and justice. They also enable us in a positive manner to take defeat and victory both in a cheerful and appreciating way in life. Games also provide us the best use of our leisure time. They are proved real boon and blessing for all students. Games also develop and promote patriotism and national integration among people in various different forms of playing.

#### **IV Conclusion**

It is the responsibility of schools and college administration to train all the students in different games and sports from the level of primary section. It is conducted truly that books develop our mind, but games develop our body. Games and sports are the best medium for achieving all the targets of education and health in schools and colleges. Rather than education, games also provide mental, physical, emotional and psychological development of an individual student. For bringing up a healthy spirit of competition among the students, for building up decision making skill and also to ensure all-rounder personality of a student – games and sports have been introduced and are applicable now in every school and colleges.

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## IMPACT OF SELF TALK AND IMAGERY WITH SKILL PRACTICE ON SHOOTING ABILITY AMONG BASKETBALL PLAYERS

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### ABSTRACT

The purpose of the present study was to find out the impact of self-talk and imagery with skill practice on shooting ability among the basketball players. The investigator randomly selected 30 college women basketball players from YMCA College of Physical Education, Nandanam, Chennai - 35. The age group of subjects was between 17 to 23 years. They were divided into two equal groups based on their initial performance in shooting ability. The shooting ability as dependent variables and six weeks imagery training was independent variable for this study. Random group design was used in this study. The groups were categorized to the training programme. Group-I underwent self-talk and imagery training and group-II served as the control group. The experimental group subjects had their training programme for a period of 6 weeks. To find out whether there was any significant different between the pre-test and post-test for the two groups means dependent "t" ratio was used. The result of the study showed that the training programme had a significant improvement in the shooting ability.

**Key Words:** Self-talk and Imagery, Basketball, Shooting ability

### INTRODUCTION

Basketball is recognized as a complex activity demanding skillful action and quick reflexes of the individual. The skills of the game are pleasurable and provide immediate rewards. Everyone enjoys making a good shot on a fine pass. It is a thrill to release the ball with finesse and see it pass through the hoop or to execute an excellent shooting on pass, on clever fake of an agile maneuver or defensive rebound. Basketball player is required to possess rich quality of various skills besides great variety of athletic traits to be successful in this vigorous court game.

### SELF TALK

Self talk is a technique which is borrowed from meditation practice and the use of positive affirmation that is use regularly in the applied sport setting is the repetition of statements. e.g. I' m feeling fit and ready to go or I feel relaxed and happy with my form.

### IMAGERY

Imagery is visualization and it is also known as mental rehearsal.

Visualization is used primarily as a training tool, one that improves the quality of athletic movement, increases the power of concentration.

### METHODOLOGY

The investigator randomly selected 30 college women basketball players from YMCA College of Physical Education, Chennai. The age group of subjects was between 17 to 24 years. They were divided into two equal based on their initial performance in shooting ability. Shooting skill in basketball was considered for this research. Johnson ability test(field goal speed test). The shooting ability as dependent variable and six weeks self-talk and imagery training as independent variable for this study.

Random group design was used in this study. The subjects were divided into two equal groups with a number of 15 members in each. The groups were categorized to their training programme. Group-I underwent self-talk and imagery training and group-II served as the control group. Subjects in group-II did not undergo any training

protocol but they were allowed to do their regular training. The experimental group subjects had their training programme for a period of 6 weeks. None of the players were practicing any other specialized training other than their regular schedule.

## RESULTS AND DISCUSS ON

### RESULTS

Since the groups were equated based on initial basketball i.e. pre-test, the final(post-test) mean score were compared for the effect of self-talk and imagery training on shooting ability.

Table – I shows the final mean difference, standard deviation, standard error and obtained 't' values between experimental group and control group on shooting ability in basketball players.

**Table-1: Final Mean, Mean Difference, Standard Deviation, Standard Error of the Mean and 't' Value of Control Group and Experimental Group in Shooting Ability in Basketball**

Groups	Mean	MD	SD	SDM	't'
Experimental Group	12.27	2.8	3.03	0.50	5.6
Control Group	9.47		2.09		

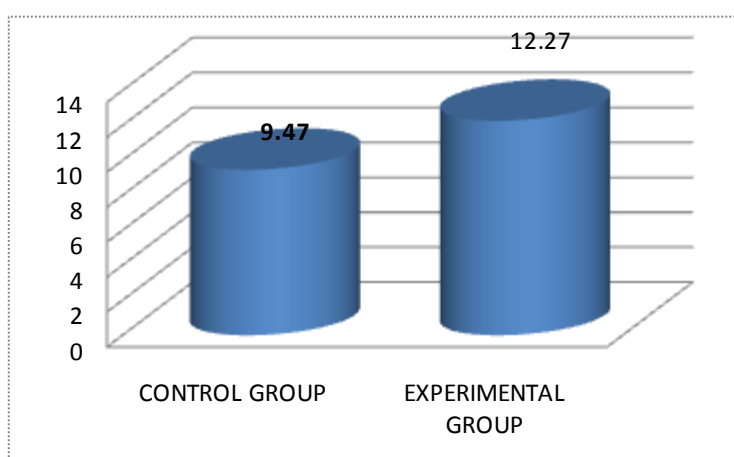
't' Table(14)=2.149 \*Significant of 0.05 level.

Table-1 showed the final mean value of control and experimental groups were 9.47 and 12.27 respectively on shooting ability in basketball. The mean difference 2.8 was in favor of the experimental group.

The obtained 't' value 5.6 was greater than the required' value of 0.05 level of significance. So the experiment group was better than the control group in shooting ability in basketball.

The final mean values of experimental group and control group are presented in figure-1 through a bar diagram for better understanding.

**FIGURE - I: Bar diagram showing the Mean Value difference for the Control Group and Experimental Group of the Shooting Ability among Basketball players**



## DISCUSSION

The result of this study proved that the obtained 't' value of 5.6 was greater than the required 't' value 2.145 to be significant at 0.05 level. Because self-talk and imagery training is the mental practice of a skill or given task without actually doing it. Imagery involve more than visualization, it includes all other sense as



well. Imagery is a powerful tool when use correctly. It can provide an edge in enhancing physical performance and is useful in both pre competitive situations

## CONCLUSION

It was concluded that six weeks self-talk and imagery training significantly improved the shooting ability in the basketball players. It was hypothesized that imagery training would improve shooting ability among basketball players was accepted.

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## COMPARISON OF SELECTED SPEED AND STRENGTH PARAMETERS BETWEEN OFFENSIVE AND DEFENSIVE VOLLEYBALL PLAYERS

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### Abstract

The purpose of the study was to compare the selected speed and strength parameters between offensive and defensive volleyball players. To achieve the purpose the investigator selected 20 offensive volleyball players, who served as setters and spikers, and 20 defensive volleyball players who served as blockers and diggers. The subjects were selected from different colleges in Chennai, who participated at inter-collegiate level competitions. The subjects were in the age group of 18 to 25 years. The selected subjects were tested to find out their ability in speed and strength using standard tests. Statistical significance was determined through 't' test. In all cases 0.05 level was fixed. It was proved that there was no significant difference between offensive and defensive volleyball players in both speed and strength.

**KEYWORDS:** Speed, Strength parameters, offensive players, defensive players and volleyball.

### INTRODUCTION

Game played by two teams of six players each, in which an inflated ball is volleyed over a high net. Each team tries to make the ball touch the court within the opposing side's playing areas before it can be returned. A team is allowed to touch the ball three times before returning it. The team that first scores 15 points wins the game, (Britannica Concise Encyclopedia, cited in <http://www.answers.com/topic/volleyball>).

Offensive Players for the purpose of the study, the players who were setting the ball and spiking the ball were considered as offensive players. (Britannica Concise Encyclopedia)

Defensive Players for the purpose of the study, the players who exhibited their skills in blocking and digging the ball were considered as defensive players. (Britannica Concise Encyclopedia)

### HYPOTHESIS

It was hypothesized that there would be significant difference between offensive and defensive volleyball players in speed ability of the volleyball players.

It was hypothesized that there would be significant difference between offensive and defensive volleyball players on strength ability of the volleyball players.

### METHODOLOGY

#### SELECTION OF THE SUBJECT

To achieve the purpose of the study the investigator selected 20 offensive volleyball players, who served as setters and spikers, and 20 defensive volleyball players who served as blockers and diggers were selected. The subjects were selected from different colleges in Chennai, who participated at inter-collegiate level competitions. The subjects were in the age group of 18 to 25 years.

## SELECTION OF VARIABLES

**Dependent variable:** Speed, Leg Explosive strength

**Independent variable:** defensive and offensive volleyball players.

## RESEARCH DESIGN

Totally forty college volleyball players – twenty offensive players and twenty defensive players who participated in inter-collegiate level tournaments were selected for this study. The selected subjects were tested to find out their ability in speed, and strength using standard tests comparisons were made between the scores and the differences were considered as difference in their abilities. Statistical significance were determined through 't' test. In all cases 0.05 level was fixed.

## RESULTS

The statistical comparisons based on the results between offensive and defensive volleyball players are presented in Table I

Table I: Showing Mean, Mean Difference, Standard Deviation and Obtained 't' value between Offensive and Defensive Volleyball players on Speed

Group	Mean	MD	SD	SDM	't'
Offensive	7.11	0.06	0.18	0.07	0.88
Defensive	7.05		0.25		

Required table value for df 1,19 = 1.73

The results presented in Table I proved that the average speed of the offensive volleyball players was 7.11 seconds and the defensive players was 7.05 with mean difference of 0.06 seconds. The obtained 't' value of 0.88 proved to be insignificant at the obtained value was less than the required table value of 1.73 to be significant at 0.05 level. Hence, it was proved that there was no significant difference between offensive and defensive volleyball players in speed.

Table II: Showing Mean, Mean Difference, Standard Deviation and Obtained 't' value between Offensive and Defensive Volleyball players on Explosive strength

Group	Mean	MD	SD	SDM	't'
Offensive	55.30	3.30	7.79	3.27	1.01
Defensive	58.60		9.98		

Required table value for df 1,19 = 1.73

Not Significant

The results presented in Table II proved that the average explosive strength of the offensive volleyball players was 55.30 and the defensive players was 58.60 with mean difference of 3.30. The obtained 't' value of 1.01 proved to be insignificant at the obtained value was less than the required table value of 1.73 to be significant at 0.05 level. Hence, it was proved that there was no significant difference between offensive and defensive volleyball players in explosive strength.

## DISCUSSIONS ON FINDINGS

As of any game, the volleyball players were broadly classified into two, namely, offensive and defensive. Depending upon their positions, the requirements of strength and speed parameters of these players are bound to differ. In this study, the researcher was interested to scientifically find out whether there exists any difference on speed and strength of the offensive and defensive volleyball players.

The obtained results presented in Table I proved that there was no significant difference in speed between volleyball offensive and defensive players and there was no significant difference in explosive strength between volleyball offensive and defensive players.





The study proved that in volleyball while a attacker jumped with speed the defender also need to jump up and block the ball as such there was no significant difference between these players.

## CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn:

1. Both offensive and defensive players possessed adequate speed and explosive power as assessed in this study.
2. It was concluded that there was no significant difference in speed between offensive and defensive players in volleyball.
3. It was also concluded that there was no significant difference in explosive power between offensive and defensive player in volleyball.

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