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## **Leadership Theories And Large-Scale Sporting Events In Ethiopian Higher Education Sport Festival.**

**Biruk Hundito**  
**Ph.D. Research Scholar**  
**Department of Physical Education**  
**Andhra University, Visakhapatnam, India**

### **Abstract**

The purpose of this study to investigate leadership theory and large –scale sporting events in Ethiopian higher education sport festival .The main issues considered leadership theory in a large sport events .To this end descriptive case study Was employed.(In addition to In turn, 15 semis structured interviews were conducted (12 by phone and 3 in person) with representatives of all stakeholder groups to understand the perspective of all stakeholders involved with the event Interview. Accordingly, the respondents sampling wascarried out through purposive sampling techniques .the data for the study was obtained through interview , observation and document review various description techniques of qualitative method. Scientific description will be used to analysing the data .it is recommended that depended on the result the multiple-linkages theory of leadership is a theory where the complexities of leading an Ethiopian higher education sport association of a large-scale sporting event are acknowledged. The use of the multiple-linkages theory implies certain implications for managers and researchers. Notably, managers must evaluate the reasons for their and their leaders' involvement, and ensure involvement for "the right reasons." While intricate, researchers should examine the multiple-linkages theory in greater depth and in different settings.

**Key words:-** leadership, sport event

### **Introduction**

Northouse (2007, p. 3) defined leadership as"a process whereby an individual or group influences a group of individuals to achieve a common goal." The leadership literature has evolved from the trait approach (e.g., Stogdill, 1948), to the leadership style or behavioural approach (e.g., Hersey & Blanchard, 1984; House, 1971), to the transactional, transformational and charismatic leadership approaches (e.g., Bass &Avolio, 1990; Yukl, 1998). Yet, leadership research in sport management has been limited in scope, typically focusing on coaches, athletic directors, and boards of directors in universities and national sport organizations (e.g., Chelladurai& Carron, 1983; Chelladurai&Quek, 1995; Inglis, 1997). These studies have not focused on sporting events, they have been done without full attention to all the stakeholders (see Clarkson, 1995; Mitchell, Agle, & Wood, 1997 for more on stakeholder theory), which are invaluable to an Ethiopian higher education sport association in its preparation and hosting of a given event, and these studies have typically not examined the theories associated with leadership in sporting events. As such, this study seeks to take a first step in theorizing leadership by determining the most effective leadership style for managing large-scale sport events using stakeholder theory as the theoretical framework. This study considers both "traditional" and lesser-used leadership theories, thereby highlighting missing links between leadership theories and large-scale sporting events from a stakeholder's perspective to explain why leadership is important for the success of large-scale sporting events. Knowledge gained from this study will be of interest to all involved in sporting events, including existing and future,national and regional sport organizations,and policy makers at all government levels.

## Methods

Case studies have been shown to be especially valuable for providing in-depth knowledge of complex events as they unfold over time, events over which the researchers have little or no control (Yin, 2003). In order to develop the case study, multiple sources of information were used (reference material and interviews) from all major stakeholders of the 2014 Ethiopian higher education sport festival, where stakeholders were identified as sport and bid team members, the sport federations, the governments, the media, the delegations, and sponsors (Yin, 2003). This is a unique setting in that there were, in effect 2 Ethiopian higher education sport association with 2 distinct leadership groups (see <http://www.geocities.com/mondiauxaquatiques2005/> for more information). The reference material consisted: Ethiopian higher education sport association internal documents (e.g., meeting minutes, memos, letters, final reports), stakeholder documents (e.g., annual reports, newspaper articles), and commemorative material (e.g., commemorative books). Over 35 documents totalling more than 80 pages were analysed. In turn, 15 semi structured interviews were conducted (12 by phone and 3 in person) with representatives of all stakeholder groups to understand the perspective of all stakeholders involved with the event. All data collected were converted if necessary into electronic format for subsequent analysis. Interviews were professionally transcribed before analysis. The analysis was a combination of inductive content analysis and pattern matching in order to iterate and integrate between theory development and theory testing (Miles & Huberman, 1994; Yin, 2003). The analysis was done with the help of the data analysis software ATLAS.ti.

## Results

As expected, findings highlighted both charismatic and transformational aspects as being important for the leadership of large-scale sporting events (e.g., ability to motivate followers, creating an attractive vision to follow, and fostering commitment and teamwork). However, neither theory fully reflected the view of the various stakeholders in terms of what the leadership of a large-scale sporting event should be. The theory which showcased the varied qualities was the multiple-linkage leadership theory (see Yukl, 1998), where leadership includes intervening variables such as task commitment, ability and role clarity, organization of the work, cooperation and mutual trust, resources and support, and external coordination.

## Discussion and Conclusion

While the multiple-linkages leadership theory is not widely used in the literature, this study highlighted its usefulness in theorizing leadership for large-scale sporting events as the theory includes situational variables, which constrain managerial behaviour and moderate its effects. This leadership theory also takes into account motivation, human resource management systems and processes, task structure, and external coordination as key variables. This last variable is an essential feature for large-scale sporting events as it recognizes the importance of the Ethiopian higher education sport association relationship with (and need of) the various stakeholders involved with the event. Thus, the multiple-linkages theory of leadership is a theory where the complexities of leading an Ethiopian higher education sport association of a large-scale sporting event are acknowledged. The use of the multiple-linkages theory implies certain implications for managers and researchers. Notably, managers must evaluate the reasons for their and their leaders' involvement, and ensure involvement for "the right reasons." While intricate, researchers should examine the multiple-linkages theory in greater depth and in different settings.

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## **Olympic Education- Teaching Methods**

**Shakeel Ahmad shahid**

**Lecturer in sports sciences and PE Govt muslim degree college 41 jb faisalabad pakistan**  
**Research scholar of international olympic academy olympia greece.**  
**EX Lecturer in Sports Sciences and P.E Govt. Millat Degree College Faisalabad Pakistan**  
**Profshakeel2@gmail.com**

**Kausar Perveen**

**Lecturer In Sports Sciences And P.E Pioneer College Near Fawara Park Faisalabad Pakistan.**

### **Abstract.**

This paper will analyze and discussed about the Olympic education including teaching methods that how teaching methods are useful to spread the educational programs including help of the teachers through teaching methods and examples. Olympic education is more universal and wide spread using all interconnections of all sub topics and teaching methods along with multicultural issues from particular sport. Olympic education" is a term which first appeared in sports education and Olympic research only in the 1970s (cf, N. MOLLER 1975b). Its founder, the Frenchman Pierre DE COUBERTIN (1863-1937), saw himself first and foremost as an educator, and his primary aim was educational reform (cf, RIOUX 1986). His aim, initially restricted to France and the French schools, was to make modern sport an integral part of the school routine, and so introduce into that routine a sports education which would embrace both body and mind. COUBERTIN did not use the term "Olympic education", but referred initially to "sporting education". Since as early as 1900, and not exclusively within schools, Olympic Education encouraging the idea of making sport accessible to adolescents and even to older people as a newly discovered part of a complete education .

Key Words,

Olympic education, teaching Methods, Examples, Proposed activities,

### **Introduction.**

Olympic education is a process of educating and developing the individual according to universal values and ideals of Olympism. The principles and values of Olympism as special life attitudes and behaviors can be understood, accepted and assimilated by means of a pedagogical approach, notably through sporting and cultural activities. (Georgiadis, 2009)

The future of an "Olympic education"

The future is not without hope. The much-prophesied abandonment of Olympism and hence of the "Olympic education" has not come about, nor are there any signs that it will do so. We must speak more about the "Olympic future", and to do that we have a vital need for "Olympic education", especially after Sydney 2000 with wonderful examples of the Australians (1997b, 62). Anyone who thinks in terms of perfectionism and makes the total achievement of his aims a basic condition, has failed to understand COUBERTIN and his Olympism.

There are several teaching methods that can be implemented in Olympic education. I will refer to the most common methods that combine theory and practice and motivate children to want to learn and explore knowledge and social issues. These are:

Role play, Brainstorming, Debate, Problem solving, Lecture Project method

## **ROLE PLAY**

Role play method derived from socio drama and is appropriate for small groups of students. According to van Ments, role play is 'a type of communication.' It is a form of communication that is simulation, not reality, and it is 'one particular type of simulation that focuses attention on the interaction of people with one another.'

It may be used to help students understand the more subtle aspects of social and ethical issues like the Olympic Values. Role-playing as a teaching strategy offers several advantages for both teacher and student. Firstly, student interest in the topic is raised. Secondly, there is increased involvement on the part of the students in a role playing lesson, they take an active part. It introduces problem situation dramatically and provides opportunity for people to assume roles of others, explore solutions and practice skills. Role playing is the best way to develop the skills of initiative, problem-solving, cooperation and communication. This method needs little preparation for the teacher. Role playing activities can be divided into the following stages:

1. Preparation and explanation of the activity by the teacher
  2. Choosing the participants, setting the roles
  3. Scene management
  4. Define observer's tasks
  5. The role playing
  6. The discussion or debriefing after the role-play activity
- Some disadvantages of this method might be that the participants could very shy or feel threatened by someone. Another problem could be that they can get too involved and lose objectivity or have too much fun and disrupt the task.

## **Brainstorming**

Brainstorming can be used for solving a specific problem, introducing a new subject, answering a question, finishing a story and surveying knowledge and attitudes. It encourages student creativity, raises interest and also generates many ideas. Brainstorming can be done with a group of students, which may be as small as two, but usually no larger than 12. The definition of Brainstorming according to Osborn who was called the father of brainstorm: "a conference technique by which a group attempts to find a solution for a specific problem by amassing all the ideas spontaneously by its members" (Alex Osborn)

### **Procedure**

1. Introduce a question, problem, or topic
2. Invite participants to respond with as many ideas or suggestions as possible, ideally in single words or short phrases. Encourage everyone to participate but do not proceed in any set order; Explain that until the brainstorm is complete, no criticism or judgment is allowed
3. Write the proposals or words or phrases of students' contribution, while students observe.
4. Group together any problems that are similar or related.
5. Afterward, prioritize, analyze, or use the list to generate discussion or problem solving.

One disadvantage of brainstorming might be that it can take too much time if it is not limited from the beginning. Another one might be that there could be raised expectations of the brainstorming group by considering ideas that will never be implemented.

## **DEBATE**

Debate is a structured contest of argumentation in which two opposing individuals or teams defend and attack a given proposition. Debating is an effective pedagogical strategy because of the level of responsibility for learning and active involvement required by all student debaters. The literature highlights key benefits from debate as a teaching-learning strategy for developing critical thinking and analytical skills while fostering teamwork and communication. Moreover, it provides an experience by which students can develop competencies in researching current issues, preparing logical arguments, differentiating between subjective and evidence-based information actively listening to various perceptions, asking forceful questions, integrating relevant information, and formulating their own opinions based on evidence. After the debate is over, students also report that the experience is FUN! Although there are disadvantages to using the debate as a teaching-learning strategy, the benefits far outweigh the disadvantages.

The purpose in such debates is the active student participation in activities, in order to further comprehend the content of the subject examined as well as the consequences as a result of the causes in question through well documented argumentation.

Such activities develop the skills of concentration, listening, speaking,

critical thinking and allow both teachers and students to evaluate the learning outcomes.

The rules of debate reflect the democratic spirit and procedures of

Parliament. The first team is the Proposition and arguments in favor of the topic in discussion. The other team is the Opposition, arguing contrary to the aforementioned proposals.

### **PROBLEM SOLVING**

Problem solving is a process and skill that you develop over time to be used when needing to solve immediate problems in order to achieve a goal. According to Mayer and Wittrock, problem solving is "cognitive processing directed at achieving a goal when no solution method is obvious to the problem solver" (2006, p. 287). The crucial goal of problem-solving is to overcome obstacles and find a solution that best resolves the issue. In Olympic education problem solving activities are very useful because they can create valuable opportunities for youth to build teamwork, express creativity and foster communication. A problem solving activity is a game or role play that simulates a problem that a group of youth must work together to solve. Problem-solving activities can give youth significant experiences that teach trust, empathy, reflection and initiative

#### **Steps In Problem Solving**

1. Identify the problem Appreciation and Identification of the problem
2. Explore the problem. Collection of relevant information and data
3. Set goals. Once they have thought about the problem from different angles they can identify their goals.
4. Look at Alternatives  
It is a brainstorming phase. The purpose of brain-storming is to collect together a long list of solutions.
5. Select a possible solution  
From the list of possible solutions the students can sort out which are most relevant to their situation and which are realistic
6. Implement a possible solution Implementing the solution may take some time and effort.
7. Evaluate Evaluating the effectiveness of the solution is very important.

### **LECTURE**

Lecture is when an instructor will stand before a class and present information for the students to learn. Usually, very little exchange occurs between the instructor and the students during a lecture. In Olympic education, a lecture can be a useful tool, especially in the context of secondary education. Especially, in cases where the subject examined during the program is one of a higher level and the comprehension of specific scientific terms is required, the use of lecture can contribute to their initial clarification, with the help of a scientist. When the students are well prepared for the attending of a lecture that assists to further comprehend subjects, then it can be proved to be a very fruitful method. For a lecture to be able to achieve a positive result, the speaker should be well informed and familiar with the subject, having organized each topic so that the students are able to keep up and be constantly motivating to participate with questions and comments. Students who are weak in note-taking skills will have trouble understanding what they should remember from lectures. If the lecture is boring or too long, the students lose the chance to concentrate and rethink the subject presented.

### **The Project Method**

The "project" is considered to be one of the best and most appropriate methods of teaching Olympic education. According to traditional historiography, the project idea is a genuine product of the American Progressive education movement. The project method is the outcome of the pragmatic educational philosophy of Dewey, the well known American philosopher-cum-educationist. The control and direction of inquiry is central in Dewey's theory of education. The principal value of a project is the experience of doing it, not the end result. This is as seen in the project method. The pupil learns only by thinking about problems and trying to solve them for himself. The project method was developed and perfected by Dr. William Head Kilpatrick Dewey's student and friend of the University of Columbia. Kilpatrick elaborated the concept and popularized it worldwide in his famous article, "The Project Method" (1918). He (1925) defined the project as a "heartly *purposeful* act". In the early 1920s, Kilpatrick's conception of the project attracted a growing number of teachers who began to define the project more broadly and considered it to be a viable "general" method of teaching (Knoll, 1997). In the early 1930s, the term "project" was used less and less in its broad sense. After the 2<sup>nd</sup> World War Progressive methods of teaching became viable options in discussions of school reform. (Frey, 1996). In the late 1960s, projects emerged as an alternative to traditional teaching. Frey defines the project method as "an open learning process, the limits and processes of which are not strictly defined, which progresses in relation to the specific teaching context and learners' needs and interests." This teaching method involves the planning and completing of a project

by the students. It is a flexible, student-centered learning process, with no strictly defined limits, that can be applied in the class room but also in an extra-curricular setting, in camps or municipalities. It develops students' research skills, improves their self-confidence and teaches them to work as a team. The project method creates interaction among team members, direct personal contact, individual and collective responsibility and decentralization of authority. With this method, students do not have the feeling that they are attending lessons; they discover learning through creative activities and critical thinking. The method requires their active participation throughout the project's planning and implementation.

The project method is a form of teaching that starts with the adoption of a proposal presented by a member or the team as a whole. The proposal may be generated by an experience, an event or a current problem. The choice and planning are made under the responsibility of the team of which the teacher is also a member. It consists of four stages-phases that constitute the main frame, without being binding and contribute to a better organization and coordination of individual activities.

These four stages-phases are:

#### **1st Phase: Reflection**

1. Choosing the subject; During this phase, students will identify the subject after a discussion. Depending on their age group, they will choose one among the following areas related to Olympic education: Ancient Olympic Games, Modern Olympic Games, Paralympic Games, Youth Olympic Games

Ethical issues – Olympic Values, London 2010 Olympic Games Sports that are not very common Benefits from the organization of the Olympic Games (for junior-senior secondary school students)

2. Determining the scope-objectives, time schedule

3. Raising awareness

This can be achieved with the help of a leaflet, audiovisual and electronic material.

4. Expanding the subject

Team members can present views, ideas and words, during a brainstorming process, which are all recorded without criticism.

Ranking-classifying ideas, identifying domains

#### **2nd Phase: Planning teaching formats**

1. Separation into sub-groups

There will be 4-6 sub-groups, depending on the number of students in each class and each sub-group will be composed of 5-6 students. It is better to allow the children to decide on the selection and composition of the groups, according to their interests and friendships.

2. Methodology

Students receive detailed information on the method to be followed.

3. Analysis of activities

We determine the activities that we will be following into theoretical, motor and visual and we set out each sub-group's actions.

4. Contact with the a) direct b) indirect environment

We work with the whole school community (teachers, headship, parents and guardians association). We also cooperate with all local community entities (local government, sports and cultural associations, NGOs).

3d Phase: Implementation of activities

1. Information gathering; Information is obtained from books, periodicals and newspapers, the Internet, etc.

2. Evaluation: Information is evaluated on the basis of its interest and relation to the subject.

3. Classification 4. Consideration 5. Synthesis 6. Presentation

Each sub-group presents the outcome of its work to the others.

4th Phase: Evaluation (self-evaluation – evaluation by the others)

1. During the project

The evaluation is done in the course of the project by the teacher in the class room, at regular intervals.

2. At the end of the project

The evaluation can be done either orally through discussion or by means of questionnaires to establish whether the objectives originally set have been achieved.

#### **EXAMPLE 1**

Age group: children 12-15 years old

1st Phase: Reflection

Thematic unit: "Ancient Olympic Games"

Aim: Give information to the children about the Ancient Olympic Games.

Objectives: Acquaint the children with the main characteristics of the ancient Olympic Games  
Acquaint the children with the deep meaning of the ancient Olympic Games  
Help them explore the history of the Olympic Games revival  
Let them learn about the ancient Olympic sports  
Help them develop a cooperation and team spirit and discover knowledge  
Help them develop self-confidence through initiatives and creative activities

Time schedule

5 teaching units

Awareness-raising, exploration, classification, separation into units

During this phase, the teacher will first provide some basic information and show the photographic or other material he has prepared and then choose together with the children the topics to be considered.

Teaching topics

Organization and participation in the ancient Olympic Games  
Ancient Olympic sports  
Truce, meaning and importance  
Victors' rewards and honors. Penalties for transgressors.

2nd Phase: Planning teaching formats

Separation into sub-groups

1st sub-group: Organization and participation in the ancient Olympic Games

2nd sub-group: Ancient Olympic sports

3d sub-group: Truce, meaning and importance

4th sub-group: Victors' rewards and honors. Penalties for transgressors

Methodology and analysis of each sub-group's activities

1st sub-group: Organization and participation in the ancient Olympic Games

*Proposed activities:* Compiling a list of ancient Olympic victors  
General information on the history of the ancient Olympic Games.  
Photograph collage on the subject from historic books, the Internet.

2nd sub-group: Ancient Olympic sports

*Proposed activities:* .Painting with the events and corresponding photos.  
Painting "wrestling"

Reconstituting with movement ancient Olympic athletics events

3d sub-group: Truce, meaning and importance

*Proposed activities*

Historical information on the significance of the truce in ancient Greece.  
Olympic truce in modern times. Proposals for world peace.  
Graffiti on the subject of "peace"

4th sub-group: Victors' rewards and honors. Penalties for transgressors

*Proposed activities*

Painting "kotinos"  
Construction "Zanas"

Contests with a crown of olive branches as prize

3d Phase: Implementation of activities

All previous activities will be implemented by the sub-groups. Children will look for information in any source they can find and discover knowledge and experience always under the teacher's guidance. In the end, after collecting their material, they will organize it and present it to the other groups

4th Phase: Evaluation (self-evaluation, evaluation by others)  
A simple questionnaire with questions on the ancient Olympic Games will help to evaluate achievement of the original aim and objectives and draw conclusions. A discussion with the children can also provide equally important information. Of course you can use a multiple choice questionnaire.

EXAMPLE 2

Age group: children 15-18 years old

1st Phase: Reflection

Thematic unit: "Social Issues"

Sub-topic: "Human Rights and Multiculturalism"

Aim: To make children understand concepts such as tolerance towards diversity, equality in society, respect for other persons' rights, interculturalism.

Objectives: Have a saying in the creation of a fairer and more tolerant society,  
Improve communication skills  
Learn that civilization has no borders,  
Work with people of different nationality,  
Acquire knowledge on other cultures  
Understand the value of the Olympic Games

Time schedule 4 teaching units  
Awareness-raising, exploration, classification, separation into units

During this phase, the teacher will first provide some basic information and show the photographic or other material he has prepared and then choose together with the children the topics to be considered.

Teaching topics

More things unite than separate us, Human rights at school or in the class room, Getting to know other cultures, Olympic Games. Games that unite the people of the world.

2nd Phase: Planning teaching formats

Separation in sub-groups  
1st sub-group: More things unite than separate us.  
2nd sub-group: Human rights at school or in the class room  
3d sub-group: Getting to know other cultures  
4th sub-group: Olympic Games, Games that unite the people of the world.

Methodology and analysis of each sub-group's activities

1st sub-group: More things unite than separate us

*Proposed activities*

Music and dances of the Balkans. Common cultural elements between countries are recorded and compared (dance, music instruments, costumes, musical sounds).

We dance together. Children will choose to dance any dances they prefer teaching one another to the sound of music.

We create a choreography using elements from the dances we danced together

2nd sub-group: Human rights at school or in the class room

*Proposed activities*

We ask children to compile school with respect to human rights

An imaginary country. Ask the children to imagine that they have discovered a country where there are no laws and prepare a list with the rights that should apply to all citizens.

Creation of a human rights scenario to be played as a small theatrical happening for the others.

3d sub-group: Getting to know other cultures

*Proposed activities*

Games from my country. Children will play and record traditional games and their name in their country's language. They will play these games with the other groups when they present them.

Photographs and pictures from their countries and other countries of the world brought by the children. All will cooperate in creating a big collage.

Cherished Olympic medalists and their countries.

4th sub-group: Olympic Games, Games that unite the people of the world.

*Proposed activities*

The music of the Olympic Games. During the staging of the Olympic Games the whole world listens to this music. We encourage the children to collect some of these pieces that they like

Children gather information on countries' participation in the Olympiads.

They write an article on the contribution of the Olympic Games to world peace

3d Phase: Implementation of activities

All previous activities will be implemented by the sub-groups. Children will look for information in any source they can find and discover knowledge and experience always under the teacher's guidance. In the end, after collecting their material, they will organize it and present it to the other groups.

4th Phase: Evaluation (self-evaluation, evaluation by others)

Answers to questionnaires are evaluated, followed by a discussion in which the teacher encourages all children to participate.

### **Recommendations.**

IOC must ask to all NOC,S to organized Olympic education workshops every year for the development of teachers knowledge and teaching methods.IOC should provide at least minimum funds to National Olympic Committees for fostering the Coubertin Idea.Olympic education programme need continuity because when it stopped in the system of education then to take new start always create problem i.e. funding, disturbance of general education, environment, administration etc.Fostering the Olympic education programmes need cooperation from the ministries of education at all countries including curriculum.The creation of an Olympic education framework through IOC International Olympic Committee at world level will help individual countries considerably to integrate in the best possible way to spread Olympic education in their own system.

## Conclusion.

Although today Olympic Education trends have been established at International levels and today Olympic Education programs are implemented in many countries around the world. The idea of Olympic education has been increasing in the last 15 years. Olympic education is mostly promoted through education, at all levels. Olympic educators need to help their students and their athletes see the world in a different way. Olympic education was an innovative educational activity enjoying international recognition. One of the basic aims was to cultivate their creative and critical thinking and to develop a spirit of friendship, cooperation, and membership in the school environment and in their personal lives. On a smaller scale, its practice is also extended to sports organizations, social institutions and camps. For implementation of the program through good teaching practice need lot of funds but it still need the training of the teachers at all levels at international level so that Olympic education could be delivered in better way especially in developing countries including the idea of Coubertin which need to established in all over the world not just in the countries who organized Olympic games.

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## **Supplementation of Iron Enriched Biscuits (IEB) on Selected Anaemic Sports Women and Its Impact on Their Haematological Parameters and Performance Levels**

**Dr Rani George**

**Department of Nutrition, St Ann's College for Women Hyderabad, India**

**Dr Vimala Reddy**

**Department of Physical Education, St Ann's College for Women Hyderabad**

### **Abstract**

The objective of the present study was to develop a suitable nutritional intervention strategy to correct anaemia by formulation and development of iron enriched biscuits (IEB) and to evaluate its impact on the anaemic status and performance levels of selected anemic sports women. Supplementation study using IEB was carried out for a period of 120 days on 60 anaemic sports women belonging to three anaemic groups (20 per group) namely mild anaemic, moderate anaemic and severe anaemic group. Sixty anaemic sports women 20 each falling into the above anaemic categories was selected as unsupplemented control. Hematological parameters like haemoglobin, PCV (Packed cell Volume), were measured. Tread mill test was carried out to test endurance and performance. The results showed significant improvement in the haematological parameters like haemoglobin and PCV values in all the experimental groups. Thus overall 56 anaemic sports women out of 60 showed definite improvements after IEB supplementation which amounted to 93 percent of the studied population. Regarding treadmill test also all the experimental groups showed significant improvement in the running time which in turn shows improvement in their performance levels.

Key Words : Sports Anaemia, Haematological parameters, Supplementation, Treadmill test

### **Introduction**

Sports nutrition has emerged as one of the strong decisive factor and an important tool in enhancing sports performance. Consequently, sports anaemia is one of the most commonly occurring problems seen in sports women due to their increased nutritional requirements. This condition can lead to impaired work performance due to decreased haemoglobin level which reduces the oxygen carrying capacity of the blood for the working muscles. The term "sports anaemia" is commonly used to describe iron depletion and consequent reductions in haemoglobin to anaemic levels (Boyadjiev and Taralov, 2001). Athletes may be at risk for developing iron deficiency because of sweat losses, intestinal losses, increased demand for total body haemoglobin, menstrual losses in female and poor dietary intake (ADA, 2003). True anaemia exist in athletes if the haemoglobin level is under 13g/dl in man or 12g/dl in women (Clark, 1998). Thus chronic iron deficiency that results from consistently poor iron intake can negatively affect health, physical and mental performance, and warrants prompt medical intervention and monitoring (Cowell et al., 2003). The objective of the study was to develop a suitable nutritional intervention strategy to correct anaemia by formulation and development of iron enriched biscuits (IEB) and to evaluate its impact on the anaemic status and performance levels of selected anemic sports women.

### **Methodology**

Supplementation study using IEB was carried out on 60 anaemic sports women drawn from the prevalence study from one institution belonging to three anaemic groups (20 per group) namely mild anaemic (Hb 10-11.9g/dl), moderate anaemic (Hb 9-10.9g/dl) and severe anaemic (Hb <8g/dl) according to FAO/WHO (1992) classification. Sixty anaemic sports women 20 each falling into the above anaemic categories was selected as unsupplemented control from another institution.

The experimental group was given six IEB (150g) daily over a period of 120 days along with 200ml of lime juice to enhance iron absorption. Hematological parameters like haemoglobin, PCV (Packed cell Volume), were measured. Tread mill test was carried out to test endurance and performance. The impact of supplementation was studied and the outcomes in terms of various parameters are discussed below.

### Results and Discussion.

**Haematological Parameters:** Impact of supplementation of IEB on various haematological parameters are presented and discussed in this section.

1. Haemoglobin: Mean haemoglobin levels of various anaemic groups belonging to experimental and control group before and after the dietary intervention is given in Table I

TABLE I: Mean Haemoglobin Levels Of Selected Anaemic Sports Women Before And After Supplementation

Anaemic Groups (20 per group)	Haemoglobin (g/dl)							
	Experimental (N=60)				Control (N=60)			
	Before	After	Difference	P value	Before	After	Difference	P value
Severe	7.62 ± 0.20	9.87 ± 0.98	2.25 ± 0.95	0.000**	7.43 ± 0.27	7.59 ± 0.36	0.16 ± 0.17	0.019 <sup>NS</sup>
Moderate	9.05 ± 0.61	11.01 ± 1.74	1.96 ± 1.86	0.000**	9.15 ± 0.66	9.27 ± 0.50	0.06 ± 0.32	0.572 <sup>NS</sup>
Mild	10.59 ± 0.51	12.23 ± 1.22	1.64 ± 1.37	0.000**	10.66 ± 0.61	10.66 ± 0.61	0.01 ± 0.23	0.895 <sup>NS</sup>

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

The mean haemoglobin values of severe anaemic group was 7.62 g/dl before supplementation, which improved to 9.87 g/dl after supplementation with iron enriched biscuit. This mean increase of 2.25g/dl was found to be statistically significant ( $p < 0.01$ ) whereas the control group showed only a marginal increase of 0.16g/dl. This is a clear reflection of the impact of supplementation. The mean haemoglobin levels of moderate anaemic experimental group was 9.05g/dl before supplementation which increased to 11.01g/dl with a mean difference of 1.96g/dl which was also statistically significant ( $p < 0.01$ ). The control group in the same category recorded only an insignificant mean increase of 0.06g/dl. The mild anaemic group also improved from initial haemoglobin level of 10.59g/dl to 12.23g/dl after supplementation, which shows the impact of iron enriched biscuits supplementation, with a mean increment of 1.64g/dl which was also statistically significant ( $p < 0.01$ ). Whereas the control group in the same category did not show any significant increase in haemoglobin levels.

### 2. Packed Cell Volume

The mean PCV values of the different anaemic groups belonging to experimental and control group before and after supplementation is given in Table II.

TABLE II: Mean PCV Values of Selected Anaemic Sports Women Before And After Supplementation

Anaemic Groups (20 per group)	Packed Cell Volume (%)							
	Experimental (N=60)				Control (N=60)			
	Before	After	Difference	P value	Before	After	Difference	P value
Severe	25.30 ± 0.53	28.97 ± 2.46	3.67 ± 2.42	0.000**	24.87 ± 0.69	24.82 ± 11.07	-0.05 ± 0.53	0.774 <sup>NS</sup>
Moderate	28.45 ± 1.89	34.26 ± 4.38	5.81 ± 4.59	0.000**	26.96 ± 2.18	26.40 ± 2.06	-0.56 ± 0.67	0.028*
Mild	32.38 ± 1.33	35.53 ± 3.20	3.15 ± 3.34	0.000**	29.72 ± 4.15	29.19 ± 4.13	-0.53 ± 0.48	0.007**

\* Significant at 5% level; \*\* Significant at 1% level; NS-Not significant

Mean Packed Cell Volume (PCV) values were below normal value of 36.0 – 46.0% for all the three anaemic groups both in the experimental and control groups before supplementation. However, there was a significant ( $p < 0.01$ ) improvement in the PCV values in all the three anaemic

experimental groups which increased from of 25.3, 28.45, and 32.38 percent to 28.97, 34.26 and 35.53 percent respectively after supplementation in the severe, moderate and mild anaemic groups. However the control group showed a decrease in PCV values. This clearly demonstrates the impact of IEB supplementation which also are in tune with the significant improvement in the haemoglobin levels. Both haemoglobin and hematocrit (PCV) values are equally useful tests and are interpreted similarly. Sports Performance Parameters

#### Treadmill Test

The Physical Work Capacity (PWC) of the selected group of anaemic sports women were studied using treadmill test. The time taken to run on the treadmill till exhaustion, the mean recovery pulse rate (RPR) after 1½ - 2 minutes and cardiovascular efficiency scores (CES) as calculated from the above data of the selected group of anaemic sports women in both experimental and control group, before and after the dietary intervention is given in the Table III.

TABLE III

Mean Treadmill Time, RPR And CES of Selected Anaemic Sports Women Before And After Supplementation

Anaemic Groups (20 per group)	Experimental (N=60)				Control (N=60)			
	Before	After	Difference	P value	Before	After	Difference	P value
<b>Severe</b>								
Time (min.)	11.53 ± 0.44	12.79 ± 0.90	1.25 ± 0.79	0.000**	11.67 ± 0.47	11.73 ± 0.53	0.06 ± 0.28	0.527 <sup>NS</sup>
RPR (beats/min.)	74.8 ± 2.06	72.0 ± 1.48	-2.8 ± 2.14	0.001**	73.4 ± 1.89	73.5 ± 1.58	0.10 ± 1.18	0.853 <sup>NS</sup>
CES	62.4 ± 2.32	66.3 ± 2.68	3.94 ± 2.4	0.000**	65.9 ± 3.53	66.0 ± 3.38	0.110 ± 2.86	0.906 <sup>NS</sup>
<b>Moderate</b>								
Time (min.)	12.46 ± 0.73	13.51 ± 1.34	1.05 ± 1.17	0.001**	12.23 ± 0.032	12.21 ± 0.29	-0.02 ± 0.14	0.59 <sup>NS</sup>
RPR (beats/min.)	72.6 ± 0.94	70.95 ± 0.94	-1.65 ± 1.22	0.000**	73.1 ± 2.55	73.9 ± 1.85	0.80 ± 1.81	0.196 <sup>NS</sup>
CES	67.03 ± 3.82	70.6 ± 3.55	3.57 ± 4.1	0.001**	64.5 ± 2.16	64.1 ± 2.46	-0.38 ± 2.31	0.617 <sup>NS</sup>
<b>Mild</b>								
Time(min.)	13.10 ± 0.99	15.4 ± 3.08	2.33 ± 3.37	0.003**	13.52 ± 0.57	13.53 ± 0.61	-0.01 ± 0.11	0.797 <sup>NS</sup>
RPR (beats/min.)	70.56 ± 1.76	69.05 ± 2.28	-1.50 ± 2.80	0.027*	71.2 ± 2.3	71.9 ± 1.44	0.70 ± 1.56	0.191 <sup>NS</sup>
CES	66.66 ± 3.72	68.9 ± 3.29	2.24 ± 3.13	0.005**	67.38 ± 3.21	65.58 ± 2.47	-1.80 ± 0.89	0.105 <sup>NS</sup>

\* Significant at 5% level; \*\* Significant at 1% level; NS-Not significant

The severe anaemic experimental group before supplementation could run for 11.53 minutes which increased to 12.79 minutes after the supplementation with a mean increase of 1.25 minutes which was statistically significant at one percent level. Similarly the moderate and mild anaemic sports women in the experimental group recorded a treadmill time of 12.46 and 13.10 minutes respectively before supplementation which improved to 13.51 and 15.4 minutes respectively after the supplementation. The mean increment was 1.05 and 2.33 minutes respectively which was significant at one percent level.

### **Conclusion**

Results in the present study clearly indicate that anaemic sports women were able to improve their haematological parameters and the running time on treadmill when supplemented with iron. This clearly indicates the efficiency of iron enriched biscuits when consumed consistently to enhance the work capacity of the anaemic sports women. The results of the study clearly brought out the need to assess the iron/Hb status of athletes in general and sports women in particular in colleges/sports institutions. It also provides adequate evidence regarding the possibility of supplementing iron / other nutrients in the food form. The feasibility of providing easily potable and consumable formulations of multiple food products preferably locally available is also evident. These observations indicate the need to raise the iron nutritional status of sports students in educational institutions to optimum levels through appropriate food formulations of common use that are easily available and economically suitable for all strata of the society.

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## **Effect Of Circuit Training On Selected Physical Fitness Components And Physiological Variables.**

**T. SRINIVASU<sup>1</sup> P.SRINIVAS<sup>2</sup> & Mr. HRUDAYA RAJ<sup>3</sup>,**

<sup>1</sup>Lect. In Physical Education, JKC College, Guntur – 522 006, A.P.

<sup>2</sup>Lect. In Physical Education,, P.A.S.College, Pedanandipadu, Guntur Dist, A.P.

<sup>3</sup>Research Scholar, University College of Physical Education & Sports Sciences,  
 Acharya Nagarjuna University, Guntur-522510, Andhra Pradesh, India.

### **Abstract:**

The purpose of this study was to examine the effect of eight weeks of supervised circuit training on enhancing the quality of performance in cardio respiratory endurance, explosive power, muscular endurance, breathe holding time and resting pulse rate. For this purpose 30 untrained male students of J.K.C. College, Guntur, Guntur district, Andhra Pradesh aged 18 to 22 years took part in the study. Subjects were randomly assigned to either circuit training (n=15) or control (n=15) group. The training regimen lasted for 8 weeks. The selected criterion variables were assessed using standard tests and procedures, before and after the training regimen. Analysis of Covariance was used to determine the significant difference existing between pretest and posttest on selected criterion variables. The analysis of data revealed that 8 weeks of circuit training had an impact of 4.61% on cardio respiratory endurance, 13.42% on explosive power, 21.38% on muscular endurance, 5.18% on breathe holding time and 5.23% resting pulse rate. These results suggest that the experimental variable has the significant influence on improving selected criterion variables.

### **Introduction**

Sportsmen and women must participate in year round conditioning programmes to have utmost efficiency, consistent improvement and balanced abilities. For that they must put their bodies under the certain amount of stress to increase physical capabilities. Physical exercise extremely important for maintaining physical fitness including healthy weight; building and maintaining healthy bones, muscles and joints; promoting physiological well – being; and strengthening the immune system.

### **Methodology**

#### **Subjects and variables**

For the purpose of this study 30 untrained male students from J.K.C. College, Guntur, Guntur district, Andhra Pradesh, In the age group of 18 to 22 years were recruited with their consent. All of them healthy, nonsmoking and with a negative medical history. The selected subjects were randomly assigned to both the circuit training and control groups of 15 each.

**Table I: Criterion variables and Test**

SL.NO.	VARIBALES	TESTS/INSTRUMETNS	UNIT OF MEASUREMENT
1	Cardio Respiratory Endurance	Cooper's 12 minutes Run/Walk	Meters
2	Explosive Power	Sergeant Vertical Jump	Centimetres
3	Muscular Endurance	Bent Knee Sit – Ups	Counts
4	Breathe Holding Time	Manual Method	Seconds
5	Resting Pulse Rate	Blood Pressure Monitor	Counts

### **Results and Discussions**

Table 2: Computation of Mean and Standard Deviation on selected Physical Fitness Components and Physiological Variables

Variables	Groups	Pretest		Post Test	
		$\bar{x}$	$\sigma$	$\bar{x}$	$\sigma$
Cardio Respiratory Endurance	Experimental	2475.00	151.20	2565.67	92.64
	Control	2458.67	104.50	2572.00	61.84
Explosive Power	Experimental	46.07	4.99	51.13	4.60
	Control	46.73	3.17	53.00	4.09
Muscular Endurance	Experimental	30.27	3.90	36.47	2.85
	Control	26.47	3.27	32.13	2.92
Breathe Holding Time	Experimental	45.07	2.70	47.75	2.65
	Control	44.97	2.91	47.30	2.90
Resting Pulse Rate	Experimental	66.13	3.27	62.67	1.76
	Control	65.73	2.15	61.13	1.46

Table 3: Analysis of Covariance on Selected Physical Fitness Components and Physiological Variables of Circuit Training and Control Groups

Variables	Groups	Adjusted Mean	SOV	Sum of Squares	df	Mean Square	'F' Ratio
Cardio Respiratory Endurance	Experimental	2576.50	B	87631.4	1	87631.4	53.94*
	Control	2468.17	W	43862.1	27	1624.5	
Explosive Power	Experimental	52.70	B	156.95	1	156.95	38.41*
	Control	48.11	W	110.32	27	4.09	
Muscular Endurance	Experimental	31.75	B	157.21	1	157.21	95.79*
	Control	27.11	W	44.31	27	1.64	
Breathe Holding Time	Experimental	47.35	B	20.11	1	20.11	25.51*
	Control	45.71	W	21.28	27	0.79	
Resting Pulse Rate	Experimental	62.74	B	64.03	1	64.03	31.30*
	Control	65.66	W	55.23	27	2.05	

Required table value for significance at 0.05 level of confidence for df of 1 and 27 is 4.21

\*Significant at 0.05 level.

**Conclusions:** The result of this study shows that circuit training with repeated bouts of a combination of physical exercise has significant impact on cardio respiratory endurance, explosive power, and muscular endurance, breathe holding time and resting pulse rate.

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## Kinematic Analysis Of Hurdle Clearance In Steeple Chase

Verma, Sanjeev<sup>1</sup>Research Scholar  
Sahu Manoj Kumar<sup>2</sup>  
Assistant Professor, Amity University, Noida (NCR)

### Abstract

The purpose of the study was to see the correlation of selected angular and linear kinematic variables and performance of hurdle clearance in steeplechase. 10 students (boys) on the basis of purposive sampling technique of age  $26 \pm 2$  years were selected as a subject from Laxmibai National University of Physical Education, Gwalior, those who had been undergoing training. Time taken by the subject to clear the hurdle was considered as a performance, and sequential photography was done at sagittal plane with the help of Canon- EOS T3 motor driven camera. From the photographic sequence, the stick figures were prepared by using joint point method, and segmentation method was used to measure the selected linear kinematic variable at selected moments. To see the correlation between performance of hurdle clearance and selected angular and linear kinematic variables at selected moments, the pearson's correlation coefficient was employed and found significant correlation in the angle of hip during take-off phase at 0.05 level of significance.

Keywords: - angle at elbow, angle at shoulder, angle at hip, angle at knee, angle at ankle

### Introduction

The science of biomechanics is concerned with the force, which act on a human body and the effects, which these forces produce. The internal and external forces acting on a human body determine how the parts of the body move during the performance of motor skill. (kumar gray 2004) Biomechanics is relatively young as a recognized field of scientific inquiry biomechanical considerations is of interest in several different scientific disciplines and professional fields. Biomechanical instructors may have academic backgrounds in zoology; orthopaedic, cardiac, or sports medicine; biomedical or biomechanical engineering; physical therapy; or kinesiology. (J.Hall Susan 1995)Steeple chase is derived from cross- country running and obstacle course races. It is a combination of distance running, hurdling, and water jumps. The name "Steeplechase" inherited form horse racing over jumps. Various theses exist on the origins of hurdle races. The race is run over 3000M. Athlete covers just over seven laps of the track and have to clear 35 obstacles (4 hurdles and a water jump on each lap), but there is a run in distance from the start to the beginning of the first lap, then several laps. In Steeple chase an athlete has to cross the hurdles of 0.914M high and 3.96M wide. The hurdles and the water jump barriers used in the Steeple chase are solid and weight between 80 kg .and 100 kg. Heavy barriers are designed to support the weight of several athletes at the same time obstacles (4 hurdles and a water jump on each lap), but there is a run in distance from the start to the beginning of the first lap, followed by several laps.The athlete faces difficulty in estimating the take-off position for the hurdle and the water jump. This varies taking into account the fatigue he experiences. Whatever method he uses, it is important that he clears hurdles or water jumps as best as he can. The hurdles and the water jump should be stable and strong enough to bear the weight and pressure of the athletes. The shoes should be such that it is easier to run with them when wet. He should have a clear view of the barrier and for this purpose; he should not run close behind another athlete. Three phases need to be individually analyzed in order to arrive at the complete biomechanical analysis of the event. The three phases in the order they will be analyzed will be the preparation, flight, and follow through.

### Procedure

#### Selection of Subjects

Seven male hurdlers from Amity University, Noida, were selected as the subjects for the present study. Since the subjects had been undergoing training for a considerable period, therefore it was considered that subjects possess reasonable level of technique of hurdling. Their age ranged between  $26 \pm 2$  years. The subjects were explained about the objectives of the study.

#### Selection of variables

For the kinematic analysis of Hurdle clearance in steeplechase following kinematic variables were selected:

a) Linear kinematic variables:

- i. Height of center of gravity at takeoff ii. Height of center of gravity at swinging
- iii. Height of center of gravity at landing

b) Angular kinematic variables at takeoff, swinging and landing phase:

- i. Angle at shoulder joint ii. Angle at elbow joint
- iii. Angle at hip joint iv. Angle at knee joint v. Angle at Ankle joint

Criterion Measures

The criterion measure for this study was the technique of each subject. The standard height of steeplechase (0.914 mts.) was measured. The timing of take-off to the landing was measured and recorded in second

Filming protocol and Analysis of the Film

Sequential photography was employed in order to register the technique of hurdle clearance in steeplechase. The subject was photographed in sagittal plane. The camera being used at sagittal plane for the purpose was Canon- EOS T3, a motor driven camera, with the frequency of 30 frames per second. 3 frames one at the moment take off, moment flight and one at the moment landing was selected for the purpose of analysis. The subjects were photographed in sagittal plane for obtaining individual photographic sequence, the subject were photographed in a controlled condition (figure – 1, 2 and 3). The distance of camera from the subject was 8.67 mts and was fixed at height of 1.22 mts. The takeoff and landing time were measured manually for each subject.

Statistical Procedure

To find out the relationship between selected biomechanical variables and performance of hurdle clearance, Statistical Package for Social Science (SPSS) version 20 was used. For testing hypothesis the level of significance was set at 0.05 level.

## Results

**TABLE-1:**Relationship of Selected Angular Kinematic Variables with The Performance of Hurdle Clearance in Steeplechase at the Moment of Take off

S. No.	Variables	Coefficient of correlation
<b>At the moment of Take off</b>		
1.	Angle of Left Elbow	0.108
2.	Angle of Left Shoulder	0.317
3.	Angle of swinging leg Hip	-0.328
4.	Angle of swinging leg Knee	-0.504
5.	Angle of swinging leg Ankle	-0.328
6.	Angle of Take-off leg Hip	0.791*
7.	Angle of Take-off leg Knee	0.254
8.	Angle of Take-off leg Ankle	0.491

\*Significant,  $r_{.05}(5) = .754$

Since the value of coefficient of correlation required to be significant for 5 degree of freedom is .754, the above table clearly show that "Angle of Take-off leg hip indicating significant relationship with the performance (.754), where as the above table clearly show that remaining biomechanical variable that is (Left elbow, Left Shoulder, Swinging leg hip, knee, ankle, take-off leg knee and ankle) is lower than the tabulated value therefore it has no significant relationship with the performance of subjects in steeplechase

**TABLE-2:**Relationship of Selected Angular Kinematic Variables with the Performance of Hurdle Clearance in Steeplechase at the Moment of Flight

S.No.	Variables	Coefficient of correlation At the moment of Flight
1.	Angle of Left Elbow	0.041
2.	Angle of Left Shoulder	0.295
3.	Angle of swinging leg Hip	-0.126
4.	Angle of swinging leg Knee	0.099
5.	Angle of swinging leg Ankle	-0.247
6.	Angle of Take-off leg Hip	0.330
7.	Angle of Take-off leg Knee	-0.283
8.	Angle of Take-off leg Ankle	-0.751

\*Significant,  $r_{.05}(5) = .754$

Since the value of coefficient of correlation required being significant for 5 degree of freedom is .754, the above table clearly show that in case of all the joints are lower than the tabulated value. Therefore, it has no significant relationship with performance of subject during Flight phase while clearing the hurdle in steeplechase.

**TABLE-3:**Relationship of Selected Angular Kinematic Variables with the Performance of Hurdle Clearance in Steeplechase at the Moment of Landing

S.NO.	Variables	Coefficient of correlation At the moment of Landing
1.	Angle of Left Elbow	0.086
2.	Angle of Left Shoulder	-0.853*
3.	Angle of swinging leg Hip	-0.517
4.	Angle of swinging leg Knee	-0.415
5.	Angle of swinging leg Ankle	-0.565
6.	Angle of Take-off leg Hip	-0.085
7.	Angle of Take-off leg Knee	0.169
8.	Angle of Take-off leg Ankle	0.289

\*Significant,  $r_{.05}(5) = .754$

Since the value of co-efficient of correlation required to be significant for 5 degree of freedom is .754, the above table clearly show that "Angle of Take-off leg hip indicating significant relationship with the performance (.754), where as the above table clearly show that in case of Angle of Left shoulder indicating significant negative relationship with the performance where as in case of (Left Elbow , Swinging leg Hip, Knee, Ankle and Supporting leg Hip, Knee, Ankle) are lesser than the table value, therefore it has no significant relationship with performance of subject during landing phase in steeple chase.

**TABLE-4:**Relationship of Selected Angular Kinematic Variables with the Performance of Hurdle Clearance in Steeplechase at the Moment of Landing

S. No.	Variables	Mean	Coefficient of correlation
1.	Height of CG (Take-off)	0.97	0.419
2.	Height of CG (Flight)	1.31	-0.058
3.	Height of CG (Landing)	1.08	0.051

\*Significant,  $r_{.05}(5) = .754$

Since the required value of coefficient of correlation required being significant for 5 degree of Freedom is .754 the result of table 4 show that height of Centre of Gravity at selected moments has insignificant relationship with performance of subjects in Steeplechase.

#### Discussion And Conclusion:

In case of angular kinematics variables the value of coefficient of correlations at selected moments were found significant in case of moments Take-off and Landing, where as insignificant values were found in case of Flight phase. But this does not mean that this angle of different joints at selected moment do not play any important role while clearing the hurdle in steeplechase. In case of moment Take-off there was significant positive correlation between the angle of Take-off leg Hip joint and performance. It indicates that increasing the angle of Hip during the Take-off also increase the time of Hurdle clearance, which means a poor performance. In case of moment landing a significant negative correlation was found between the angle of left shoulder joint and performance. It indicating that increasing the angle of shoulder joint during the Landing will decrease the time of hurdle clearance, which means a better performance. The relationship of selected linear kinematic variables (Height of CG at selected moments) with the performance of the subject at steeplechase found insignificant as the subject at steeplechase found insignificant as in the study the researcher was only confined to the relationship of Height of CG in steeplechase. On the whole it may be as ascertained that the low value coefficient of correlation shown by selected variables does not mean that these variables are not contributing to the performance of subjects in steeplechase. In the insignificant value of coefficient correlation of these variables with the performance may be due to small sample size and availability of sophisticated equipment.

#### RECOMMENDATIONS

The variables such as different angles and center of gravity may be kept in mind as the factor contributing to performance of player in steeple chase. Similar study can also be conducted on female steeple chase players. The results of this study may be helpful in preparing a model of hurdle clearance in steeple chase, to evaluate the performance of subject in steeple chase.

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## **Effect Of Physical Activity Programme On locomotor Development In Preschoolers**

**Dilshith Azeezul Kabeer K I**

**Research Scholar, Dept.of Physical Education, Pondicherry University, Puducherry- 605014,**

**E-mail: dilshid7@gmail.com**

**Dr.D.Sultana**

**Professor, Department of Physical Education, Pondicherry University, Puducherry- 605014,**

### **Abstract**

The purpose of this study was to determine the effect of physical activity programme on locomotor development in preschoolers on selected variables such as Test of Gross Motor Development- 2 Ulrich, 2000 (Locomotor variables). Thirty children between the age group 3-5 years from Menalloor and Pozhiyoor anganwadi centres were selected as the participants. The participants were randomly assigned into two groups, an experimental group (N= 15) and control group (N=15). The experimental group underwent twelve weeks of physical activity programme and the control group did not undergo any exercise programme. The collected data was analyzed by using paired t- test and ANCOVA (analysis of covariance). The findings of the study have revealed that locomotor development showed a positive improvement after 12 weeks of activity programme in experimental group whereas, no improvement was found in controlled group.

**Keywords:**Physical activity programme, locomotor, preschoolers.

### **Introduction**

Child development is the field of study devoted to the understanding of all facets of human growth and changes from conception into adolescence (Berk, 1989). There are many factors that may encroach on the development and well-being of the new life. Children grow, develop, and learn through physical activity. Physical activity can have a profound effect on the development of these behavioral domains (thus enhancing total development), for movement is the child's natural learning medium (Gabbard, Leblanc & Lowy, 1987). It is known as the phase of perfection of basic movements. This phase is also characterized by rapid mental and social development along with motor development. There are no significant sexual differences though individual differences can be considerable (Singh H., 1991). The most dominant characteristics of behavior are the extraordinary urge and desire for physical movement. The child enjoys physical movement and does it even without any specific aim or objectives. They learn to play with other children- beginning of social cooperation and interaction. The most common forms of play are imitative and role plays. The preschool years or early childhood (3- 6 years) of an infant's life play a very crucial role in the development of his basic movement patterns and motor skills. To begin with, a noticeable difference between preschoolers and their infant and toddlers counterparts is that preschoolers have lost their most of their baby fat and taken on a leaner, lankier look. It is also the phase of rapid motor development. Movement plays a very important role in the "total" development process. Movement serves as a vehicle by which children explore, challenge and conquer the environment around them (Gabbard, Leblanc & Lowy, 1987). It is generally accepted that physical education contributes more to growth and psychomotor development than any other discipline. Participation in physical activity during the childhood is a precarious time for nurturing the development of a healthy life style. The basic movements which the child learns in the earlier phase are refined and mastered. Therefore, physical activity may enhance positive development of feelings lifelong and may help the children understanding the realistic goals of achievement regardless of their ability and encouraging each child's self-appraisal of accomplishment. And also with the modern trend launched in the society, inactivity among the children has increased leading to disease child, obesity, under nutrition, underweight, poor posture. The purpose of the study was to determine the effect of physical activity on locomotor skills (locomotor- run, hop, gallop, leap, horizontal jump, and slide) in preschoolers.

## Methodology

The purpose of the study was to know the effect of physical activity programme on locomotors development in preschoolers. To achieve this purpose thirty children between the age group of 3-5 years from two anganwadi centres from Trivandrum, Kerala, were selected as participants for the study. They were randomly assigned to control group and experimental group of fifteen each for the period of twelve weeks. The participants of control and experimental groups were administered with TGMD- 2 Ulrich, 2000 (locomotors skills) before the start of the experimental training session and finally after the experimental training session to assess the data and the data was statistically analyzed by using descriptive statistics, ANCOVA, and paired t- test to find out the significant difference . The level of significance chosen was  $P < 0.01$  and  $P < 0.05$ . The experimental group performed the prescribed activity programme thrice a week for a period of twelve weeks with duration of 45-60 minutes. The training sessions included warming up, stretching exercise, ladder drills, aerobic/endurance dance, coordination exercise, ball games, folk songs and limbering down.

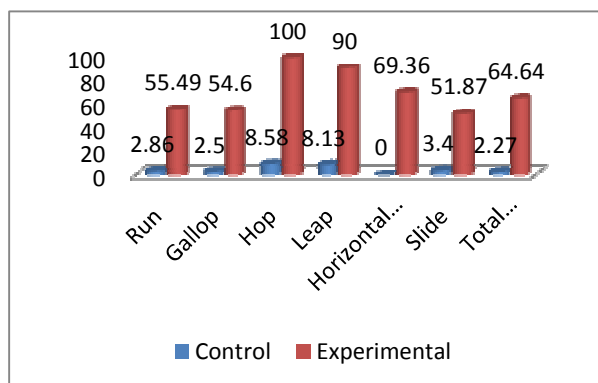
**Analysis of Data:** Descriptive statistics were employed for each of the selected variables of TGDM-2 Ulrich 2000, (locomotors skills) to know the basic characteristic. To test the significance of 'adjusted posttest mean' difference between the control and experimental groups for each of the selected variables ANCOVA was employed and to determine the difference between the pre-test and post test result for the experimental and controlled groups paired t- test was computed.

## Result And Discussion

Table: Ancova For Adjusted Post-Test Tgmd- 2 Ulrich 2000, Locomotors Skills Scores Of Ex. And Control groups

Locomotors skills		Source of Variance	Sum of Squares	df	Mean Square	F Ratio	P- Value
Run skill	Adjusted posttest	Between groups	19.55	1	19.55	27.02	0.000**
		Within groups	19.53	27	0.72		
		Total	39.08	28			
Gallop skill	Adjusted posttest	Between groups	31.01	1	31.01	35.02	0.000**
		Within groups	23.90	27	0.88		
		Total	91.02	28			
Hop skill	Adjusted posttest	Between groups	12.92	1	2.24	10.90	0.003**
		Within groups	31.98	27	0.51		
		Total	44.9	28			
Leap skill	Adjusted posttest	Between groups	14.92	1	14.92	14.28	0.001**
		Within groups	28.20	27	1.04		
		Total	43.12	28			
Horizontal jump skill	Adjusted posttest	Between groups	20.15	1	20.15	9.52	0.005**
		Within groups	57.10	27	2.11		
		Total	77.25	8			
Slide skill	Adjusted posttest	Between groups	9.26	1	9.26	6.49	0.017*
		Within groups	38.49	27	1.42		
		Total	47.75	28			
Total Locomotors skill	Adjusted posttest	Between groups	778.49	1	778.49	96.18	0.000**
		Within groups	218.52	27	8.09		
		Total	997.01	28			

Figure 1: The percentage gain of TGMD- 2 Ulrich 2000, Locomotors skills scores of experimental and control groups.



The children were provided ample opportunities for movement and active play to explore their bodies through variety of physical activities programme and colourful equipment's which can influence children motor development. The training programme was semi- structured which began with the free play and progressively activities were added. The objective was to get the children involved in the physical activity for a period of time, as the children has short attention span; they were not forced to follow the pattern of training. (Williamson , 2013) also suggest that less structure may allow for greater physical activity in some children, however, it is likely that the provision of structure may increase physical activity in other, less active children. So, the very aim of the programme was to encourage maximum movement of the children through play. The analysis of the results revealed that in the case of experimental group, significant changes were seen in the variables of TGMD-2, Ulrich 2000 (locomotors skill) following the twelve week exercise programme. No changes were noticed in the control group. Significant improvement was seen in the locomotors variable following twelve weeks of physical activity programme. Significant improvement was seen in all the six locomotor variables i.e. run, gallop, hop, leap, horizontal jump, and slide. (Sugden et al., 2003) also agree with the study that a 40-week locomotors program resulted in significant improvements in motor skills. Preschool children are in an age of rapid motor skill development. They learn to use and test their bodies. Children were provided wide range of activities of moving the body through space like- walking, running, hopping, jumping, rolling, dancing, climbing and leaping, ladder drills. These activities were used for the purpose of investigating and exploring the relationship between themselves, space and object in space. Thus, locomotion plays a major role in motor and skill development. Involving in physical activity resulted in loss of baby fat and become leaner. This "Slimming down" and increasing motor coordination enables the preschooler to participate with more confidence in the locomotors activities (Morrison, S. 1995). The improvement may be also due to the environment provided to them such as moving to music and rhythms, imitating the actions, clapping, tapping, action songs (rhymes) which might have resulted in the neuromuscular development. (Venetsanon & Kambas, 2010) also agrees that environmental factors affect the motor development in children.

### Conclusion

Twelve weeks of Physical Activity Programme resulted in an improvement of locomotors development in preschoolers.

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## **Sports Tourism Potentialities of Kerala Boat Races- an Analytical Study**

**Mr. Mohammed Niyas KK, (Lecturers, Dept. of Tourism & Hotel Management, Govt. Arts&Science College Kondotty,Kerala,India)**

**Mr. Arshak K (Lecturers, Dept. of Tourism & Hotel Management, Govt. Arts&Science College Kondotty, Kerala, India)**

**Mr. Habeebu Rehman KP(Assist Professor and Head. Dept of Physical Education. Govt. Arts&Science College Kondotty,Kerala,India)**

### **Abstract**

The Specialty of Kerala geography provides immense opportunities for Water based sports events. Generally Kerala is a small state in India attracted by more foreign tourists in every year. Apart from natural beauty and cultural importance the place and people also passionate in different sports events, especially Water sports. In this study we are reflecting the potentialities for Sports related Tourism in Kerala. Here we have envisaged Kerala Boat Races are Sports Tourism Product rather than considering it as a Cultural Tourism Product. The study is based on different secondary data and Foreign Tourist Arrival charts collected from authorized bureau. The results of the study may determine the recognition of water based tourism in Kerala and its future scope. Fluctuating market structure and scenario definitely will seek new introductory products or variation of existing attraction. Here we are directing the tourism planners of Kerala towards professional implications of Boat Races and its world recognition.

Keywords: Sports Tourism, Boat Races, Kerala Tourism and Sports events

### **Introduction**

Kerala is also known as "God's Own Country", it means Kerala is a landform gifted by god. Local people believe that its natural beauty and climate diversity are engineered by god's wish. It has dense forest by presence of Western Ghats in East and long Sea shore gifted by Arabian Sea, Flow of 44 rivers along whole part of the Kerala are blessed with fertile lands, southern Backwaters and small islands are adding extra variety features for the beauty of Kerala.

The touristic features recognized by Kerala are; Natural and Cultural attractions but certain cultural attractions and events with the background of natural beauty form new exiting features for tourist attraction. Which may unknowingly originate or converts niche outlook for certain event related tourism, in the case of Kerala Boat Races, they are highly impacted by large number of tourist involvement. It is also represents a niche tourism product of Kerala as Sports Tourism.

Kerala is a land of backwaters and beaches. A number of water sports are associated with the major lakes in Kerala. One of the major water sports in Kerala is boat racing, which is being organized by a number of social and religious organizations. These boat races have always been a part of the tradition of Kerala. There are instances in the history of Kerala when disputes between kings and chiefs were settled by boat races. These boat races are yet another reason that the tourists are attracted towards 'God's Own Country'. A number of teams from different districts participate in boat races, which are organized annually. These races are organized specifically during temple festivals, which give this water sports an aura of religious sanctity. A few out of these races are ancient and have different myths and legends attached to them. The Snake boat races, commonly known by the natives as Chundanvallams, are the one which are most popular. These races are organized at different places in Kerala including Punnamada in Alappuzha.

### **Major Boat Races in Kerala.**

#### **1. Champakulam Moolam Boat Race.**

Champakulam Moolam Boat Race is one of the ancient and most popular boat races in Kerala. The race is organized on the river Pampa at Champakulam, Alappuzha. The snake boats are called so because of the huge sterns of these boats that looks like a hood of a cobra raised in anger. The

average length of the snake boats measures to hundred feet. The legend has that the Raja of Chempakasseri, Pooradam Thirunal Devanarayanan, built a temple at Ambalappuzha as suggested by the royal astrologers. It was discovered that the idol which was being placed at the temple was not fit. Therefore, a new idol was brought to this place from Karikulam Temple in Kurichi. As this idol was brought to the temple on a boat, the king declared that watersport will be organized on this particular date every year, to commemorate this event.

#### *2. Aranmula Uthrattadi Vallamkali*

Aranmula Uthrattadi Vallamkali or the Aranmula Boat Race is the oldest known boat race event which takes place in Kerala. The boat race takes place during the festival of Onam, which occurs during the Malayalam month Chingam (August - September). The boat race is dedicated to Lord Krishna and Arjuna. The boats which are used for racing are huge. They have four helmsmen, 100 rowers and 25 singers who sing Vanchipattu songs throughout the race. The traditional snake boats which are especially used here for racing are called 'Palliyodams' by the natives. Each boat is decorated with a golden lace. Along with these decorations every boat has a flag and two or three ornamental umbrellas.

#### *3. Payippad Jalotsavam*

Payippad Jalotsavam is one of the finest snake boat races organized all over the world. The boat race is organized in a span of three days on the lake Payippad, which is located 35km from the district of Alappuzha. There is a close relationship between the Payippad Jalotsavam and the Subramanya Swamy Temple situated at Haripad. The legend has that before the actual construction of Sree Ayyappan Temple, the people of Haripad village had a vision that they should install the idol of Subrahmanya which was to be found at the bottom of the Kayamkulam River. Interestingly, the idol was supposed to be placed under a whirlpool. The people found the idol at the exact location. Hence, they brought the idol to its present location on a boat. This festival is celebrated every year in commemoration of that event.

#### *4. Nehru Trophy Boat Race*

The annual Nehru Trophy Boat Race takes place on the backwaters of Punnamada in Alappuzha of Kerala. The race is a rowing competition, which takes place between numerous teams who participate in this event to contend for the Nehru Trophy. The history behind the event is that, a snake boat race was conducted when Pt. Jawahar Lal Nehru visited this place. He was so impressed by the enthusiasm of the rowers that he awarded the Nehru Trophy to the winners. Since then the Nehru Trophy bears a silver model of a snake boat and is awarded to the winning team of the boat race.

#### *The Story behind Boat Races*

##### *1. The Rajas of Yore*

The story of these battling boats goes back 400 years in history when the rajas of the erstwhile principalities of Chempakasseri (Ambalappuzha), Kayamkulam, Thekkumkoor (Changanacherry) and Vadakkumkoor (Kottayam) in the old Travancore area, which were part of the present Alappuzha district and Kottayam district, frequently crossed swords on the backwaters of Kuttanad. The Chempakasserry troops suffered heavy casualties at the hands of the superior navy their rivals commanded. It soon dawned on the Chempakasserry Raja that the real defect was with his war boats, which were sluggish and cumbersome.

He called all the boat architects in the land to his court and told them of his desire to have better and faster boats for the troops. After days of hard labor, a man who was reputed to be the best boat architect in Chempakasserry, Koduppunna Venkitanarayanan Asari, came up with a specimen which satisfied the raja's requirements. It had speed, manoeuvrability and capacity to carry 100 able-bodied warriors on board and its eel-like construction was most ideal for launching an ambush since it could be easily kept concealed behind the overhanging bushes on the river banks. The Asari was generously rewarded and in the subsequent battles, the Chempakasseri Raja emerged victorious.

##### *2. The Deceit*

The story goes on to tell how the defeated Kayamkulam Raja sent a spy to Chempakasseri to learn the secret of the new war boat. The spy, a handsome youth, succeeded in seducing Asari's daughter. The girl's mother was overjoyed by the prospect of getting him as her daughter's bridegroom and persuaded her husband to teach him the construction of the boat.

Needless to say, the deceitful youth disappeared the moment he thought that he had learnt the secret. Asari was imprisoned by Chempakasseri Raja for treason. But he was released and showered with many honors when the snake boats built by the Kayamkulam Raja proved to be no match for the war boats of Chempakasserry in the next battle. The subtleties of the snake boat's

design are hard to pickup and even today it requires years of apprenticeship under a master boat architect before one could independently undertake the construction of this ancient boat.

When a village decides to have a new snake boat, a committee is formed to raise the Rs.6 lakhs it requires now to build the boat. The boat architect is summoned and the search for the "anjili" tree of the required size often takes the villagers to the high ranges of Kerala. As the snake boat takes shape out of the huge trunk, the 'asari' relies mainly on his instinctive estimates.

Of late, the boat builders' prime concern is to make the snake boat as long as possible so as to seat more and more rowers for speed. The Nedumbhagom snake boat recently entered the Guinness Book of Records as the longest rowing boat in the world. But its 135 feet length has since been overtaken by Vellankulangara snake boat, which is 140 feet long.

#### History of Boat Races

The boat race is a sport that signifies excellent team spirit, integration and amity of the people of this backwater country and is a great occasion for excitement. It vividly portrays the life of a vibrant people. Boat races are celebrated as the festival of backwaters with all pomp and splendor. In fact these water carnivals are inseparable from the life of a community, which is dependent on boats for commuting and communication in a water logged area. Perhaps snake boat race would be the only sporting event in the world in which hundreds of people participate in a competition. It stands as a symbol of communal harmony; but at the same time it is also a competition of muscle power.

Boat races are magnificent fiestas that bring alive the tranquil backwaters and these races are held in connection with Onam, the harvest festival in August/September. Scores of long snake boats and other smaller crafts participate in these events. The largest team sport in the world, the snake boat races are preceded by colorful water parades. Usually four helmsman, 25 singers and 100-125 oarsmen who row in unison to the fast rhythm of the Vanchipattu man a snake boat. Thousands of people crowd the water's edge to cheer the huge black crafts as they slice through the waters to a spectacular finish.

In the lakes and canals of Alappuzha different kinds of boats can be identified ranging from small country crafts for single person to boats carrying hundreds of people. In the good golden days these boats were the only major means of cargo and passenger transportation in this backwater country. Country canoes, rice boats (Kettuvallom), house boats, race boats etc. are the other different kinds of boats to be seen around.

#### Boat race Calendar:

The Champakkulam Moolam boat race (July) heralds the onset of the boat race season. The other boat races are Aranmula Uthuttathi Vallam kali (September), Payippad Jalotsavam (September), Rajiv Gandhi boat race, Pulincunnu (Aug/Sep), Neerettupuram boat race (Sept), Karuvatta boat race, Kumarakom boat race, Kavanattinkara boat race, Kottappuram boat race, Kodungallor boat race, Arppookkara Vanitha Jalamela, Kottayam Mahatma boat race, Mannar boat race, Thazhathangadi boat race, Kumaranasan Smaraka Jalotsavam, Pallana and finally the Indira Gandhi boat race at Kochi.

#### Boat Categories

##### 1. Chundan Vallam (Snake Boat)

The boats of Kerala are categorised and named as per their shapes, sizes and purposes. The Chundanvallam is so called because of its pointed prow. The term snake boat indicates the shape of the stern which resembles the raised hood of a snake. The front end of this type of boat will be tapering in shape and the rear end will be highly elevated from the water level. It has a length of about 60-65 meters and a capacity to carry over a hundred to hundred and ten people during a race. The stern is majestically caparisoned and decorated with a flag and brass ornaments. Silken parasols are arrayed along the entire length of the boat. There will be almost 95 oarsman, 5 Amarakkar (Controllers) and 10 'Nilakkar' (persons supposed to enhance the vigour and enthusiasm of the participating oarsman). It has the semblance of a snake, while advancing in a competition and hence became popular as snake boats. These boats were the traditional battle vessels of Kerala.

##### 2. Churulan Vallam (Race Boat)

The Race Boats "churulan vallams" are boats having a capacity to accommodate about 45 persons and are designed as passenger boats. The ends of these types of boats are shaped as a Circular ring (Churul in Malayalam).

##### 3. Vaipu Vallam

'Vaipu' vallams are boats having a passenger capacity of about 40-45 persons. One end of the boat is always higher than the other end. These boats were originally meant to prepare food for the other vessels during war .

#### 4. Iruttukuthy/Odi

Iruttukuthy or Odi type of boats are designed for transportation during the night. The shape of the boat is suitable for speedy journey. The width of the boat is so designed as to avoid friction with water while moving. In olden days these boats were supposed to be used for piracy works.

Vanchipattu (Song Of The Boatman)

These highly rhythmic songs were created to keep up the spirit of the boatman. These songs were so framed and sung as to keep pace with the movement of the oars and to keep alive their devotional, mythological and rustic life styles. Every snake boat has about twenty-five singers with their traditional percussion instruments.

#### Technical Specifications

Track length – 1400 M. Chundan Amaram - 5 Persons Nilakkar - 5 Persons

Total no. of team members - 111 Tracks 4 tracks of 10 M. wide from East

#### Communal amity

The preparations for this big event begins several weeks in advance: the snake boats have to be smeared with sardine oil for a smooth passage through the water, the best oarsmen have to be selected and finally the practice session begins under the supervision of the senior most oarsmen. Around 150 oarsmen, who would represent the village, take the vow to observe strict abstinence and celibacy till the oars are handed over to each of them. Feeding the oarsmen during the practice sessions and on the day of the festival is done by the villagers themselves or by the rich and wealthy who foot in the entire expenses incurred.

Even at the height of the caste system, the peculiar feature of these regattas was that the caste Hindus, Scheduled Castes, Christians and Muslims all sat in the same row for the feast symbolising the communal amity in Kuttanad. In fact, the Church has a traditional role in the celebrations at Champakkulam even though the water festival there is associated with a temple legend.

#### Objectives

To Identify Current opportunities of Water Based Tourism in Kerala by analyzing tourist interests of Kerala's attraction. To identify present lacunae in tourist facilities and services offered in the event venues To understand the satisfaction level of tourists, who are visiting the Boat races of Kerala

#### Methodology

Secondary data collected from various sources, such as Event websites of Kerala, KTDC, DTPC, and other sports and cultural bodies of Kerala Government. For the literature review certain published news paper articles also referred.

Primary data collected directly from few boat racing event venues of Kerala by distributing Questionnaires, personal interviews and observations. The sampling size for the study was 50 and purposive sampling method is adopted due to time constraint.

#### Data Analysis

Table.01. Tourist rating of Kerala's attractions

Feature Rated	TOTAL Mean Score	DOMESTIC Mean Score	INTERNATIONAL Mean Score
Natural Beauty	4.51	4.57	4.47
Beaches	3.74	3.85	3.66
Backwaters	4.34	4.32	4.35
Tea Gardens	4.03	4.28	3.80
Islands	3.78	3.97	3.62
Culture & Heritage	4.26	4.15	4.34
Palaces and Churches	3.82	3.86	3.79
Cuisine	4.04	3.82	4.21
Ayurveda	3.99	4.11	3.89
Wildlife & Birds	3.84	3.86	3.82
Climate	4.03	4.22	3.88
Safety	4.41	4.47	4.36
Hotels	4.17	4.30	4.06
Connectivity	4.30	4.37	4.25
Economical	4.25	4.29	4.22
Others	4.31	4.20	4.39

Inferences; Most of the tourists are rated water-based tourism products are higher by comparing others. So water based tourism have more priority.

Table02. Tourist rating for Facilities and information provided in Kerala

	Total	Domestic	International
	Mean Score	Mean Score	Mean Score
Facilities	3.96	3.91	3.99
Information Provided	4.13	4.06	4.19

*Inferences; Tourists are satisfied in facilities and information providers of Kerala*

Table03. Tourist rating of Accommodation sector in Kerala

	Total	Domestic	International
	Mean Score	Mean Score	Mean Score
Overall Hospitality	4.28	4.24	4.32
Quality of Service	4.33	4.24	4.39
Food	4.20	4.04	4.33
Ambience	4.03	3.96	4.09
Location	4.27	4.08	4.42
Comfort	4.31	4.32	4.31
Value for Money	4.47	4.34	4.58

*Inferences; Tourists are satisfied in all services of Accommodation providers in Kerala, but making good ambience should be improved*

Table04. Tourist rating of overall facilities in Kerala

	Total	Domestic	International
	Mean Score	Mean Score	Mean Score
Basic amenities	3.91	3.80	4.00
Accessibility	4.05	3.85	4.21
Availability of transport	4.23	4.1	4.34
Staff attitude	4.26	4.17	4.33
Information	4.43	4.34	4.5
Food facility	4.15	4.05	4.22
Hygiene Factors	4.06	4.09	4.05
Overall experience	4.21	4.11	4.29

*Inferences; Tourists are satisfied in all facilities in Kerala, but need to fix problems in basic amenities.*

#### Conclusion

In this study the potential characteristics of water-based tourism in Kerala is very high and it also identified by analyzing tourist interests. Certain problems like service standards, basic amenities and Ambience creation are need to be resolved and improved. The Kerala has good opportunities to imbibe more water-sports tourists by attracting professional Boat race events.

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## Effect Of Resistance Training Programmes On Selected Performance Related Variables Of National Level Women Basketball Players

Muneer P<sup>1</sup>, Abdul Rafeeqe T.C<sup>2</sup>

<sup>1</sup>m.Phil Scholar, Dept. Of Physical Education And Health Science, Alagappa University, India,  
Email: Muneermp7@Gmail.Com

<sup>2</sup>ph.D. Scholar, Dept. Of Physical Education, Pondicherry University, India, Mobile: +Email:  
Tcrafeequedv@Gmail.Com

### Abstract

The study was designed to investigate "The Comparative Effect of Two Resistance Training Menu on Selected Performance Related Variables of National Level Women Basketball Players. To achieve these purpose forty five national level women Basketball players were selected from St. Philomina College, Puttur, Mangalore and Alvas College, Moodbidri, Mangalore and having three years of training age. Their age group ranged from 17 to 24 years, they were - divided in to experiment group 1(n=15) Plyometric training group (PTG), Experiment group 2 (n=15) Circuit training group (CTG), and Control group (n=15) (CG). The experimental group was given six weeks (three times /week) of resistance training programme prepared by the investigator. The experiment group 1 underwent plyometric training, experiment group 2 underwent circuit training and control group was not given any specific training. The following performance related variables were chosen namely, speed, strength, endurance, flexibility, agility, leg endurance and explosive power for the study. They also assessed Basketball playing ability before and after the training period of six weeks. The analysis of co variance was used to determine any significant difference was present among three groups of the dependent variables. The study revealed that the performance related variables of national level women Basketball players were significantly improved through plyometric training.

**Keywords:** Plyometric training, Circuit training, Playing Ability

**Introduction:**Resistance training is any exercise that causes the muscles to contract against an external resistance with the expectation of increases in strength, tone, mass, and/or endurance. The external resistance can be dumbbells, rubber exercise tubing, your own body weight, bricks, bottles of water, or any other object that causes the muscles to contract. Plyometrics (also known as "plyos") is a type of exercise training designed to produce fast, powerful movements, and improve the functions of the nervous system, generally for the purpose of improving performance in sports. Plyometric exercises may also be referred to as explosive exercises. Plyometric movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervations of muscle and surrounding tissues to jump higher, run faster, throw farther, or hit harder, depending on the desired training goal. This is a very effective procedure for improving strength endurance. A circuit of 6-10 exercises is arranged in such a way that different muscle group are exercised at different station. The performer moves from one station to another undertakes load and recovery in the following two ways;30 second exercise and 30 second rest in between two stations,20 second exercise and 40 second rest between two section.

**Methodology:**Forty Five (n=45) women Basketball players were selected for the study, having three years of training age were divided in to experiment group 1 (PTG, n=15), Experiment group 2 (CTG, n=15) and Control group (CG, n=15). All group were tested for the pre-test through selected performance related variables i.e. Speed, strength, endurance, leg endurance, flexibility, agility and explosive power. The experimental group were given six weeks, (three days in a week) training programme. Training program include plyometrics like Standing broad jump, Hopes, Half Squat jump, Burpee jump, Vertical jump, Standing long jump etc. and circuit training which includes Bench press, Over head throw, Pushups etc.. The load, intensity and volume of these exercises were 1st and 2nd week 60%, 3rd and 4th week 70-80%, 5th and 6th week 80-90%. After six weeks all groups were tested for same components of physical fitness with same test battery. They also assessed with Basketball playing ability before and after experiment. In order to assess the Basketball playing ability of the subjects, rating was done with the help of three well experienced and efficient Basketball coaches. For the rating, the investigator has identified most important Basketball skills and abilities of defensive and offensive tactics. The skills chosen are Dribble, drive in, lay-up, jump shot, zone defense, man to man and block etc... Separate rating chart was given for each judge for each player for rating. Each judge evaluates the player's ability with the help of the rating chart for the maximum of 100 marks. Each player was evaluated by three judges separately and the average score of the rating was treated as playing ability of the Basketball players. Analysis of co variance was used in this study. The study shows that the performance related variables were significantly improve due to the influence of the above site training programme.

## Results and discussions

Analysis of co variance of experimental groups and Control group

Speed	Sources of variations	d.f.	SS <sub>x</sub>	SS <sub>y</sub>	SS <sub>xy</sub>	SS <sub>yx</sub>	MSS <sub>yx</sub>	F value
	Between	2.00	753.08	25.48	12.11	8.05	4.03	
	Within	41.00	765.60	5.01	2.67	5.00	0.12	
Strength								
	Between	2.00	15021.62	1007.51	251.82	574.27	287.14	12.36*
	Within	41.00	15317.53	953.07	106.53	952.33	23.23	
Flexibility								
	Between	2.00	6271.76	2715.24	1959.42	37.43	18.71	10.97*
	Within	41.00	7793.40	70.40	59.33	69.95	1.71	
Endurance								
	Between	2.00	502.69	13.64	9.01	3.18	1.59	7.67*
	Within	41.00	515.68	8.48	5.81	8.41	0.21	

Agility	Between	2.00	1652.85	2.98	0.58	2.85	1.42	21.53*
	Within	41.00	1657.38	2.71	0.18	2.71	0.07	
Leg Endurance	Between	2.00	15021.63	1007.52	251.83	574.29	288.14	14.37*
	Within	41.00	15317.54	953.17	106.55	952.35	24.23	
Explosive Power	Between	2.00	1.63	0.04	0.03	0.03	0.01	12.69*
	Within	41.00	1.67	0.04	0.00	0.04	0.00	

Post -hoc analysis between groups

	Control	Plyometric	Circuit	M.D.	CD at 5% level
Speed	7.94		6.54	1.41*	0.26
	7.94	6.14		1.81*	
		6.14	6.54	0.39*	
Strength	27.94		34.80	6.86*	3.61*
	27.94	39.12		11.18*	
		39.12	34.80	4.32*	
Flexibility	12.92		27.45	14.53*	5.98*
	12.92	33.69		20.77*	
		33.69	27.45	6.24*	
Endurance	5.44		5.64	1.21*	0.34*
	5.44	6.99		1.55*	
		6.99	5.64	1.35*	

Agility	10.26		10.01	0.25*	0.19*
	10.26	9.64		0.63*	
		9.64	10.01	0.37*	
Leg Endurance	27.94		34.20	6.26*	5.63*
	27.94	40.12		12.18*	
		40.12	34.20	5.92*	
Explosive Power	0.36		0.40	0.04*	0.02*
	0.36	0.54		0.18*	
		0.54	0.40	0.14*	

The analysis of data of the study revealed the following findings. The selected performance related variables namely speed, strength, flexibility, endurance, agility, leg endurance and explosive power had significantly improved after the training period of eight weeks. The improvement in strength, explosive strength and leg endurance is in agreement with the study conducted by Nimphius et.al., Vladan milic et al., Amusa, Choudhary et.al., Granados et al., Blackeyl et.al., and Hombergen et.al.,.The basic nature of the training given to the subjects involved plyometric and circuit training . Tudor Bompa in his book "per iodization in sports" has mentioned both plyometric and circuit training as a means of strength development. Moreover depth jumping is one of these specific methods to improve explosive strength.The improvement in Agility and Speed can be attributed to the nature of the game Basketball. This requires quick movements with unpredictable change of directions within a limited space. This findings is in consonance with the finding of Faigenbaum et.al., Granados et.al., Bellar and Tomescu, Hombergen et.al., Dellavalle and Hass. The subjects selected for the study were seasoned Basketball players and therefore had already developed the basic fitness level. This would have helped them to endure the intensity of the training given for six weeks as a part of the study.The improvement in Flexibility in a way is related to the variables discussed above without corresponding improvement in flexibility. It would have been impossible for the other variables to improve. A similar result was found in the study conducted by Amuse.

## Conclusion

On the basis of the findings of the study, the following conclusions were drawn:Six weeks of Plyometric and Circuit training programme improved the following performance related variables of national level women Basketball players.

Speed  
,Strength  
,Flexibility  
,Endurance,  
Agility

leg Endurance  
,Explosive Power

After Six weeks training Plyometric group brought better changes in all the selected variables when compared to Circuit training group of national level women Basketball players.

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## Effect Of The Enthusiastic Cricket Play Programme On Mental Toughness Among College Men

Nafih Cherappurath<sup>1</sup>, Dr. M. Elayaraja<sup>2</sup>

<sup>1</sup>research Scholar, Department Of Physical Education And Sports, Pondicherry University, ,  
Email: Nafihch@Gmail.Com

<sup>2</sup>associate Professor, Department Of Physical Education And Sports, Pondicherry University,  
India, , Email: Elaya.Cricket@Gmail.Com

### Abstract

Mental toughness is an integral part of sports psychology. Cricket is a long-duration and moderate-intensity-level team game. It demands consistent mental toughness for hours during the competition. The present study analysed the effect of the 8-week enthusiastic cricket play programme on mental toughness among college men and compared the levels between the cricket play group and the non-cricket play group. Thirty male players in the age group of 20 to 25 years belonging to different departments of Pondicherry University, Puducherry, India, were randomly chosen as subjects. They were split into two equal groups (15 for the cricket play group and 15 for the non-cricket play group) on a random basis. The first group was the experimental group and the second group acted as a control. The total duration of the cricket training programme was 8 weeks with 6 days per week and 2 hours per day. A trait measure of mental toughness was used (The Mental Toughness Questionnaire: MTQ; Dr. Alan Goldberg, 2004). The data collected from the two groups on the selected variable were statistically examined using the dependent t-test. The findings of the study show that the enthusiastic cricket play programme has a significant effect on college students.

Keywords: Mental toughness, Cricket, Enthusiastic cricket play programme.

### Introduction

Mental toughness (MT) has gained more popularity in recent times and has prompted research in the field of sports psychology. It is considered to be an indispensable part of any sport (Weinberg et al., 2011). It is an individual's ability to handle difficult and stressful situations (Fletcher & Fletcher, 2005). Thus, although differences of opinion exist, a person who can work efficiently even under stressful situations (competitive environment) is said to be mentally tough (Jones et al., 2002). The development of mental toughness involves several unique mechanisms that operate together over a long period of time and through unique developmental stages. In addition to psychological skills and strategies, features relating to the motivational climate (e.g., amusement, challenge, mastery), external assets (i.e., trainers, colleagues, parents, grandparents, relatives, senior sports persons, sport psychologists, teammates), and both sport- and non-sport-related progressive experiences (e.g., serious incidents, competitive challenges, mediated experiences, demonstration of capability) were discussed as the most important mechanisms (Gucciardi, 2011).

#### 1.1. What Is an Enthusiastic Cricket Play Programme?

An enthusiastic cricket play programme is where university students from various departments come together in the evenings, after class, to play cricket with a modified set of rules. It is a form of relaxation programme/technique through cricket. The main goal of the students in the enthusiastic cricket program is to tackle/overcome the tensions and frost in their academic life and also to enjoy sport. For this programme, we need a normal cricket ground. The tennis ball is used and the game will be a 10-over match. As cricket is a team game, that requires a lot of coordination among the players, this develops the player's ability to work in tandem with other teammates and to understand them, and this skill which they develop will be useful in other aspects of personal and academic life.

Here, in this study, we have analysed the mental toughness of college students. Since cricket is a long-duration and moderate-intensity-level team game and demands consistent mental toughness for hours during the competition, there is enough scope to find out and elaborate their mental toughness standards with respect to one another. Keeping in mind the purpose of the study, it was hypothesized that there may be significant differences between the enthusiastic cricket play group and the non-cricket play group with respect to their mental toughness.

The objectives of the study were to determine the effect of the enthusiastic cricket play programme on mental toughness among college men and to compare the overall mental toughness between the cricket play group and the non-cricket play group.

### Materials And Methods

**Selection of Subjects:** Thirty male players in the age group of 20 to 25 years belonging to different departments of Pondicherry University, Puducherry, India, were randomly chosen as subjects. They were divided into two equal groups (15 subjects for the cricket play group and 15 for the non-cricket play group) in a random manner. The first group that underwent training was taken as the experimental group and the second (which did not receive training) acted as control.

**Sampling Technique:** Thirty cricket players were selected from Pondicherry University. Random sampling technique was used for the collection of data. The selected subjects were divided into two groups, with 15 subjects in each group.

**Experimental Design:** For the purpose of this study, we used pre-test and post-test randomized group design. The thirty subjects were divided into two groups. The first group underwent treatment, and the selected students in this experimental group participated in 2 hours of cricket play for 6 days a week for 8 weeks. The other group was acted as the control group.

### Description and Administration of Questionnaire

A trait measure of mental toughness was used (The Mental Toughness Questionnaire: MTQ; Goldberg, 2004). This method utilized a questionnaire having 30 questions which included both negative and positive statements. Each question had two responses: True or False. The respondent had to tick (✓) any one of the responses that suited him. The MTQ assessed five factors – i.e. rebound ability, ability to handle pressure, concentration, confidence and motivation. The main aims of the research were explained to the subjects and the screening of the questionnaire was done to ensure that no questions were left unanswered.

### 2.5 Statistical Techniques

To find out the difference between two groups, the tester applied dependent 't' test at  $p < 0.05$  level of significance. The 't' test was performed with the help of SPSS software version 16.

### 3. RESULTS

From Table 1, it is observed that in the experimental group the pre-test mean with standard deviation is  $17.00 \pm 2.00$ . See also figure 1. After training, the post-test mean with standard deviation is  $21.47 \pm 3.42$ . In the control group, the pre-test mean with standard deviation is  $15.53 \pm 3.52$  and the post-test mean with standard deviation is  $16.73 \pm 4.65$ .

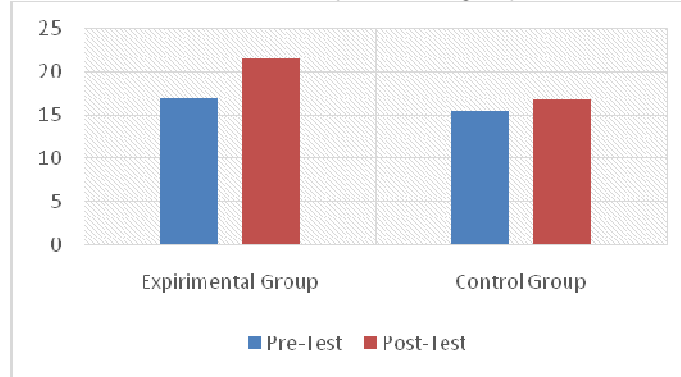
The dependent t-test indicates that there was significant difference obtained in the experimental group due to the training experience at  $p < 0.05$  level. In the group that underwent cricket training for 8 weeks at 6 days a week mental toughness improved significantly, while in the case of the control group there was no improvement.

Table 1: Mean comparison of mental toughness in the experimental group and the control group

Groups	N	Pre-test		Post-test		t-ratio
		Mean	SD	Mean	SD	
Experimental group	15	17.00	2.00	21.47	3.42	7.53*
Control group	15	15.53	3.52	16.73	4.65	2.88

\*Significant at  $p < 0.05$  level.

Figure1: Pre- and post-test mean scores of the experimental group and the control group



### Discussion

The results obtained indicate that there are significant variations in mental toughness components between the cricket playing group and the non-cricket playing group. This may be attributed to the fact that the cricket players involved themselves more in preparing mentally for various competitions and participating in competitions as a team which helps them to share the pressure of the competition, bounce back from mistakes and remain motivated.

Previous investigators have reported significant increase in mental toughness. The findings of the present study agree with those of Jalili et al. (2011), Connaughton et al. (2008) and Gucciardi and Gordon (2009). This increase is significantly due to the training they received which enabled them to handle different situations which could be both favourable and adverse. If the situation is favourable, the training enables the players to make greater use of opportunities and thus boosts their self-confidence. If the situation is adverse, the training enables them to withstand the pressure and thus does not lower their self-confidence nor increase their fear. Thus the players under the training programme developed better mental toughness compared to the non-playing subjects.

### Conclusion

The results of this study are consistent with those of previous research studies that have demonstrated that the overall mental toughness of enthusiastic cricket players was better than non-cricket players. This study may be utilized for the formulation of various training programmes. Players who are very mentally tough would be able to handle difficult situations and withstand pressure and achieve success.

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## **A Comparative Study among Left Hander Players and Right Hander Players With Respect to Aggression and Boldness**

**Dr. Quadri Syed Javeed**  
**Head,**  
**Dept. of Psychology,**  
**M.S.S. Arts Commerce and Science College Jalna.**

### **Abstract**

An Aim of the present study to investigate the aggression, boldness and boldness among left hander players and right hander players. Hypotheses: 1. there was no significant difference between left hander players and right hander players with respect to aggression. 2. There was no significant difference between left hander players and right hander players with respect to boldness. Sample: For the present study 100 Sample were belongings to Aurangabad, among them 50 subjects were left hander players. And 50 subjects right hander players. The age range of subjects was 18-23 years (Mean = 21.54, SD = 3.01). Purposive non-probability sampling technique was used. Tools: 1) Multi Assessment Personality Series (MAPS): This scale was constructed and standardized by Psy Com. This test measure of leadership and boldness. 2. Aggression Scale (1983) (A scale): This test is developed and standardized by Km Roma Pal and Mrs. Tasneem Naqvi. (Author both tests converted in regional language (Marathi) for pilot study) Results: 1. Left hander players had significantly high aggressive than the right hander players. 2. Left hander players had significantly high aggressive than the right hander players

### **Introduction:**

In sport, aggression is a characteristic that can have many negative as well as positive effects on performance. Aggression is defined as "any form of deportment directed toward the goal of harming or injuring another lived being who is motivated to eschew such treatment" (Baron & Richardson, 1994). Most people view aggression as a negative psychological characteristic, however some sport psychologists accede that aggression can amend performance (Widmeyer & Birch, 1984). This is called an assertive comportment (Bredemeier, 1994), where a player will play within the rules of the sport at a very high intensity, but will have no intention to harm an opponent. In sport, aggression has been defined into two categories: belligerent aggression and instrumental aggression (Silva, 1983). Bellicose aggression is when the main aim is to cause harm or injury to your opponent. Instrumental aggression is when the main aim is to be non-truculent but to win the ball. Coulomb and Pfister (1998) conducted a study visually examining aggression in high-level sport. They found that experienced athletes utilized more instrumental aggression in which they used to their advantage and that belligerent aggression was less frequently utilized. Experienced athletes used self-control to avail them with their aggression. On the other hand the general aggression model (Anderson & Bushman, 2002) argues that circumstantial and personal factors play a role in causing a person to comport aggressively. Therefore, a player's personality will play an astronomically immense role in determining whether they are truculent or not in certain situations. This model additionally takes into account gregariously learnt cues and therefore if a player has been edified not to be truculent in certain situation then he will not utilize aggression.

It can be optically discerned that aggression emanates from a variety of sources and it is consequential to understand where these sources stem from. Therefore sport stressors sanction us to understand what causes an athlete to become frustrated which can lead to aggression and a decline in performance.

Many families are challenged when it comes to aggression in youth and interscholastic sports, especially as it applies to kids who have arduousness controlling their aggression on the sports field. While the caliber of physical play ranges in sport (from low-contact to full-contact), it's never a lamentable conception for youth sports parents (regardless of sport type) to avail kids learn early about the differences in aggression, and when aggression is OK (or even desired) versus incongruous (or grounds for a penalty).

Dane S, Sekertekin MA. (2005) Handedness and differences in interpersonal relations and aggressiveness were studied in 33 right-handed (M age=22.9 yr., SD=4.9) and 18 left-handed (M age=22.5 yr., SD=2.4) male soccer players who played actively in professional soccer leagues of Turkey. Hand preference on the Edinburgh Handedness Inventory and scores for destructiveness, assertiveness, and passive aggressiveness on a Turkish Aggressiveness Inventory, plus scores for sociability, benevolence, tender heartedness, tolerance, and insistence on the Turkish Interpersonal Relations Inventory were examined. Mean destructive aggressiveness was higher for the left- than the right-handed athletes. Means on tolerance and insistence were higher for the right- than the left-handed athletes. Higher aggressiveness and less tolerance and insistence in the left-handers may be associated with their higher sports performance.

**Aim of the study:**

To Investigate the aggression, boldness and boldness among left hander players and right hander players

**Hypotheses:**

There was no significant difference between left hander players and right hander players with respect to aggression. There was no significant difference between left hander players and right hander players with respect to boldness.

**Methods:**

**Sample:**

For the present study 100 Sample were belongings to Aurangabad, among them 50 subjects were left hander players. And 50 subjects right hander players. The age range of subjects was 18-23 years (Mean = 21.54, SD = 3.01). Purposive non-probability sampling technique was used.

**Tools**

Multi-Assessment Personality Series (MAPs)

For the present study MAPs test was used. In MAPs for the present study only 4 dimensions (Adaptability, Boldness, Competition and Leadership) was used for the assessment of personality of sportsmen and non-sportsmen. For the pilot study 120 samples of sportsmen and non-sportsmen was consider. MAPs was administered to them twice for the purpose of

Reliability analysis for computing the reliability of translated (Marathi MAPs) test-retest reliability and inter-item consistency method (crown Back Alpha) the reliability coefficient for MAPs was .79 to .82 obtained. By applying the process of psychometric the test was found to be highly reliable in this way the pilot study was done for the present study.

2) Aggression Scale (A-Scale)

For the present study Aggression scale was used. This scale was used for aggression of sportsmen and non-sportsmen. For the pilot study 120 samples of sportsmen and non-sportsmen was consider. Aggression scale was administered to them twicely for the purpose of reliability analysis for computing the reliability of translated (Marathi A-Scale) test-retest reliability and inter-item consistency method (crown Back Alpha) the reliability coefficient for A-Scale was .81 to .87 obtained. By applying the process of psychometric the test was found to be highly reliable in this way the pilot study was done for the present study.

**Procedures of data collection**

Sentence Completion scale and self concept scale were administered individuals as well as a small group. While collecting the data for the study the later approaches was adopted.

**Variable**

**Independent variable-**

Types of Hand 1) Left                      b) Right

**Dependent Variable**

Aggression

Boldness

## Statistical Analysis and Discussion

Mean Std. Deviation and t values of left hander and right hander players respect to aggression and boldness

Dimension	Left Hander (N=50)		Right Hander (N=50)		t'	df	P
	Mean	SD	Mean	SD			
Aggression	24.36	2.65	20.36	2.87	7.24**	98	< .01
Boldness	13.54	2.45	10.02	2.14	7.65**	98	

Result showed that the Mean of left hander players on dimension aggression was 24.36 and mean of right hander players on dimension was 20.36, the difference between the two mean was highly significant  $t(98) = 7.24$ ,  $p < .01$ . Left hander players had significantly high aggression than the right hander players.

Second result showed that the Mean of left hander players on dimension boldness was 13.54 and mean of right hander players on dimension was 10.02, the difference between the two mean was highly significant  $t(98) = 7.65$ ,  $p < .01$ . Left hander players had significantly high boldness than the right hander players.

### Result:

Left hander players had significantly high aggression than the right hander players.

Left hander players had significantly high boldness than the right hander players.

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## **A Comparative Study Of Self-Perception Of Wellness Among Physical Education Students, Sports Achievers and Dancers**

**Dr. Mantu Baro, Ph. D.**  
**Assistant Professor**  
**Palash Jyoti Boruah, M.P.Ed.**  
**Centre for studies in Physical Education and Sports**  
**Dibrugarh University, Assam, India – 786004**

### **Abstract:**

The purpose of the present study was to determine the differences of self-perception of wellness among physical education students, sports achievers and dancer. For the present study total 60 subjects of 20-25 years of age; 20 physical education students, 20 Sports Achievers and 20 Dancer of centre for Performing arts, Dibrugarh University were selected as subjects randomly. The data were collected by using the self-perception of wellness assessment Questionnaire of the Healthy Lifestyle Questionnaire of Lab Resource Materials, [www.killingly school.org](http://www.killingly school.org) and responses were recorded numerically. To analyze the collected data of the three groups F-test (ANOVA) statistical technique was used employed. The Least Significant Differences (LSD) Post Hoc test was also applied to assess the significant difference between the paired means and the level of significance will be observed at 0.05 level of confidence. On the basis of findings it was concluded that there was significant difference in Self perception of wellness among the groups as  $F_{.05, (2, 57)} = 5.01 > 3.18$  at 0.05 level of confidence. There was significant difference in the emotional wellness among Physical Education Students, Sports Achievers and Dancers ( $F_{.05, (2, 57)} = 6.36 > 3.18$  at 0.05 level of confidence) and no significant difference was observed in case of social wellness. It was also concluded that Self-perception of Wellness of Dancers is significantly better than Physical Education students and Sports Achievers ( $MD = 3.3$  and  $3.75 > CD = 2.60$ ) and  $M = 54.3 > 51$  and  $50.55$ .

Key words: Wellness; Physical Education; Students; Sports Achievers; Dancers

### **Introduction:**

Wellness is the essence of health and fitness. Wellness is all about of enhancement of the quality of people's lives and avoids serious illness by changing the lifestyles. Wellness is the integration of all parts of health and fitness that expands one's inborn capacity to live and work effectively [Kamlesh M.L. (2011)]. Wellness is the right and privilege of everyone. There is no prerequisite for it other than free choice. Physically disabled, aged, scared, insecure and imperfect person can have the wellness in living. One can appreciate himself as a growing, changing person and allow to move towards a healthy, positive and happier life. Wellness is a lifetime process and it is never static. Human wellness is generally considered to be the integration of various dimensions that, when combined effectively, enhance and individual quality of life and their ability to contribute to society [(Hettler (1980))]. The most common of these dimensions are – emotional wellness, physical wellness, social wellness, intellectual wellness, and spiritual wellness and Psychological wellness [Adams et al. (1997); Connolly & Mayers, (2003); Hettler W, (1984 )].

### **Materials And Methods:**

For the present study total 60 subjects of 20-25 years of age; 20 physical education students, 20 Sports Achievers and 20 Dancer of centre for Performing arts, Dibrugarh University were selected as subjects randomly. The data were collected by using the self-perception of wellness assessment Questionnaire of the Healthy Lifestyle Questionnaire of Lab Resource Materials, [www.killingly school.org](http://www.killingly school.org) and responses were recorded numerically. To analyze the collected data of the three groups F-test (ANOVA) statistical technique was used employed. The Least Significant Differences (LSD) Post Hoc test was also applied to assess the significant difference between the paired means and the level of significance will be observed at 0.05 level of confidence.

# Results:

Table – 1: Analysis of variance of Self-perception on Wellness among the Groups

Groups	Mean	Source of Variance	Sum of Square	df	Mean sum of square	F-ratio
Physical Education students	51	Between Groups	167.70	2	83.85	5.01*
Dancers	54.3					
Sports Achievers	50.53	Within Groups	953.15	57	16.72	

\*Significant at 0.05 level of confidence

$$F_{.05} (2, 57) = 3.18$$

From the above table it is learned that there was significant difference of Self-perception on wellness among the three groups as the obtained F-ratio ( $F=5.01$ ) is greater than tabulated  $F_{.05, (2, 57)} = 3.18$  at 0.05 level of confidence.

Table-2: Paired mean difference of Self-perception on Wellness between the groups

Group			MD	CD
Physical education students	Dancer	Sports Achievers		
51	54.3	-----	3.3*	2.60
-----	54.3	50.55	3.75*	
51	-----	50.55	0.45	

\*Significant at 0.05 level of Confidence

From the table it is learned that there is significant difference in Self-perception of Wellness between Physical Education students and Dancers and Dancers and Sports Achievers as the mean difference value of 3.3 and 3.75 is greater than critical difference i.e. 2.60 respectively. Insignificant difference is observed between Physical Education students and Sports achievers as  $MD\ 0.45 < 2.60$ . The differences of mean is represented if the Fig.-1

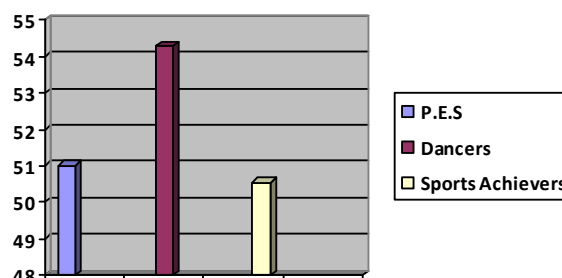


Figure: 1: Graphical presentation of means of Self-perception on Wellness among the groups

Table – 3: Analysis of variance of Emotional Wellness among the Groups

Groups	Mean	Source of Variance	Sum of Square	df	Mean sum of square	F-ratio
P. E. students	9.75	Between Groups	21.23	2	10.62	6.36*
Dancers	10.90					
Sports Achievers	9.55	Within Groups	66.53	57	1.67	

\*Significant at 0.05 level of confidence

$$F_{.05} (2, 57) = 3.18$$

From the above table-3 it is observed that there was significant difference in Emotional wellness among the three groups as the obtained F-ratio ( $F=6.36$ ) is greater than tabulated  $f_{.05, (2, 57)} = 3.18$  at 0.05 level of confidence.

Table-4: Paired mean difference of Emotional Wellness between the groups

Group			MD	CD
Physical education students	Dancer	Sports Achievers		
9.75	10.9	-----	1.15*	0.82
-----	10.9	9.55	1.35*	
9.75	-----	9.55	0.20	

\*Significant at 0.05 level of Confidence

From the table it is learned that there is significant difference in Emotional Wellness between Physical Education students and Dancers & Dancers and Sports Achievers as the mean difference value of 1.15 and 1.35 is greater than critical difference i.e. 0.82 respectively. Insignificant difference is observed between Physical Education students and Sports achievers as MD 0.20 < 0.82.

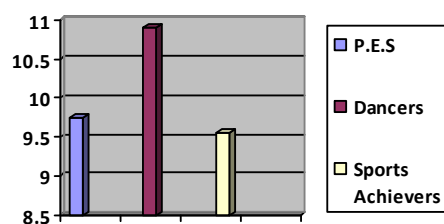


Figure: 2 Graphical presentation of means of Emotional of Wellness among the groups

Table – 5 Analysis of variance of Intellectual Wellness among the Groups

Groups	Mean	Source of Variance	Sum of Square	df	Mean sum of square	F-ratio
Physical Education students	10.65	Between Groups	1.9	2	0.95	0.78 <sup>@</sup>
Dancers	11					
Sports Achievers	10.60	Within Groups	69.35	57	1.22	

<sup>@</sup> Insignificant at 0.05 level of confidence

$$F_{.05} (2, 57) = 3.18$$

From the above table-5 insignificant difference was observed in Intellectual wellness among the three groups as the obtained F-ratio (F=0.78) is lesser than tabulated  $F_{.05} (2, 57) = 3.18$  at 0.05 level of confidence.

Table-6 Paired mean difference of Intellectual Wellness between the groups

Group			MD	CD
Physical education students	Dancer	Sports Achievers		
10.65	11	-----	.35	0.70
-----	11	10.60	.40	
10.65	-----	10.60	0.05	

<sup>@</sup> Insignificant at 0.05 level of Confidence

From the table -6 it is cleared that there is insignificant difference in Intellectual Wellness between the groups as the means difference i.e. 0.35, 0.40 and 0.05 is lesser than critical difference i.e. 0.70 respectively.

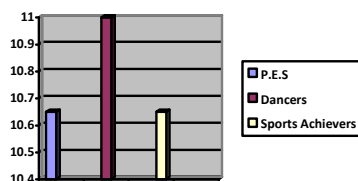


Figure: 3: Graphical presentation of means of Intellectual Wellness among the groups

Table – 7: Analysis of variance of Physical Wellness among the Groups

Groups	Mean	Source of Variance	Sum of Square	df	Mean sum of square	F-ratio
Physical Education students	10.60	Between Groups	6.4	2	3.2	2.18 <sup>@</sup>
Dancers	11					
Sports Achievers	10.20	Within Groups	84	57	1.47	

<sup>@</sup> Insignificant at 0.05 level of confidence

$$F_{.05} (2, 57) = 3.18$$

From the above table-7 insignificant difference was observed in Physical wellness among the three groups as the obtained F-ratio ( $F=2.18$ ) is lesser than tabulated  $F_{.05, (2, 57)} = 3.18$  at 0.05 level of confidence.

Table-8: Paired mean difference of Physical Wellness between the groups

Group			MD	CD
Physical education students	Dancer	Sports Achievers		
10.60	11	-----	0.40	0.78 <sup>@</sup>
-----	11	10.20	0.80	
10.60	-----	10.20	0.40	

<sup>@</sup> Insignificant at 0.05 level of Confidence

From the table - 8 revealed the insignificant difference in Physical Wellness between the groups as the means difference i.e. 0.40, 0.80 and 0.40 is lesser than critical difference i.e. 0.78 respectively. The differences of mean is represented if the Fig.-

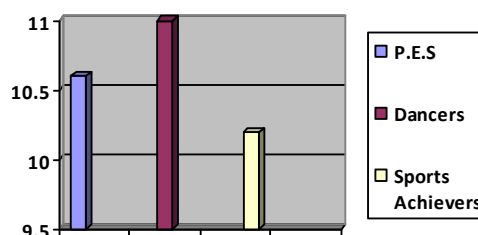


Figure: 4: Graphical presentation of means of Physical Wellness among the groups

Table – 9: Analysis of variance of Social Wellness among the Groups

Groups	Mean	Source of Variance	Sum of Square	df	Mean sum of square	F-ratio
P. E. students	10.20	Between Groups	0.53	2	0.265	0.15 <sup>@</sup>
Dancers	10.40					
Sports Achievers	10.20	Within Groups	101.20	57	1.78	

<sup>@</sup> Insignificant at 0.05 level of confidence

$F_{.05, (2, 57)} = 3.18$

From the above table-9 insignificant difference was observed in Social wellness among the three groups as the obtained F-ratio ( $F=0.15$ ) is lesser than tabulated  $F_{.05, (2, 57)} = 3.18$  at 0.05 level of confidence.

Table-10: Paired mean difference of Social Wellness between the groups

Group			MD	CD
Physical education students	Dancer	Sports Achievers		
10.20	1.40	-----	0.20	0.84
-----	1.40	10.20	0.20	
10.20	-----	10.20	0.00	

<sup>@</sup> Insignificant at 0.05 level of Confidence

From the table - 10 it is showed the insignificant difference in Social Wellness between the groups as the means difference i.e. 0.20, 0.20 is lesser than critical difference i.e. 0.84 respectively. No difference is found between physical education students and sports achievers ( $MD=0$ ).

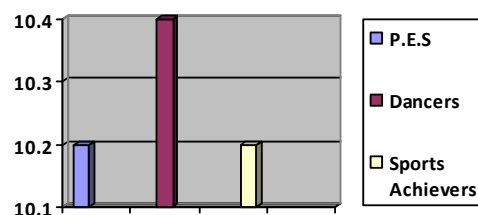


Figure: 5: Graphical presentation of means of Social Wellness among the groups

Table – 11 Analysis of variance of Spiritual Wellness among the Groups

Groups	Mean	Source of Variance	Sum of Square	df	Mean sum of square	F-ratio
Physical Education students	9.80	Between Groups	15.63	2	7.82	4.89*
Dancers	10.95					
Sports Achievers	9.95	Within Groups	91.10	57	1.60	

\*Significant at 0.05 level of confidence

$F_{.05} (2, 57) = 3.18$

From the above table-11 insignificant difference was observed in Spiritual wellness among the three groups as the obtained F-ratio ( $F=4.89$ ) is greater than tabulated  $F_{.05} (2, 57) = 3.18$  at 0.05 level of confidence.

Table-12

Paired mean difference of Spiritual Wellness between the groups

Group			MD	CD
Physical education students	Dancer	Sports Achievers		
9.80	10.95	-----	1.15*	0.85
-----	10.95	9.95	1*	
9.80	-----	9.95	0.15	

\*Significant at 0.05 level of Confidence

From the table -12 it is cleared that there is significant difference in Spiritual Wellness between the groups as the means difference ( $MD= 1.15$  and  $1 > 0.85$ ) and insignificant difference was found between Physical Education students and Sports achievers ( $0.15 < 0.85$ ). The differences of mean is represented if the Fig.-6

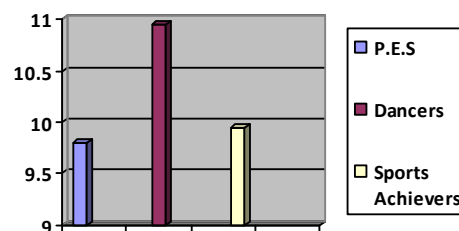


Figure: 6: Graphical presentation of means of Spiritual Wellness among the groups

## Discussion

From the above table 1 the significant difference of Self-perception on wellness among the three groups was found as the obtained F-ratio  $5.01 > 3.18$  at 0.05 level of confidence.

Table -2 revealed that the Self-perception of Wellness of Dancers is significantly better than Physical Education students and Sports Achievers ( $MD= 3.3$  and  $3.75 > CD= 2.60$ ) and  $M= 54.3 > 51$  and  $50.55$ . From table -3 and 4 significant difference was observed in Emotional wellness among the three groups as the obtained  $F=6.36 >$  tabulated  $F_{.05} (2, 57) = 3.18$  at 0.05 level of confidence and Dancers have the significantly better Emotional Wellness than Physical Education students and Sports Achievers as the mean difference value of  $1.15$  and  $1.35 > CD=0.82$ . Insignificant difference is observed between Physical Education students and Sports achievers as  $MD 0.20 < 0.82$ .

Table-5 and 6 showed significant difference in Intellectual wellness among the three groups as the obtained F-ratio ( $F=0.78$ ) is lesser than tabulated  $F_{.05} (2, 57) = 3.18$  at 0.05 and insignificant difference in Intellectual Wellness between the groups as the means difference i.e.  $0.35$ ,  $0.40$  and  $0.05$  is lesser than critical difference i.e.  $0.70$  respectively.

From table-7 insignificant difference was observed in Physical wellness among the three groups as the obtained F-ratio ( $F=2.18$ ) is lesser than tabulated  $F_{.05} (2, 57) = 3.18$  at 0.05 level of confidence. Table - 8 revealed the insignificant difference in Physical Wellness between the groups as the means difference i.e.  $0.40$ ,  $0.80$  and  $0.40$  is lesser than critical difference i.e.  $0.78$  respectively.

From table-9 insignificant difference was observed in Social wellness among the three groups as the obtained F-ratio ( $F=0.15$ ) is lesser than tabulated  $F_{.05, (2, 57)} = 3.18$  at 0.05 level of confidence. Table - 10 showed the insignificant difference in Social Wellness between the groups as the means difference i.e. 0.20, 0.20 is lesser than critical difference i.e. 0.84 respectively. No difference is found between physical education students and sports achievers ( $MD=0$ ).

From table-11 insignificant difference was observed in Spiritual wellness among the three groups as the obtained F-ratio ( $F=4.89$ ) is greater than tabulated  $F_{.05, (2, 57)} = 3.18$  at 0.05 level of confidence and table -12 cleared that there is significant difference in Spiritual Wellness between the groups as the means difference ( $MD= 1.15$  and  $1 > 0.85$ ) and insignificant difference was found between Physical Education students and Sports achievers ( $0.15 < 0.85$ ).

The reason behind the finding of the study might be due to the nature and characteristics of the activities. In the physical education and Sports the individual has to perform the various types of movements. Though they have to perform with the groups they do not take care of their physique, health or any kind of relationship. But the dancers are very much concern on these. They use to take everything emotionally and always want to maintain the good relationship with others especially with seniors or experts. Hence, the dimensions of wellness might be affected.

#### **Conclusion:**

On the basis of findings the following conclusions were drawn.

There was significant difference in Self perception of wellness among the groups as  $F_{.05, (2, 57)} = 5.01 > 3.18$  at 0.05 level of confidence.

There was significant difference in the emotional wellness among Physical Education Students, Sports Achievers and Dancers ( $F_{.05, (2, 57)} = 6.36 > 3.18$  at 0.05 level of confidence) and insignificant difference is observed in case of social wellness

It was also concluded that Self-perception of Wellness of Dancers is significantly better than Physical Education students and Sports Achievers ( $MD= 3.3$  and  $3.75 > CD= 2.60$ ) and  $M= 54.3 > 51$  and  $50.55$ .

#### **Acknowledgments:**

I owe my heartfelt thanks to all the subjects for helping in the completion of the study.

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## Effect of Using Help Exercises in Acquire Rhythmic Ability for Freestyle Swimming Movements among Physical Education Students

Dr. Bahjat Ahmad Abu Tame  
Associate Professor,

Department of Physical Education, Palestine Technical University- Kadoorie, Palestine.  
Email: ba\_tame@yahoo.com

### Abstract:

The present study aims to find out effect of using proposed help rhythmic exercises on learn and acquisition of kinetic rhythmic (kinetic jointing) in special performance of swimming movements. The researcher utilized experimental design due to appropriate to achieving the study objectives with purposely sample included 16 students who have no previous experience in the freestyle swimming, the sample divided into two equal groups, control group they learned normal way without using rhythmic exercises, study group learned by using proposed help rhythmic exercises for a period six weeks that include three teaching units per week, each teaching unit 60 minutes. The results showed that skill tests used in the study (freestyle swimming for a distance of **25** meters, traveled distance for a swim **25** meters freestyle per second and evaluate kinetic rhythmic in performance of freestyle swimming for a distance of **25** meters) led to differences in the level of performance between the control and study groups in post measurements in favor of study group. The researcher recommended using proposed rhythmic exercises to help in the teaching process of freestyle swimming for beginners and focus on it in both parts warm and main during teaching unit.

**Key words:** Help Exercises, Rhythmic Ability, Freestyle Swimming.

### 1. Introduction:

The rhythmic abilities depend on motion performance type, learning motion speed and ability to modify kinetic mind programs according to implementation circumstances and effectiveness beauty of movements. The most important principles of kinetic learning in acquisition of kinetic skills to emphasize the balanced learning between various teaching methods and means. (Zakie, et al., 2002, 52) declared that the use of teaching aids in process of learning kinetic skills lead to the construction and development of perception motion for learner individual and improved performance specifications and influence in the learning speed.

The swimming is one of sporting events that characterized a private condition from other sports, which practice in water, the basic types of competitive swimming skills and which freestyle swimming ones in the movements that its performance require to acquiring kinetic rhythmic high (kinetic jointing), this requires a good level of compatibility (neuromuscular), to reach the learner to desired level of learn a skill and its mastery and retention. From here came the researcher idea to conduct this study in order to identify the effect of using help rhythmic exercises in acquiring kinetic rhythmic for freestyle swimming movements.

### Hypothesis:

No statistically significant differences at ( $\alpha \leq 0.05$ ) level in using help rhythmic exercises to learn freestyle swimming for physical education students between control group and study group in post measurements.

### 2. Materials and method:

#### Methodology design

The researcher used the experimental method in a manner equal groups through conduct the post measurements for both groups (control and study), due to appropriate to current study nature.

#### Study population:

The study population consisted **441** students in Department of Physical Education, Palestine Technical University- Kadoorie for the academic year **2014/2015**.

**Study sample:**

The study sample was selected purposely from third level students, included **16** students who have no previous experience in freestyle swimming, divided into two equal group, control group they learned normal way without using rhythmic exercises, study group learned by using proposed help rhythmic exercises. The study was conducted in the summer semester for academic year **2014/2015**, in period from **21 July** to **28 august 2015**. The study duration included six weeks that include three teaching units per week, 60 minutes per unit, spread over in three parts: primary part (warm and exercises), main part (teaching activity and applied activity) and final part (free activity and leave).

**Study tools and tests:****Measurement tools**

- Stadiometer apparatus to measure the height (**cm**), Medical weighing machine to measure the weight (**kg**)., Measuring tape to measure the distance (**meter**) and Stop watch (**second**).

These devices have been calibrated with other devices similar to ensure its validity before use.

**Skill tests:**

By reviewing books and specialized scientific sources such as (**Alqiet, 2004, 61**), and reviewed some studies in study field as a study (**Abu Tame, 2015**), (**Abu Tame, 2014**), (**Abu Tame, 2007**), (**Azziz, 2010**), (**Abu Tame, 1997**) (**Abu Zama', 1997**). To determine progress level of skill the researcher adopted some measurements and tests skill after confirmation its validity, reliability and objectivity.

**Description of skill tests under study:**

**First test:** Freestyle swimming test by a full rhythmic **25 meters (per second)**.

**Used tools** : half an Olympic swimming pool (**25 meters**), stop watch, whistle.

**Performance method** : Stand half, back facing the pool wall, torso slant forward on water surface, and hands stretched out, push the wall by legs together for horizontal sliding on water surface and move forward by each of reciprocity arms movements with vertical feet movements (free swimming by full rhythmic).

**Measuring unit::** time in seconds.

**Recording mode:** time of traveled distance record per second from the push moment of wall by legs together till fingers swimmer touch other edge pool in end **25 meters**.

**Second test:** Traveled distance test for a freestyle swimming **25 meters per second (meter)**.

**Tools and performance method:** same first exercise.

**Measuring unit** : meters per second.

**Recording Mode:** time of traveled distance record per second from the push moment of wall by legs together till fingers swimmer touch other edge pool in end **25 meters**. The traveled distance divided on performed time for each learner.

**Third test:** evaluation of kinetic rhythmic for freestyle swimming performance **25 meters (degree)**.

**Tools and performance method:** same first and second exercise.

**measuring unit:** degree from **10** marks.

**Recording mode:** the committee consists three swimming teachers, they stand on pool edge to evaluate kinetic rhythmic level for each learner by giving him degree in rhythmic movements of different body parts of the body movements (body position, arm movements, both leg strokes, breathing, rhythmic), then divided total degrees for each learner on **3** to get the evaluation average from **10** degrees.

**Proposed help rhythmic exercises:**

- (stand - opened feet) head rotation to both sides interchangeably with arms rise to forward and backward.

performance **30 seconds X 5** frequencies

little rest between frequencies.

- (stand - fixed waist) both leg strokes to forward and backward interchangeably with head rotation to both sides reverse both leg strokes.

performance **30 seconds X 5** frequencies.

little rest between frequencies.

- (stand - fixed waist) both legs abduction and adduction to both sides alternately with arms rise to forward and backward reverse both leg strokes.

performance **30 seconds X 5** frequencies.

little rest between frequencies.

- (stand - Opened feet) both leg strokes to forward and backward interchangeably with head rotation to both sides reverse both leg strokes + head rotation to both sides.

performance **30 seconds X 5** frequencies.

little rest between frequencies.

- (stand - together feet) both legs abduction and adduction to both sides alternately with arms rise to forward and backward + head rotation to both sides.  
performance **30** seconds X **5** frequencies.  
little rest between frequencies.

**kinetic skills for freestyle swimming:**

- body flow on water surface.
- both leg strokes in horizontal buoyancy on abdomen
- arms move from horizontal buoyancy position on abdomen.
- breathing, inspiratory mechanism out of water and expiratory into the water.
- acquisition of compatibility between both leg strokes and breathing
- acquisition of compatibility between movements arms and breathing.
- acquisition of full compatibility for crawl swimming on abdomen (freestyle swimming).

**variables of Study:**

**\* Independent variable:**

Help rhythmic exercises that used in teaching of study group.

**\* Dependent variable:**

skill performance level with tests under study.

**3. Results and discussion:**

The researcher used T-test between control and study groups in post measurements for achieving study hypothesis by using some tests under study as follow table (1).

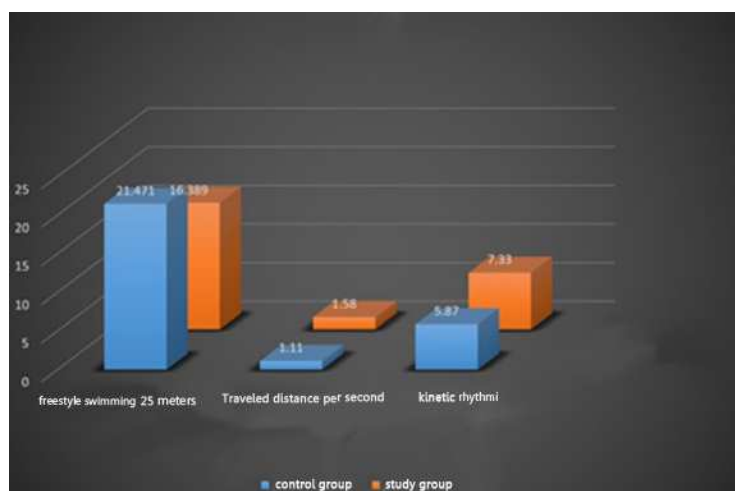
**Table (1) T-test outcomes in significant differences between both groups (control and study) in post measurements.**

Tests	Unit	Control group (N=8)		Study group (N=8)		T-test	P-value
		Mean	S.D	Mean	S.D		
Freestyle swimming by full rhythmic 25 meters	Second	21.471	0.754	16.389	1.907	7.01	0.000
Traveled distance for freestyle swimming 25 meters per second	Meter	1.11	0.145	1.58	0.255	- 4.598	0.000
Evaluation kinetic rhythmic for performance	Degree	5.87	0.5007	7.33	0.393	- 6.501	0.000

\* Statistically significant at ( $\alpha \leq 0.05$ ), T-spreadsheet = **1.761±** and **F=14**.

The table no.(1) shows that T-test value between both groups (control and study) in tests under study was more than T-spreadsheet (**1.761**) with freestyle swimming by full rhythmic 25 meters, while T-test with travelled distance for freestyle swimming **25** meters per second and evaluation kinetic rhythmic for performance less than T-spreadsheet (**-1.761**), it is statistically significant at ( $\alpha \leq 0.05$ ). So there are statistically significant differences in performance level between control and study groups in post measurements in favour of study group used help rhythmic exercises.

The researcher believes that the focus on help rhythmic exercises depend its performance on compatibility between nervous system and skeletal muscles, also between central nervous system and internal organs, that helped in compatibility (muscular, nervous ). This Acquiring for rhythmic between these systems and skeletal muscles resulting from constant frequency of rhythmic exercises play an important role in development of nervous system's ability to send directives kinetics different and consistent at same time, that worked to development of rhythmic ability for beginner, which led to acquisition rhythmic kinetic and develop skills performance level for freestyle swimming movements . In this mentioned (**Mahjob and Badre, 2002, 113**). That the rhythmic is process coupled with potential of musculoskeletal system to regulate inner strength with external strength. This result agreed with study result (Azziz, 2010) there is effect for using help exercises to learn and acquire kinetic rhythmic in freestyle swimming performance movements. Agreed with study result (**Abu Zama, 1997**) in terms of increasing the volume of work directed to development of rhythmic abilities contributed to improve the skills performance level for basic swimming. And it was similar result with the study result (**Abu Tame, 2015**) in using help means contribute to speed of learning and mastering freestyle swimming. Figure no.(1) shows this results clearly:



**Figure (1) shows post-test differences between both groups (control and study)**

#### **4. Conclusions:**

From results and discussion mentioned above. The researcher concludes, following:  
Continuous frequency of proposed help rhythmic exercises contributed to development portability general kinetic jointing (rhythmic abilities) among learners. Proposed help rhythmic exercises contributed to learn and acquire the rhythmic kinetic (kinetic jointing) in performance of freestyle swimming movements. Using a proposed help exercises in development of kinetic sense among learners led to acquiring the freestyle swimming movements a kind of vital performance.

#### **5. Recommendations:**

Through reviewed the study aims and results. The researcher recommends, following:

- Using a proposed help rhythmic exercises in teaching process of freestyle swimming for beginners and focus on it during warm and main parts in teaching unit.
- Conduct similar studies to determine the impact of using a help rhythmic exercises to learn and acquire the special rhythmic kinetic in performance other swimming movements.
- Conduct similar studies to find out effect of using a help rhythmic exercises to learn and acquire the special rhythmic kinetic for basic swimming skills.

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## **A Comparative Study of Agility among Soft Ball Players and Cricketers of Osmania University**

**Dr.K. Deepla**  
**Chairman, Board of Studies in Physical Education**  
**Osmania University**  
**Telangana, State-India**

### **Introduction**

Cricket is a bat-and-ball game played between two teams of 11 players each on a field at the centre of which is a rectangular 22-yard long pitch. The game is played by 120 million players in many countries, making it the world's second most popular sport. Each team takes its turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat away from the fielders so he can run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, or a specified number of over's of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat.

In professional cricket the length of a game ranges from 20 over's per side to Test cricket played over five days. The Cricket is maintained by the International Cricket Council (ICC) and the Marylebone Cricket Club (MCC) with additional Standard Playing Conditions for Test matches and One Day Internationals. Cricket was first played in southern England in or before the 16th century. By the end of the 18th century, it had developed to be the national sport of England. The expansion of the British Empire led to cricket being played overseas and by the mid-19th century the first international match was held. ICC, the game's governing body, has 10 full members. The game is most popular in Australasia, England, the Indian subcontinent, the West Indies and Southern Africa.

Softball is a variant of baseball played with a larger ball on a smaller field. It was invented in 1887 in Chicago as an indoor game. It was at various times called indoor baseball, mush ball, playground, soft bund ball, kitten ball, and, because it was also played by women, ladies' baseball. The name *softball* was given to the game in 1926. A tournament held in 1933 at the Fairs purred interest in the game. The Amateur Softball Association of America (founded 1933) governs the game in the United States and sponsors annual sectional and World Series championships. The World Baseball Softball Confederation (WBSC) regulates rules of play in more than 110 countries, including the United States and Canada; before the WBSC was formed in 2013, the International Softball Federation filled this role. Women's fast-pitch softball became a Summer Olympic sport in 1996, but it (and baseball) were dropped in 2005 from the 2012 games.

From a T20 game that is played for 3 hours to an International Test Match that stretches to 5 days, the game of cricket requires a high level of fitness for a professional player to perform effectively. Every cricketer needs to undergo a specific proper strength, Speed and conditioning program. For example a batsman may damage his tennis elbow if he pulls a shot too quickly or twists his arm suddenly. Similarly a bowler may risk ligament tear or ankle damage if he twists his leg. A strength conditioning program helps the body to adapt quickly to sudden movements in the sport and reduces chances of bodily damage.

In addition to the high level of skill required to play Cricket, a successful player needs good balance and core strength, speed for running between the wickets and in the field, and fast bowlers particularly need very good speed and power. Polls we have run on this site about the fitness requirements for cricket, have determined balance, coordination and speed to be most important.

Motor Components required for Cricketers

- 1.Speed / Quickness, Balance & Coordination
- 2.Motivation & Self Confidence, Skill and Technique
- 3.Strength & Power, Reaction Time
4. Analytic & Tactical Abilit
- 5.Flexibility, Agility
- 6.Body Size and Composition, Aerobic Endurance.

There are several components of fitness that are important for success for all softball players, though there are positional differences in the requirements for fitness.

1. Aerobic Fitness
2. Flexiblity
3. Strength and Power
4. Speed and Agility.

#### Methodology:

The sample for the present study consists of 20 Male Soft Ball Players and 20 Male Cricketers between the age group of 18-22 Years of Osmania University.To assess the agility Shuttle Run Test were conducted on Soft Ball Players and Cricketers with the help of Track and Field Officials.

#### Agility Shuttle Run Test

This test describes the procedure as used in the President's Challenge Fitness Awards. The variations listed below give other ways to also perform this test.

purpose: this is a test of speed and agility, which is important in many sports.

equipment required: wooden blocks, marker cones, measurement tape, stopwatch, non-slip surface.

procedure: This test requires the person to run back and forth between two parallel lines as fast as possible. Set up two lines of cones 30 feet apart or use line markings, and place two blocks of wood or a similar object behind one of the lines. Starting at the line opposite the blocks, on the signal "Ready? Go!" the participant runs to the other line, picks up a block and returns to place it behind the starting line, then returns to pick up the second block, then runs with it back across the line.

scoring: Two or more trails may be performed, and the quickest time is recorded. Results are recorded to the nearest tenth of a second.

#### Results:

This study shows that Cricketers are having better agility compare to the Soft Ball Players in shuttle Run Test

Table-I: Mean values and Independent Samples Test of Shuttle Run Test between Cricketers and Soft Ball Players

Variables	Group	Mean	SD	t	Sig(2-tailed)
Shuttle Run Test	Cricketers	14.10	0.56	2.53	0.02
	Soft Ball Players	15.48	1.20		

\*Significant at 0.05 level

In Table –I the Mean Values of Shuttle Run Test of Cricketers is 14.10 and Soft ball Players is 15.48 The Average Mean of Cricketers in Shuttle Run Test is lesser than the Soft Ball Players. The Standard Deviation of Cricketers 0.56 and Soft Ball Players in 1.20 and t value is 2.53

#### Discussion:

There is a range of physical and mental components that contribute to successful performance in sports. Each sport and activity requires a specific set of these skills. Being successful in one sport does not necessarily make you successful in another, as success requires a whole range of factors to come together and interact in the right way.Fitness is just one of the factors, and for many sports plays a major role in success. In Cricket bowlers require agilithy to do fast bowling,fielding and batting . It was found that Cricketers are having good agility compare to Compare to the Soft Ball Players. Hence it is also concluded that Speed bowling is required in Cricket compare to Soft Ball and Cricketers are having better agility than soft ball players.

Speed and agility is one of the main fitness components, important for success in many sports. For some athletes such as Track and Field sprinters, sprint swimmers, cyclists and speed skaters, speed is the most important aspect of fitness. speed requires a training program that focuses on leg strength and power, with appropriate technique training to best utilize your strength and power development. Speed plays an important role in Cricket and Soft ball to exhibit the high level of performance

**Conclusion:**

- 1.It is concluded that Cricketers are having better agility than Soft Ball Players
- 2.Conditioning Exercises plays a major role for improvement of speed among Soft Ball and Cricketers.
3. Sprint training is not all about running fast. It is important to have a good fitness base to build speed upon, and to have the capacity to train regularly. Flexibility is important so that good running form can be achieved, exercises can be performed over the full range of motion and to reduce the incidence of injury.

**Recommendations:**

1. Similar studies can be conducted on other Events and among females.
- 2.This study also helps the physical educators and coaches to improve their training regime to excel in Soft Ball and Cricketers.
3. Sprint training session should begin with a series of sprint drills that will help the athlete train the firing patterns for the appropriate muscle groups, and also strengthen those muscles while performing action specific exercises. It is important for Cricketers and Soft Ball Players.

**Acknowledgements:**

I am thankful to Mr. Jaya Prakash, Mr.Manohar Reddy, Cricket Coaches and Mr. K.Suresh Reddy, Soft Ball Coach and Mr. A.Xavier, Athletics Coach for their help in accomplishment of the Study.

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## **Effect of Plyometric Exercises for Development of Explosive Strength and Speed among High Jumpers of Hyderabad District in Telangana**

**Dr. Rajesh Kumar**  
Professor, Department of Physical Education  
Osmania University, Hyderabad, Telangana, India  
Email:rajesh2sports@yahoo.co.in  
**Prof.J.Prabhakar Rao**  
Principal, University College of Physical Education  
Osmania University, Hyderabad, Telangana, India  
**Dr.B.Sunil Kumar**  
Associate Professor, Dept. of Physical Education, OU,Hyd

### **Abstract**

**Introduction:** Plyometrics, also known as "jump training" or "plyos", are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle extension to a contraction in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometrics are primarily used by athletes, especially martial artists, sprinters and high jumpers, to improve performance, and are used in the fitness field to a much lesser degree. Plyometrics is a suitable form of power training for many team and individual sports. High Jumpers today are bigger, faster and more explosive than ever before. Explosive Strength defined as the rate of force development at the onset of the contraction. The goal of training Plyometric training is to improve the rate of force development to create more force in less time for the optimum results. The run must be long enough to give gradual and smooth acceleration to the desired speed at the take-off. Speed Plays a important role in getting the higher performances in High Jump. The purpose of the present study to find out the effect of plyometric exercises for the development of explosive Strength and speed among High Jumpers of Hyderabad. **Methodology:** The sample for the present study consists of 30 Male High Jumpers of Hyderabad District out of which 15 are experimental group and 15 are controlled group. Plyometric exercises such as hopping, bounding, depth jumps, tuck jumps, hurdle jumps etc were given to experimental group on alternate days i.e. three sessions per week for eight weeks along with the High Jump training and controlled group were given the general training of High jump. Pre Test and Post Test were conducted in Standing Broad Jump to measure the Explosive Strength and 30 M Run to measure the speed among experimental group and controlled group. **Results and Discussion:** This study shows that due to the plyometric training there is a improvement of experimental group in the Explosive Strength and Speed and controlled group has not improved a lot in performance in explosive strength and speed. Eccentric Strength development is important for long jumpers. The development of explosive strength plays a major part in the over training programme in long jump. The results from the technique intervention study confirm the role of speed work in the training program of the long jump athlete. The role of explosive strength and speed is important in long jump performance. **Conclusions:** It is concluded that due to plyometric exercises there will be improvement in explosive strength and speed among high jumpers experimental group and due to the general training the control group has not improved a lot and little decrease in performance.

### **Key Words:**

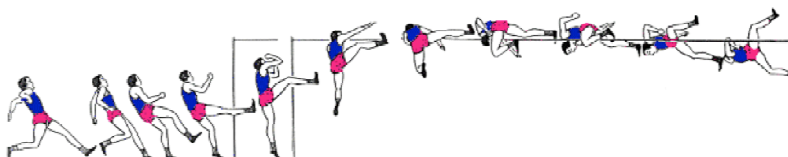
plyometric exercises, speed, explosive strength, hopping, bounding etc.

**Introduction:**

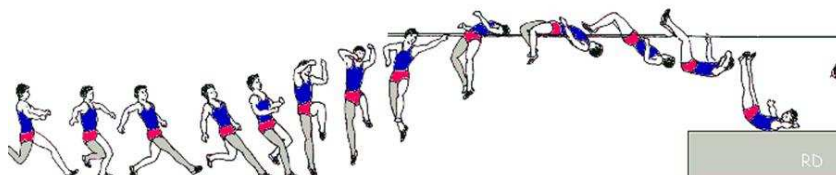
Plyometrics, also known as "jump training" or "plyos", are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle extension to a contraction in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometrics are primarily used by athletes, especially martial artists, sprinters and high jumpers, to improve performance, and are used in the fitness field to a much lesser degree. Plyometrics is a suitable form of power training for many team and individual sports. High Jumpers today are bigger, faster and more explosive than ever before. Explosive Strength defined as the rate of force development at the onset of the contraction. The goal of training Plyometric training is to improve the rate of force development to create more force in less time for the optimum results. The high jump is a track and field event in which competitors must jump unaided over a horizontal bar placed at measured heights without dislodging it. In its modern most practised format, a bar is placed between two standards with a crash mat for landing. At the elite level, athletes run towards the bar and use the Fosbury Flop method of jumping, leaping head first with their back to the bar. Performed since ancient times, competitors have introduced increasingly more effective techniques to arrive at the current form. The discipline is, alongside the pole vault, one of two vertical clearance events to feature on the Olympic athletics programme. It is contested at the World Championships in Athletics and IAAF World Indoor Championships, and is a common occurrence at track and field meetings. The high jump was among the first events deemed acceptable for women, having been held at the 1928 Olympic Games. Javier Sotomayor (Cuba) is the current men's record holder with a jump of 2.45 m (8 ft 0¼ in) set in 1993 – the longest standing record in the history of the men's high jump. Stefka Kostadinova (Bulgaria) has held the women's world record at 2.09 m (6 ft 10¼ in) since 1987, also the longest-held record in the event.

Techniques in high jump

Straddle Technique



Fosbury Flop

**Method:**

The purpose of the present study to find out the effect of plyometric exercises for the development of explosive Strength and speed among High Jumpers of Hyderabad. The sample for the present study consists of 30 Male High Jumpers of Hyderabad District out of which 15 are experimental group and 15 are controlled group. Plyometric exercises such as hopping, bounding, depth jumps, tuck jumps, hurdle jumps etc were given to experimental group on alternate days i.e. three sessions per week for eight weeks along with the High Jump training and controlled group were given the general training of High jump. Pre Test and Post Test were conducted in Standing Broad Jump to measure the Explosive Strength and 30 M Run to measure the speed among experimental group and controlled group.

**Result:**

This results of the study shows that due to the plyometric training there is a improvement of experimental group in the Explosive Strength and Speed and controlled group is decreased in performance of explosive strength and speed due to the general training.

Table No. I: Mean values of 30 M run test between experimental and control group of High Jumpers

Variables	Group	Pre Test Mean	Post Test Mean	t	P – Value
30 M Run Test	Experimental	4.53	4.23	2.58	0.000
	Control	4.66	4.73		

The Experimental Group of 30 M Run Men is 4.53 in Pre Test and Controlled Group mean is 4.66 in Pre Test there is a difference of 0.13 in Pre Test. The Experimental Group Mean is 4.23 in Post Test and Controlled Group mean is 4.73, the Experimental Group mean in Post Test in 30 M Run is decreased from 4.53 to 4.23 there is a improvement of 0.30 from Pre Test to Post and Control Group Mean is post test is 4.73 there is a increase of 4.66 to 4.73 from Pre Test to Post, the performance is come down to 0.07 in the controlled group. Due to the Plyometric Training the Experimental group has improved a lot.

Table No. II: Mean values of S.B. Jump between experimental and control groups of High jumpers

Variables	Group	Pre Test Mean	Post Test Mean	t	P – Value
Standing Broad Jump	Experimental	2.49	2.54	1.12	0.000
	Control	2.47	2.47		

The Experimental Group of Standing Broad Jump is 2.49 in Pre Test and Controlled Group mean is 2.47 in Pre Test there is a difference of 0.02 in Pre Test. The Experimental Group Mean is 2.54 in Post Test and Controlled Group mean is 2.47 the Experimental Group mean in Post Test in Standing Broad Jump is increased from 2.49 to 2.54 there is a improvement of 0.05 from Pre Test to Post and Control Group Mean is post test is 2.47 the performance is same due to the general training in the controlled group. Due to the Plyometric Training the Experimental group has improved a lot.

#### **Discussion:**

The Strength, Speed and Endurance are the important abilities for successful performance. The dominant ability is the one from which the sport requires higher contribution to achieve the high success in the sports and games. Most sports require peak performance in at least two abilities. The Relationships among strength, Speed, and endurance create crucial physical athletic qualities. Specific development of a biomotor ability must be methodical. A developed dominant ability directly or indirectly effects the other motor abilities. When an athlete develops strength he may experience a positive transfer to speed and endurance. On the other hand, a strength training program designed only to develop maximum strength may negatively effect the development of aerobic endurance. A high-jumper propelling himself off of the ground requires explosive strength and speed for better performance.

#### **Conclusions:**

It is concluded that the due to the Plyometric training develops the strength and power in the legs. It also improve the co-ordination in the arms and legs and promotes in developing the Explosive Strength and Speed. In this Study it is concluded that Due to the Plyometric Training there is a development of Speed and explosive strength among High jumpers.

#### **Recommendations:**

Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve the motor abilities of the Jumpers.

#### **Acknowledgements:**

I am very thankful to Mr.A.Xavier, Athletics Coach for his help for the Study.

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## **A Comparative Study of Explosive Strength and Speed among Net Ball Players and Korf Ball Players Of Hyderabad District in Telangana**

**E.B.Srikanth**

**Ph.D Scholar, Department of Physical Education  
Osmania University, Hyderabad, Telangana, India**

**J.Babu Lal**

**University College of Physical Education  
Osmania University, Hyderabad, Telangana, India**

### **Abstract:**

#### **Introduction**

Korfbal is a ball sport, with similarities to netball and basketball. Korfbal is a mixed gender team sport, with similarities to netball and basketball. A team consists of eight players; four female and four male. A team also includes a coach. It was founded in the Netherlands in 1902 by Nico Broekhuysen. In the Netherlands there are around 580 clubs, and over 100,000 people playing korfbal. The sport is also very popular in Belgium and Taiwan and is played in 54 other countries. Shooting is one of the most important skills for a basketball and Korfbal player. Shooting the basketball and Korfbal from a set position, a running layup or a jump shot, are all crucial skills for a basketball and Korfbal player to master. Netball is a ball sport played by two teams of seven players. Its development, derived from early versions of basketball, began in England in the 1890s. By 1960, international playing rules had been standardised for the game, and the International Federation of Netball and Women's Basketball (later renamed the International Netball Federation) was formed. As of 2011, the INF comprises more than 60 national teams organized into five global regions.**Methodology:**The sample for the present study consists of 20 male Korf ball players and 20 Male Net Ball Players of a Hyderabad District The Korf ball Players and Net ball players are the regular players of the Hyderabad District .To asses the Explosive Strength Standing Broad jump test are used and to asses the speed the 30 M Run were conducted. The Tests were conducted by the qualified Technical officials of the Athletics.**Results and Discussion:** The results of the study shows that Korf Ball Players are having the better explosive strength and Net ball Players are having better speed. Speed and explosive power are important components of success in many sports. Hence Coaches in Korf Ball and Net ball must make their players to improve the fitness ability in order to play better korf ball and net ball without getting the fatigue. Physical Conditioning of Korf ball Players and Net ball Players are very important to achieve the high level of Performances.

**Key words:** Korf ball, Net ball, explosive strength and speed

#### **Introduction:**

Korfbal (Dutch *Korfbal*) is a mixed gender team sport, with similarities to netball and basketball. A team consists of eight players; four female and four male. A team also includes a coach. It was founded in the Netherlands in 1902 by Nico Broekhuysen. In the Netherlands there are around 580 clubs, and over 100,000 people playing korfbal. The sport is also very popular in Belgium and Taiwan and is played in 54 other countries.The game consists of Two Half of 30 minutes each, with an interval of 5 minutes between the first and second half. After every two Goals the team has to change the courts.

Netball is one of many sports that developed its unique form and structure from another, transplanted sport—in this case, from the United States to Great Britain—and then, as a result of that move, evolving into a significantly different sport. Netball was introduced to England in 1895 as the indoor game of basketball, which it greatly resembles, although a staccato game and a sport of stop, start, catch, and shoot compared to the all-action fluidity of basketball.Netball is an international sport, played by two teams of seven players and based on throwing and catching.

Traditionally it is played by women but mixed and men's netball is becoming increasingly popular. The game consists of four quarters of 15 minutes each, with an interval of 3 minutes between the first/second and third/fourth quarters and an interval of 5 minutes at half time. Teams change end each quarter.

#### **Methodology:**

To find out the Explosive Strength and Speed among Male Net Ball and Male Korf Ball Players of Hyderabad District in Telangana. The sample for the present study consists of 20 male Korf ball players and 20 Male Net Ball Players of a Hyderabad District. The Korf ball Players and Net ball players are the regular players of the Hyderabad District. To assess the Explosive Strength Standing Broad jump test are used and to assess the speed the 30 M Run were conducted. The Tests were conducted by the qualified Technical officials of the Athletics.

#### **Results and Discussion:**

**Table No. I: Showing the Mean Values of Net Ball Players and Korf Ball Players in 30 M Run and Standing Broad Jump**

Test Items	GROUP	N	Mean	Std. Deviation	Std. Error Mean	t	Df	Sig. (2-tailed)
30 M	Net ball	20	5.01	0.23	0.07	-1.80	38.00	0.09
	Korf Ball	20	5.29	0.45	0.14			
SBJ	Korf ball	20	2.24	0.11	0.04	3.62	38.00	0.00
	Net Ball	20	2.15	0.05	0.02			

The Mean values of 30 M run of Net ball players is 5.01 and Korf ball Players is 5.29. It shows that Net ball Players are having the better speed compare to Korf ball Players. The Mean values of Standing Broad Jump is 2.24 of Korf Ball Players and 2.15 of Net ball Players. The values shows that the Korfball players are having better explosive strength compare to Net ball Players.

The Strength, Speed and Endurance are the important abilities for successful performance. The dominant ability is the one from which the sport requires higher contribution to achieve the high success in the sports and games. Most sports require peak performance in at least two abilities. The Relationships among strength, Speed, and endurance create crucial physical athletic qualities. Specific development of a biomotor ability must be methodical. A developed dominant ability directly or indirectly effects the other motor abilities. When an athlete develops strength he may experience a positive transfer to speed and endurance.

The results of the study shows that Korf Ball Players are having the better explosive strength and Net ball Players are having better speed. Speed and explosive power are important components of success in many sports. Hence Coaches in Korf Ball and Net ball must make their players to improve the fitness ability in order to play better korf ball and net ball without getting the fatigue. Physical Conditioning of Korf ball Players and Net ball Players are very important to achieve the high level of Performances.

#### **Conclusions:**

It is concluded that the Korf Ball Players are having better explosive Strength compare to Net ball Players. The Net ball Players is also having better speed compare to korf ball players.

#### **Recommendations:**

Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve the motor abilities of the Korf ball Players and Net ball Players.

#### **References:**

Wikipedia Korfball and Net ball  
www.topendsports

## **Effects of Suryanamaskar on selected Physiological Variables among Net Ball Players of Osmania University**

**Prof. Loka Bavoji Laxmikanth Rathod**  
**Head, Department of Physical Education**  
**Osmania University, Hyderabad, India**

### **Introduction:**

Yoga is a science of right living and it works when integrated in our daily life. It works on all aspects of the person: the physical, mental, emotional, psychic and spiritual. Yoga refers to traditional physical and mental disciplines that originated in India.

Suryanamaskar:

It is a very ancient tradition which has been in existence since the Vedic age. Surya Namaskara is an ancient system of Indian exercise. It includes the regular routine of prayer and worship. One of the means of honoring the sun is through the dynamic asana sequence Suryanamaskar (better known as Sun Salutation). It is considered as the best exercise for human body. Surya Namaskar consists of important *Yogasanas* and Pranayama. Each cycle of suryanamaskar is a sequence of certain 'asanas' performed along with 'pranayama'. The sequence of asanas is such that each asana is complementary to the next during Surya Namaskar, muscles of entire body experience stretch and pressure alternately and therefore it is said to give more benefits with less expenditure of time. The pranayama and thus its advantages are skillfully incorporated in Surya Namaskar.

**Purpose:** The purpose of the study was to find out the effects of Surya Namaskar on selected physiological variables such as heart rate and blood pressure among Male Net ball Players of Osmania University

### **Methodology:**

The sample for the present study consists of 30 Male Net Ball Players of Osmania University out of which 15 are experimental group and 15 are controlled group. Surya Namaskars 12 Repetitions were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training of Net ball for eight weeks. To assess the Physiological variables Average Heart Rate and Blood Pressure in Pre Test and Post were taken after the Practice Sessions.

#### **DEPENDENT VARIABLE**

Heart Rate

Blood Pressure

#### **INDEPENDENT VARIABLE**

Experimental Group -- Surya Namaskar training

Control Group -- No training

To measure the Heart Rate, Heart Rate Monitor were used. To measure the blood pressure Sphygmomanometer were used scores will be taken in Kcal, mmHg and b/m.

S.NO	VARIABLES	EQUIPMENT	UNIT OF MEASURE
1	Heart Rate	Heart Rate Monitor	b/m
3.	Blood Pressure	Sphygmomanometer	mmHg

### **Statistical Technique:**

The collected data were analyzed using 't' ratio to find out the effects of Surya Namaskar on selected physiological variables among Net Ball Players.

## Results of the Study:

TABLE I:COMPUTATION OF 't' RATIO OF HEART RATE

GROUP		MEAN	SD	't'
Control group	Pre	120.4	121.11	0.027
	Post	119.2	119.35	
Experimental Group	Pre	115.4	11.4	2.32
	Post	107.33	9.48	

Table 't' – ratio at 0.05 level of confidence for (2) and 28 (df) = 2.045

The average Heart Rate is reduced due to Surya Namaskaras by the Experimental Group from 115.4 to 107.33 and Control Group slightly reduced from 120.4 to 119.2

TABLE II:COMPUTATION OF 't' RATIO OF BLOOD PRESSURE:

GROUP		MEAN	SD	't'
Control group	Pre	97.53	2.05	0.0049
	Post	97.46	1.48	
Experimental Group	Pre	98	2.37	1.41
	Post	97	2.26	

Table 't' – ratio at 0.05 level of confidence for (2) and 28 (df) = 2.045

There is Not Significant difference in Pre Test to Post Test in Blood Pressure in Experimental and Control group.

## Conclusion:

There was a significant change on Average Heart Rate due to Suryanamaskar practice. There was no significant change on Blood pressure due to Suryanamaskar practice. Overall the Suryanamaskar practices were more effective on the significant changes on physiological variables among Male Net Ball Players. Overall the Suryanamaskar practices were more effective on the significant changes on physiological variables among female University Students.

## Recommendations:

The findings of this study proved that there was significant improvement due to Suryanamaskar on physiological variables among Net Ball Players. It is recommended that instead of giving traditional way of training method, it is advised to adapt a new kind of Yoga practice for all population for better living and better doing.

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## **A Study Of Endurance Ability Among Basket Ball Players And Hand Ball Players Of Gulbarga University in India**

**Dr.Pasodi Mallappa Sharanappa**  
**Director, Department of Physical Education**  
**Gulbarga University,Karnataka,India**  
**Dr.H.S.Jange**

**Chairman, Bos in Physical Education, Gulbarga University**

### **Abstract:**

Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. Endurance in basketball is essential for players looking to maintain stamina throughout an entire game as well as the entire season. Although endurance training can be performed off the basketball court, it is possible for you to increase stamina and endurance during practice through on-court conditioning drills. Endurance training drills range from on-court line sprints to off-court jogging routines. Handball is a professional sport in many countries. Endurance is very essential to play the game efficiently. Purpose: The Purpose of the present study to find out the Aerobic endurance among Male Basket Ball Players and Male Hand Ball Players of Gulbarga University in India. Methodology: The sample for the present study is Male Thirty Basket Ball and Male Thirty Hand Ball Players from various colleges of Gulbarga University in India. The data will be collected separately from Basket Ball and Hand Ball Players. The Subjects were made to Run 12 Min Run Cooper Test for endurance under the supervision of Technical officials of Athletics. Results: The Results of the study shows that Basket Ball Players are having the good endurance compare to Hand Ball players. Conclusions: It is concluded that Male Basket Ball Players are having good endurance compare to Male Hand Ball Players. Basket Ball requires a multitude of skills, high levels of concentration and top physical fitness. Aerobic Endurance is important for Basket ball players and hand players to play the game with maximum intensity without getting the fatigue. A Player is having good endurance in basket ball and hand ball will perform better in matches or in training.

**Key Words:** Aerobic endurance, Basket Ball, Hand Ball etc.

### **Introduction:**

Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. During aerobic (with oxygen) work, the body is working at a level that the demands for oxygen and fuel can be met by the body's intake. The only waste products formed are carbon-dioxide and water which are removed by sweating and breathing. Aerobic exercise is physical exercise of relatively low intensity and long duration, which depends primarily on the aerobic energy system. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy – generating process. Many types of exercise are aerobic, and by definition are performed at moderate levels of intensity for extended periods of time. Aerobic exercise comprises innumerable forms. In general, it is performed at a moderate level of intensity over a relatively long period of time. For example, running a long distance at a moderate pace is an aerobic exercise, but sprinting is not. Playing singles tennis, with near continuous motion, is generally considered aerobic activity, while golf or two person team tennis, with brief bursts of activity punctuated by more frequent breaks, may not be predominantly aerobic. Some sports are thus inherently "aerobic", while other aerobic exercises, such as fartlek training or aerobic dance classes, are designed specifically to improve aerobic capacity and fitness.

Basketball is a sport played by two teams of five players on a rectangular court. The objective is to shoot a ball through a hoop 18 inches (46 cm) in diameter and 10 feet (3.0 m) high mounted to a backboard at each end. Basketball is one of the world's most popular and widely viewed sports.

A team can score a field goal by shooting the ball through the basket during regular play. A field goal scores three points for the shooting team if the player shoots from behind the three-point line, and two

points if shot from in front of the line. The team with the most points at the end of the game wins, but additional time (overtime) is issued when the game ends in a draw. The ball can be advanced on the court by bouncing it while walking or running or throwing it to a team mate. It is a violation to lift or drag one's pivot foot without dribbling the ball, to carry it, or to hold the ball with both hands then resume dribbling.

As well as many techniques for shooting, passing, dribbling and rebounding, basketball teams generally have player positions and offensive and defensive structures (player positioning). Traditionally, the tallest and strongest members of a team are called a center or power forward, while slightly shorter and more agile players are called small forward, and the shortest players or those who possess the best ball handling skills are called a point guard or shooting guard.

Handball also known as team handball, Olympic handball, European team handball, European handball, or Borden ball is a team sport in which two teams of seven players each (six outfield players and a goalkeeper) pass a ball to throw it into the goal of the other team. A standard match consists of two periods of 30 minutes, and the team that scores more goals wins.

Modern handball is played on a court 40 by 20 meters (131 by 66 ft), with a goal in the center of each end. The goals are surrounded by a 6-meter zone where only the defending goalkeeper is allowed; the goals must be scored by throwing the ball from outside the zone or while "jumping" into it. The sport is usually played indoors, but outdoor variants exist in the forms of field handball and Czech handball (which were more common in the past) and beach handball (also called sandball). The game is quite fast and includes body contact, as the defenders try to stop the attackers from approaching the goal. Goals are scored quite frequently; usually both teams score at least 20 goals each, and it is not uncommon for both teams to score more than 30 goals.

The game was codified at the end of the 19th century in northern Europe, chiefly in Scandinavia and Germany. The modern set of rules was published in 1917 in Germany, and had several revisions since. The first international games were played under these rules for men in 1925 and for women in 1930. Men's handball was first played at the 1936 Summer Olympics in Berlin as outdoors, and the next time at the 1972 Summer Olympics in Munich as indoors, and has been an Olympics sport since. Women's team handball was added at the 1976 Summer Olympics.

#### **Method:**

The sample for the present study is Male Thirty Basket Ball and Male Thirty Hand Ball Players from various colleges of Gulbarga University in India. The data will be collected separately from Basket Ball and Hand Ball Players. The Subjects were made to Run 12 Min Run Cooper Test for endurance under the supervision of Technical officials of Athletics.

#### **Results and Discussion:**

The Table No.1 showing the Mean, S.D, Standard Error, t-ratio of Basket Ball Players and Hand Ball Players in Cooper Test.

Results of 12 min Cooper Test	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Basket Ball Players	30	3050.00	219.71	49.13	1.69	58.00	0.10
Hand Ball Players	30	2950.00	137.71	30.79			

The Basket Ball Players Mean Performance is 3050 Meters and the Hand Ball Players Mean performance is 2950 Meters. There is mean difference of 100 Meters between Basket Ball and Hand Ball Players. The Results of the study shows that Basket Ball Players are having the good endurance compare to Hand Ball players

**Conclusion:** Hence it is concluded that Basket Ball Players are good in aerobic endurance than Hand Ball Players.

**Recommendations:** Similar studies can be conducted on female players and other team game players and individual game players.

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## **An exploratory study therapeutic exercises and ultrasound technique on the osteoarthritis**

**Taha Yahya Dahawi, Yemen**  
**Former Foreign Student, University College of Physical Education, Osmania University**  
**Hyderabad**

### **Introduction**

Osteoarthritis (OA) is already one of the ten most disabling diseases in the developed countries. It is estimated world widely that 9.6 % of men and 18.0 % of women aged over 60 years have symptomatic osteoarthritis. OA is a chronic disorder characterized by irreversible changes in the joint structure developing with advancing age. Both diseases lead to the destruction of many parts of the motor system, cause pain, weakness, and damage of ligaments, muscles, bones, and articular cartilage. The etiology of the diseases remains unknown. Most of osteoarthritis patients in different countries are treated directly by joint replacement that needs a surgical operation. So I have chosen this research do to relief pain and do to increase range of motion on for increasingly This study is an attempt to find out some other ways for reducing or relieving pain among osteoarthritis patients by using Ultrasound, therapeutic exercise

### **Methodology**

The study goes through pre-test and post-test procedures.

The sample for a treatment to owaisi hospital & research center, Hyderabad who are about 10 individuals subjects who are have osteoarthritis I used some materials to measure pain and functional disability like VAS & KUJALA scales , the range of motion the researcher has used Goniometry measures angles knee joint , finally the researcher used the manual muscles test to measure muscles strength. each physical variable there were two times measurement : pre-test and post-test

### **Results**

The pain

The pain of the individual subjects collected before the participation is averagely about 6.9 by VAS.

The data collected from the subjects after the program shows that the average about 3.7 by VAS. the variation the pain among the subjects

The average value of the pain by kujala scale before the program (pre test result) is 28.3 whereas the (post test result) represents about 36.7 according to the measurements that took before and after the program.

Note: (maximum score is 100 and lower scores indicate greater pain and disability)

The range of motion

The average value of the pre test of the subjects is about 92.2, this numerical value shows that the Subjects. the average value of the post test about 103.2 as a result of this the variation of the ROM is about 11 the highest value of the pre test the flexion 123 scored during the data collection and extension 120 and the highest value of the post test the flexion 130 scored during the data collection and extension 122

The muscle strength:

The average value of the pre test of the subjects is about 3.6 this numerical value shows that the subjects. the average value of the post test about 4.6 as a result of this the variation of the muscle strength is about 1 the highest value of the pre test the 5- scored during the data collection and the highest value of the post test the 5 scored during the data collection .

### **Conclusion**

Osteoarthritis, also known as degenerative arthritis degenerative joint disease, OA, or osteoarthritis, is a form of arthritis caused by inflammation, breakdown, and the eventual loss of cartilage in the joints - the cartilage wears down over time.

Osteoarthritis is more common among females than males, especially after the age of 50 years. Most commonly, it develops in people aged over 40. Younger people may also be affected; usually after an injury or as a result of another joint condition.

Some people say that osteoarthritis is an inevitable part of ageing.

This is untrue. There are people well into their nineties who have no clinical or functional signs of the disease.

Apply the ultrasound on the effected joint we must select pulsed ultrasound therapy is a safe and effective treatment modality in patients with knee OA. Therapeutic exercises do to relieve the symptoms of arthritis and protect joints from further damage.

### **Recommendations**

Exercise also may to help maintain normal joint movement Increase muscle flexibility and strength help maintain weight to reduce pressure on joints help keep bone and cartilage tissue strong and healthy.

## How to improve the quality of sports competition for students at The Da Nang University

Nguyen Xuan Hien<sup>1</sup>, Vo Dinh Hop<sup>1</sup>, Nguyen Thi Hang Phuong<sup>2</sup>

<sup>1</sup>The Faculty of Physical Education- The University of Danang

<sup>2</sup>The Department of Educational Psychology- University of Education- The University of Danang

Email: nxhien@ac.udn.vn

### Abstract

Sport training is one of the most effective ways to improve a man's health. Actually, Da Nang University has been paying more attention to improve the quality of sports education and competition in order to help students to be more interested in sport subjects and reduce the risk of physical injuries. With the assistance of questionnaires and personal interviews, the researchers conducted research on 164 students and 24 trainers who have suggested some methods to improve the quality of sports competition such as increasing the training time, employing technical experts, suitable diets and life style, limbs and head protection gears, punishments to those who injure others.

Keywords: Sport, physical activity, physical education. Sport injuries, questionnaires

### Introduction

The healthy ones have hundreds of wishes why the unhealthy only have one: health (Organization, 2000). Health is the most important factor in life and playing sports is one of the most necessary things to do to improve human's health (Haskell et al., 2007). Universities in Vietnam have been focusing on sports education recently so that students can improve their health and life as well.

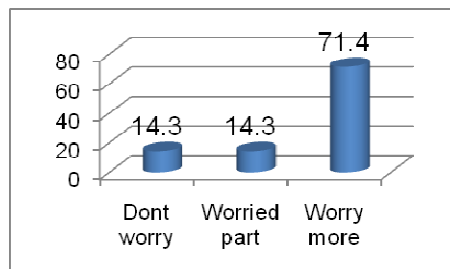
### Research objects and research methods

Objects: a survey was conducted with the participation of 164 students and 24 trainers from different sports teams of The University of Danang. The respondents did the questionnaire voluntarily, which made their responses clear and objective.

Research methods: researching documents; questionnaires; using test Zung to measure students' anxiety (during sports competitions)

### Results and discussion

Students' anxiety when competing:



*Figure 1: Anxiety of student*

The result from anxiety measurement test Zung shows that 71.4% of students feel really anxiety when competing in sports. The portions of those who have no anxiety and those who are only partly anxious are the same (14.3%). From these statistics, it can be concluded that most students have negative

mental status before entering a sport tournament. 93.2% of the students who participate in this research feel that they are anxious about the upcoming competitions.

The other 6.8% have no anxiety because they know that they can't have any achievement. Basing on the question about the relation between anxiety and competition results, the students think that negative emotions will affect the results when competing.

### 3.2. Signs of anxiety (physiology, behaviors, awareness, emotions) when competing in sports.

Results about physiologic signs are the most clearly with the average point of 2.31/4, followed by the signs of awareness, behaviors and emotions. Negative physiologic signs include headaches, exhaust (Average point= 2.29), shaking limbs (AP= 2.09), fast heart beat (AP=2.19), insomnia (AP=2.12); low appetite (AP=1.89). Awareness signs include disappointment from what happened (AP=2.11), thinking too much about the past (AP=1.86), concentration difficulty, being pessimistic about the future, imagining bad things, bad memory, academic performance decline...

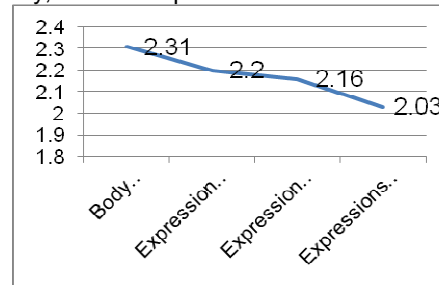


Figure 2: Signs of anxiety (physiology, behaviors, awareness, emotions) of student  
Signs of pressure during sports competition.

The results of the chart above show that the most popular cause of pressure to the students is the responsibility when competing for their schools or classes with the AP of 2.58. After that is the idea of achieving the best position with the AP of 2.39 and feeling of sadness when achieving nothing since sports competition means something in life (AP=2.26). Because of these negative feelings, the students has no expectation for a good result in a competition (AP= 2.35), no interest in training (AP= 2.61) and no willingness to spend time due to having to study a lot at the schools (AP=2.15).

N	Statements	Mean	Standard Deviation
	The obligation to have achievement	1,58	,410
	Responsibility toward the schools or classes	2,58	,511
	Proving oneself	1,18	,328
	Good results mean pride	2,13	,321
	Embarrassment due to having no good performance	2,21	,378
	Having to play good for the sake of honor	1,90	,271
	Participation for recognition (certificates, money...)	2,19	,374
	Having more friends through competition	1,72	,431
	Job opportunity	1,63	,452
	Luck in love	1,68	,472
	Participating in sports activities is meaningful	2,26	,483

	The best position	2,39	,438
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Table 1: Signs of pressure during sport competition

Students' concerns

N	Concerns	Mean	Standard Deviation
	Having no expectation for good results even before competing	2.35	.357
	No interest in training	2.61	.435
	Feeling tense when thinking about tournaments	2.15	.362
	Being afraid of humiliation	1.93	.361
	Time consumption due to training and study.	2.15	.328
	No satisfaction with the schools' support	2.18	.352
	Unsuitable evaluation from schools and friends	2.36	4.21

**Table 2: Students' concern**

**Methods to improve sports competition for students**

The researchers were able to collect the students and trainers' opinions about methods to improve sports competition for students. These methods include: more training for athletes, comfortable feelings before entering a competition, guidance from trainers, protection gears, financial aids for students.

	Contents	AP	
		Students	Trainers
	More training for athletes	2.93	3.04
	Good mental preparation before a competition	2.98	3.08
	Guidance from technical experts	2.86	2.91
	More financial aids from schools for their athletes	3.07	3.04
	Better recognition from schools (articles on newspapers or schools' websites)	3.00	2.87
	Sponsors	3.12	3.08
	More care for	2.79	2.92

	athletes' health (diets, head and limbs protection gears)		
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**Table 3: Methods for competition quality improvement**

There are differences in the students and trainers' opinions regarding the methods. The trainer think that students need more training (AP=3.04), more guidance from trainers (AP=2.91) as well as other forms of protection (AP=2.92). The students, on the other hand, are more interested in methods such as more financial aids (AP=3.06) and more sponsors (AP=3.12).

There is a wide variety of methods from the trainers while the students' suggestions only focus on their financial aids when entering sports tournaments.

### Conclusion

The results when researching about factors regarding quality improvement of sports competition show that the students' anxiety rate is 71.4%.

Signs of anxiety show the most through biological means such as insomnia, headaches, exhaust, tension, shaking limbs

Signs of pressure include feeling tense when having no achievement in a competition due to the need for a certificate when entering one... because of these concerns, students often feel tense, think about bad results (no achievement when competing, injuries, humiliation...) and have no satisfaction with the schools' financial support.

From the above results, we were able to come up with the below methods to improve the quality of sports competition for students:

For students: more individual financial support when entering a tournament as well as more forms of recognition certificates, acknowledgement, articles as good examples in competition...), more suitable training, more protection gears as well as other forms of health protection, more guidance from experts.

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## **A Comparative Study of Explosive Strength among Cricketers and Foot Ball Players of Andhra University**

**Dr.N.Vijay Mohan**  
**Associate Professor**  
**Department of Physical Education**  
**Andhra University, Visakhapatnam, India**

### **Abstract:**

The Significance of the present study to find out the Explosive Strength among Cricketers and Foot Ball Players of Andhra University. The objective of this study to determine the Explosive Strength in the legs of Foot Ball Players and Cricketers. The sample for the present study consists of 30 Male Cricketers and 30 Male Foot Ball Players of Andhra University. To assess the Explosive Strength Standing Broad Jump Test Were conducted among Cricketers and Foot Ball Players . It was found that Foot Ball Players are having good explosive Strength in legs compare to Cricketers. Explosive Strength plays major role in producing the kicking the foot ball among the foot ballers. This Study is helpful to Coaches to prepare the Cricketers and foot ball players to increase the explosive power ability among the legs .

Key Words: Explosive Strength, Cricket, foot ball etc.

### **Introduction:**

Cricket is a bat-and-ball game played between two teams of 11 players each on a field at the centre of which is a rectangular 22-yard long pitch. The game is played by 120 million players in many countries, making it the world's second most popular sport. Each team takes its turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat away from the fielders so he can run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, or a specified number of over's of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat.

In professional cricket the length of a game ranges from 20 over's per side to Test cricket played over five days. The Cricket are maintained by the International Cricket Council (ICC) and the Marylebone Cricket Club (MCC) with additional Standard Playing Conditions for Test matches and One Day Internationals. Cricket was first played in southern England in or before the 16th century. By the end of the 18th century, it had developed to be the national sport of England. The expansion of the British Empire led to cricket being played overseas and by the mid-19th century the first international match was held. ICC, the game's governing body, has 10 full members. The game is most popular in Australasia, England, the Indian subcontinent, the West Indies and Southern Africa.

Football refers to a number of sports that involve, to varying degrees, kicking a ball with the foot to score a goal. Unqualified, the word football is understood to refer to whichever form of football is the most popular in the regional context in which the word appears: association football known as soccer in some countries.

The significance of this study is to find out the explosive Strength among Cricketers and Foot Ball players of Andhra University. This Study will bring true facts of explosive Strength motor quality exists between Foot ball players and Cricketers.

### **Methodology:**

The sample for the present study consists of 30 Male Cricketers and 30 Male Foot ball players of Andhra University. To assess the Explosive Strength the Standing Broad jump test were conducted on Cricketers and Foot ball Players.

**Standing Broad Jump:**

The Standing long jump, also called the Broad Jump, is a common and easy to administer test of explosive leg power.

purpose: to measure the explosive power of the legs

equipment required: tape measure to measure distance jumped, non-slip floor for takeoff, and soft landing area preferred. Commercial Long Jump Landing Mats are also available. The take off line should be clearly marked.

procedure: The athlete stands behind a line marked on the ground with feet slightly apart. A two foot take-off and landing is used, with swinging of the arms and bending of the knees to provide forward drive. The subject attempts to jump as far as possible, landing on both feet without falling backwards. Three attempts are allowed.

scoring: The measurement is taken from take-off line to the nearest point of contact on the landing (back of the heels). Record the longest distance jumped, the best of three attempts. The table below gives a rating scale for the standing long jump test for adults, based on personal experiences. See some athlete results for the long jump test. You can also use this calculator to convert cm to feet and inches.

**Results :**

This study shows that Foot Ball Players are having better Explosive Strength compare to The Cricketers.

Table I Showing the Mean values and Independent Samples Test of Standing Broad Jump between Foot Ball Players and Cricketers

Variables	Group	Mean	SD	t	P – Value
Standing Broad Jump	Foot Ball Players	2.64	0.406	1.35	0.000
	Cricketers	2.56	0.418		

\*Significant at 0.05 level

In Table –I the Mean Values of Standing Broad Jump of Football Players is 2.64 and Cricketers is 2.56 The Results of the Study shows that the Foot ballers are having better Explosive Strength compare to Cricketers.

**Conclusion:**

- 1.It is concluded that Foot ball Players are having better Explosive Strength than Cricketers.
- 2.It is concluded that Foot ball Players requires more Explosive Strength to hit the ball and play fast in foot ball..
- 3.Strength exercises plays a major role for improvement of Explosive Strength .
4. It is concluded that Explosive Strength is very important for both players and Cricketers to excel in the performance.

**Recommendations:**

1. Similar studies can be conducted on other Sports and Games and also on female sports persons.

**References:**

Wikipedia – Cricket and Foot ball  
www.topendsports.com  
<http://www.livestrong.com/>

## **Effects Of Yoga On Diabetes**

**Dr. Vishwambhar Jadhav**  
**Asst. Professor, Department Of Physical Education**  
**University Of Mumbai**  
**Vinod Yadav M.P.ED (Part – I)**  
**N.S.N.I.S (SAI)(Health And Fitness)**

### **Abstract**

The science of yoga is an ancient one. It is a rich heritage of our culture. Several older books make a mention of the usefulness of yoga in the treatment of certain diseases and preservation of health in normal individuals. The effect of yogic practices on the management of diabetes has not been investigated well. We carried out well designed studies in normal individuals and those with diabetes to assess the role of yogic practices on glycaemia control, insulin kinetics, body composition exercise tolerance and various co morbidities like hypertension and dyslipidemia. These studies were both short term and long term. These studies have confirmed the useful role of yoga in the control of diabetes mellitus. Fasting and postprandial blood glucose levels came down significantly. Good glycaemia status can be maintained for long periods of time. There was a lowering of drug requirement and the incidence of acute complications like infection and ketosis was significantly reduced. There were significant changes in the insulin kinetics and those of counter-regulatory hormones like cortisol. There was a decrease in free fatty acids. There was an increase in lean body mass and decrease in body fat percentage. The number of insulin receptors was also increased. There was an improvement in insulin sensitivity and decline in insulin resistance. All these suggest that yogic practices have a role even in the prevention of diabetes. There is a beneficial effect on the co-morbid conditions like hypertension and dyslipidemia

Key words: co morbidities, receptors, co-morbid, hypertension, dyslipidemia.

### **Introduction:**

Many studies have reported the beneficial effect of the practice of yoga on diabetes. Some studies have mentioned up to 65 percent beneficial effect of yogic therapy for diabetes. K.N. Udupa has even mentioned 5 cases of juvenile diabetes who were completely controlled by yogic treatment. All of these studies have emphasized the possible mechanism of the yogic practices as:

1. Direct influence on pancreatic secretion by rejuvenation of the pancreatic cells, through alternate abdominal contractions and relaxation, during asanas (yogic postures which produce relaxation) and breathing exercises.

2. Reduction in blood sugar due to muscular exercise involved in the asanas.

S.A.A. Ramaiah's study conducted in Washington, D.C. compared the effects of walking, treadmill, static cycling, Amarantha Kokkuasana (Sitting crane), Nindra Kokkuasana (Standing crane) and Vil asana (Bow pose, rocking, especially side to side). The most effective were found to be the latter. It was concluded that the direct stimulation of the pancreas by the postures rejuvenated its capacity to produce insulin.

Several studies have focused upon why the practice of yoga has been more successful than other forms of exercise. M.V. Bhole and K.N. Udupa have measured the effects of yoga on mental stresses. Muhammad) has shown the differences between physical exercises and yoga. He has reported how doing the yogic practices without exertion has more benefits.

The mechanism of yogic practices and other exercises is very different. Yogic practices are supposed to change one's attitude towards the situations of life, by developing mental relaxation and balance.

One study focused on the practice of the postures in a slow, smooth and non-exerting manner. The postures were maintained comfortably and easily for a length of time and the patients were taught to focus on breathing or on some infinitely vast object like the sky or the ocean while doing the yoga posture. Two thirds of the patients were significantly benefited by this treatment. The others also showed improvement.

A number of institutions in India offer treatment programs for diabetes. Participants generally stay for between two to five weeks, and follow a program of instruction and practice of yoga asanas for at least an hour in the morning and the evening, dietary control, meditation and breathing exercises. They generally become subjects in ongoing research projects.

### **Recommendations Regarding The Practice Of Yoga By Diabetics**

The patient must learn to control and his or her self of diabetes in a holistic manner, at all levels of your being: physical, emotional, mental, intellectual and spiritual, recognizing the effects of stress, emotional imbalance, and dietary and living habits on the disease condition.

Before beginning a program, measure one's exercise tolerance. Start with simple Movements and positions before progressing gradually to complicated postures.

Throughout the program, monitor glucose levels and under the supervision of a physician, and take appropriate medicinal dosages as and when required. After several weeks one may be able to reduce such dosages.

Practice in the morning and the evening for 40 to 60 minutes the recommended series of postures according to one's capacity. Practice before meals, but after consuming glucid liquids.

Avoid exertion, that is heavy muscular activity. Perform the movements slowly and smoothly, stretching the limbs and joints, and gently compressing the abdomen, without straining. Maintain the postures for a comfortable length of time. The maintenance period of postures should be increased gradually from 5 seconds to one minute, or even longer depending upon the posture and capacity of the patient.

Focus on the breath during the maintenance period of the posture, with the eyes closed or focused on one point, as a means of learning to focus the mind and to manage stress and tension in the body.

Perform the Shavasana, or complete peace relax pose on the back, systematically relaxing all of the parts of the body, at the end of the session, or after completing several postures, if one begins to feel fatigued.

The following postures have been found to be effective in the control and cure of diabetes (Sanskrit names; the English and Tamil names are in parentheses): Dhanurasana (Bow pose, Vilasana), Paschimottanasana (Sitting crane, Amaratha kokkuasana), Padangusthasana (Standing crane, Nindra kokkuasana), Bhujangasana (Serpent pose, Paambuasana), Sarvangasana (Shoulder stand), Ardha-matsyendrasana (Spinal twist), Halasana (Plough pose, Kalapoy asana), Yoga mudrasana (Yogic Symbol pose), Supta Vajrasana (Sitting pose of Firmness), Chakrasana (Wheel pose), Shalabhasana (Grasshopper pose, Vittelasana).

The practice of Udiyana bandha, or the abdominal squeeze has also been found to be useful.

Regulate the diet throughout the program. Avoid simple sugars such as white sugar, honey, glucose and sweets, and eat complex carbohydrates such as wheat, oatmeal, buckwheat, corn, brown rice and beans. Avoid processed food and eat foods with lots of fibre and nutrients.

Obese patients can start with different asanas, cleansing processes, bhastrika pranayama and relaxation. Lean and thin patients should start with relaxation and pranayama, and practice in a relaxed manner.

Meditation practices have been shown to help the endocrine glands through relaxation of the sympathetic nervous system.

**Conclusion:**

Western medical research has focused upon diabetes as only a physical disorder, requiring only physical modalities of intervention. It has been able to confirm that regular physical exercise does have some beneficial effects in diabetics of both types, and that in those who are genetically predisposed to type 2, it could prevent its development. Western

Studies have recommended exercise of moderate intensity, as a means to adopt a regular diet and insulin dosage, or to control body weight and improve circulation.

Research in India has recognized it as a psychosomatic disorder with causative factors being sedentary habits, physical, emotional and mental stress. Many studies there have confirmed that the practice of the postures can rejuvenate the insulin producing cells in the pancreas of diabetics of both types, and that doing the postures in a relaxed manner, without exertion, yogic meditation and breathing help most patients to control the causes of diabetes.

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## **Introducing of Ethiopian Traditional Game “Shuka or Shakey”**

**Amare Tigabu (MSc in physical education, BSc in sport and physical education)  
Lecturer at Samara University  
SAMARA - ETHIOPIAN**

### **Introduction of the Game**

Shuka is one of Ethiopian traditional game mostly, being practiced in northern and east-north part of the country especially, in Tigray, Amhara and Afar region. Because of high physical challenging nature we can categorize this game as an active game. Shuka game is mainly practiced in a limited but unmeasured open play ground. During the game defender team groups must distribute at the ground according to their advantages economically to catch the ball that hit from the striker team. The number of players can recommend being 3-7 players in each team. Winning the game in Shuka game is staying for a long time as striker position.

#### **General Rules and Regulations of the Shuka**

##### **Basic materials, equipments and facility**

80-100 cm long spherical shape with 15-20 mm thickness stick to kick the ball

Soft and light small 35-40 mm diameter ball that can be handle easily with one hand to throw easily.

Traditionally the ball prepared from piece of clothes.

Leveled, open, wide play ground is preferable. The play ground will preferred to be 10m width at the kicking area at the other end should be like Javelin, Discus or shot put field and the length should be greater than 70m because sometimes the kicked ball can go more distance.

The distance between the kicking line and the destination point is limited by two teams' agreement before identifying the beginner team of the game by draw. But the destination point distance is should be half of the play ground length.

Only one player from the striker group can run to the destination point while his team mate ball kicker kicking the ball.

If the runner is fast and agile he can go and come back by one kick but not he will wait another kick to return to starting point.

The ball holding or defending team group can attack the opponents player by the ball is only in area between starting and destination point.

The ball kicking is mostly 3 times but it depends on team agreement they can extend up to 5 trials.

If the ball kicker lost all trials or no one go and come back from the destination point that group will be beat and exchange from striker to defender team.

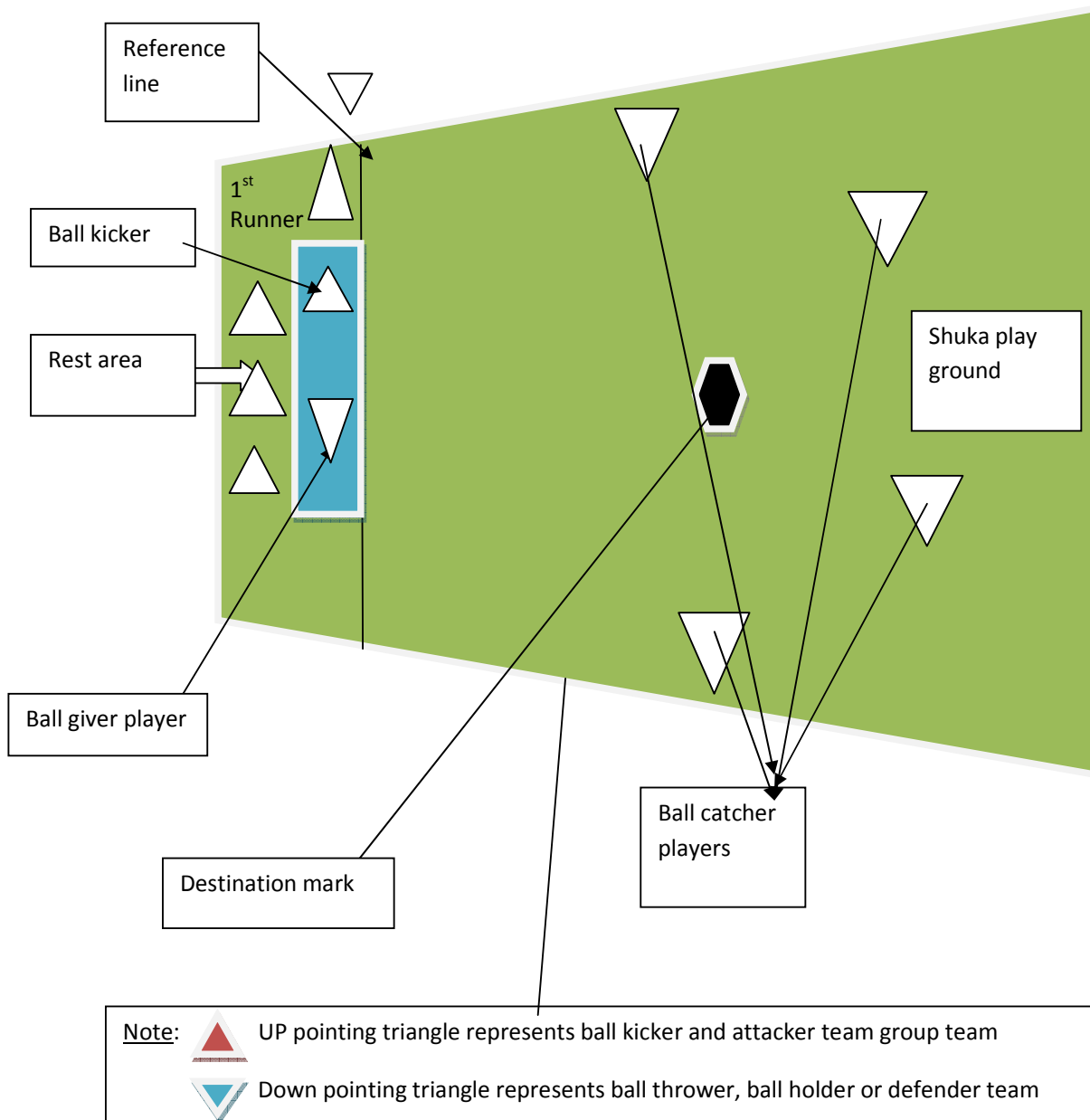
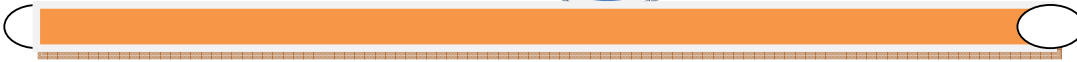
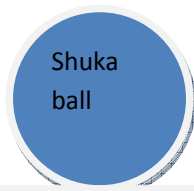
Kicking opponent's team member with ball the space between the destination and starting point is the second option to win the game or changing position from defender to striker.

Ball holder team has full right any opponent players that he found the space between the destination and starting point.

While the striker kicking the ball his team members should not teach the line that marked as starting point but they can sit or stand any where behind that line.

More than one runner in same direction is forbidden from the striker group while the ball kicker kicking the ball.

### **Materials and play grounds of Shuka Game**



**How to play Shuka Game**

First of all the players prepare or arrange stick and ball, select comfort play ground then form two groups by two captain or team leader members. Keep the destination point after they limit the play ground before beginning playing the game. Bring prepared ball and stick then after toss coin or implement other probability options to determine the game starter and ball holder team. Team captains should decide the number of trials of kicking the ball and announce for the team members. Then the game will begin formally.

In this game no specific point scoring but the winner will identify how much rounds they beat the game or the more round beater of the game. One beat lead the team to continuing as striker without gap.

To continue from the first round to next round means when the striker team kicking the ball at least one runner should complete or go and come back from destination point without kicking with the ball that thrown by opponents team. During this time the striker team has one reserve player (kicker) even he finished his allowed trial with kicking or they missed all trials. After the first kicker finished his trial the first runner he complete his run without beating by opponent team ball will continue the game. The game routine is like this if they do not miss their trial.

If they missed their trials without minimum one team member complete the running safely, the game will change to other team. They will be ball giver or defender instead of striker. So Shuka game is very challenging because each team has high interest to be striker team all time than of ball giver or defender. It is also need high speed, agility, reaction time and other skills from each team members to protect themselves from immediately thrown ball from any opponent members.

**Conclusion**

Here the researcher tried to clarify this physical challenging traditional game as much as possible and will try to organize and develop in the better way. Shuka game has its own materials, facility like ball, stick and play ground. Some rules and regulations are sometimes flexible like trials to kick the ball, number of players and others. Shuka game is a team game and that must involve more than two and above equal number players in each team.

## **Nutrition for Training and Performance – An Overview**

**Mrs.S.Bhavani Rajeswari Lecturer, R.C.P.E Proddatur**  
**Dr.Palle Bhaskar Reddy Lecturer, R.C.P.E Proddatur**

### **Introduction**

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.

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 realizing your best. Eating well is specific to you and your individual nutritional needs, as well as your training and competition schedule. Basing on reviews the paper provides an up-to-the-minute coverage of current concepts in sports nutrition.

A key priority for athletes is to establish a well-chosen training diet that can be easily manipulated when special situations emerge (for example, changes to training load, changing body composition goals, or special competition needs). A good base 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.

### **Carbohydrates**

Carbohydrate remains a key nutrient for athletes. It provides the major fuel for exercise, especially during prolonged continuous exercise or high-intensity work. The body has a limited capacity to store carbohydrate (as glycogen in the muscles and liver) and stores must be replenished regularly to support training. Low body stores of carbohydrate can result in fatigue, impairment of performance at training or during competition, and a negative impact on the immune system. Carbohydrate requirements are largely influenced by training loads (frequency, duration and intensity of training sessions) and the demands of competition. Given this, daily carbohydrate intake should reflect daily exercise levels. On high activity days, carbohydrate intake needs to be increased to facilitate optimal exercise performance and promote recovery between exercise sessions. Conversely, on low activity days, carbohydrate intake (particularly from nutrient-poor sources such as cordial, soft drink and cakes etc.) may need to be reduced to reflect a decreased training load.

Carbohydrates are needed to provide energy during exercise. Carbohydrates are stored mostly in the muscles and liver. Complex carbohydrates are found in foods such as pasta, bagels, whole grain breads, and rice. They provide energy, fiber, vitamins, and minerals. These foods are low in fat. Simple, such as soft drinks, jams and jellies, and candy provide a lot of calories, but they do not provide vitamins, minerals, and other nutrients. What matters most is the total amount of carbohydrates you eat each day. A little more than half of your calories should come from carbohydrates.

You need to eat carbohydrates before you exercise if you will be exercising for more than 1 hour. You might have a glass of fruit juice, a cup of yogurt, or an English muffin with jelly.

You also need carbohydrates during exercise. You can satisfy this need by having:

Five to 10 ounces of a sports drink every 15 to 20 minutes

Two to three handfuls of pretzels

One-half to two-thirds cup of low-fat granola

After exercise, you need to eat carbohydrates to rebuild the stores of energy in your muscles. Within 30 minutes, eat a granola bar, small bagel with jelly, or sweetened cereal. Or drink 12 to 16 ounces of an energy drink or fruit punch. People who exercise or train for more than 90 minutes should eat or drink more carbohydrates, possibly with protein, 2 hours later. Try a sports bar, trail mix with nuts, or yogurt and granola.

### **Protein**

Protein is important for muscle growth and to repair body tissues. Protein can also be used by the body for energy, but only after carbohydrate stores have been used up.

But it is also a myth that a high-protein diet will promote muscle growth.

Only strength training and exercise will change muscle.

Athletes, even body builders, need only a little bit of extra protein to support muscle growth. Athletes can easily meet this increased need by eating more total calories (eating more food).

Most Americans already eat almost twice as much protein as they need for muscle development. Too much protein in the diet:

- Will be stored as increased body fat

- Can increase the chance for dehydration (not enough fluids in the body)

- Can lead to loss of calcium

- Can put an added burden on the kidneys

Often, people who focus on eating extra protein may not get enough carbohydrates, which are the most important source of energy during exercise. Amino acid supplements and eating a lot of protein are not recommended.

### **Water And Other Fluids**

Water is the most important, yet overlooked, nutrient for athletes. Water and fluids are essential to keep the body hydrated and at the right temperature. Your body can lose several liters of sweat in an hour of vigorous exercise. Clear urine is a good sign that you have fully rehydrated. Some ideas for keeping enough fluids in the body include:

- Drink about 16 ounces (2 cups) of water 2 hours before a workout. It is important to start exercising with enough water in your body.

- Continue to sip water during and after you exercise -- about 1/2 to 1 cup of fluid every 15 to 20 minutes. Water is best for the first hour. Switching to an energy drink after the first hour will help you get enough electrolytes.

- Drink even when you no longer feel thirsty.

- Offer children water often during sports activities. They do not respond to thirst as well as adults.

- Teenagers and adults should replace any body weight lost during exercise with an equal amount of fluids. For every pound you lose while exercising, you should drink 24 ounces or 3 cups of fluid within the next 6 hours.

### **Conclusion**

The day-to-day diet and eating habits of individuals who frequently train or participate in sport is very important in terms of performance level and progression. Scientific developments and new discoveries about how different food types work within the body mean those athletes can now tailor their diets to help them excel in their particular sport. Whether you are a professional or amateur athlete, if you wish to optimize your performance level and guarantee continuous improvement, a healthy and well-planned diet could help you to do so.

## **Intelligence Testing And Its Application**

**Dr. Satinder Paul**  
**Assistant Professor,**  
**Akal College of Physical Education ,**  
**Mastuana Sahib, Sangrur, Punjab (India).**

### **Introduction:**

Intelligence tests are psychological tests that are designed to measure a variety of mental functions, such as reasoning, comprehension, and judgment. The goal of intelligence tests is to obtain an idea of the person's intellectual potential. The tests center around a set of stimuli designed to yield a score based on the test maker's model of what makes up intelligence. Intelligence tests are often given as a part of a battery of tests. There are many different types of intelligence tests and they all do not measure the same abilities. Although the tests often have aspects that are related with each other, one should not expect that scores from one intelligence test, that measures a single factor, will be similar to scores on another intelligence test, that measures a variety of factors. Also, when determining whether or not to use an intelligence test, a person should make sure that the test has been adequately developed and has solid research to show its reliability and validity. Additionally, psychometric testing requires a clinically trained examiner. Therefore, the test should only be administered and interpreted by a trained professional. It emerges from the Latin roots, *inter* (among, between) and *legere* (to choose, select) it means the capacity to make adaptive choice. Intelligence is the capacity to acquire and manipulate knowledge. Intelligence is associated with academic success, advancement on the job and appropriate social behavior. Intelligence as a general ability to learn (Alfred Binet). Intelligence is the ability to carry on abstract thinking (Lewis Terman). Wechsler's definition is the most practical and widely accepted – Intelligence as the capacity to understand the world and resource fullness to cope with its challenges.

### **Psychologist View On Intelligence**

Before development of first IQ test by Binet and Simon, efforts were underway to define intelligence. However, in the beginning of 1900s a British psychologist Charles Spearman made an observation that all tests of mental ability are positively connected. Spearman drew the conclusion that individuals who score high in any mental test, score high in all others, and vice versa. Spearman argued that if all mental tests are correlated, there must be a common factor producing the positive correlation.

In 1904 Spearman published his findings with statistics to show that the positive correlations among mental tests are due to a common underlying factor. His method developed into a technique known as factor analysis. It is possible to identify group of tests that measure a common ability by using factor analysis. Spearman proposed that two factors could account for individual differences in scores on mental tests. First factor is represented as 'g'. The g is considered as the cause of all intellectual tasks and abilities. The g factor stands for what all mental tests had in common. Scores on all of the tests were positively correlated as all of the tests illustrate on g. Spearman believed that g, scientifically defined was in fact what scientists should represent by intelligence. In the 1920s he recommended that g measure a mental power. Others explored g and hypothesized that it is related to neural efficiency and speed, or some other fundamental properties of the mind.

Spearman identified the second factor as the specific factor, or s. The specific factor is related to whatever exceptional abilities a specific test requires and it differs from test to test. Spearman and his followers gave more importance to the general intelligence than the specific factor.

The collection of cognitive data and improvement in analytical techniques has made factor 'g' more important. A series of factors with g at its apex and group factors at successive lower levels is thought to be the most trusted model of cognitive ability. Other models have also been put forward. But they have merely served anything positive except intensifying controversy over factor 'g'.

American Psychologist Louis Thurstone (1938) analyzed data from various tests of individuals abilities and identified seven basic factors which he called “Primary Mental Abilities” (PMA) included: -

Verbal comprehension

Word Fluency

Perceptual speed

Memory

Numerical ability

Spatial ability

Reasoning etc.

So Thrustone assembled a battery of test to measure these abilities.

#### **Measurement Of Intelligence:**

Intelligence tests are designed to measure the general intelligence or certain specific abilities of human beings. These tests are administered to individuals and groups therefore they are called as individual test and group test. Intelligence tests further classified as verbal tests, non verbal tests and performance tests etc.

##### **Verbal Tests:**

The verbal tests requires the skill in using language. These are also called paper – pencil tests. The verbal tests are designed to measure the general intelligence of some special abilities. Ex – AGCT is verbal test widely used during the World War II. The SBIS was found to be inadequate for adults. David Wechsler developed Adults Intelligence Scale in 1939, it was revised and published in 1955. The WAIS consists of eleven sub tests, six of them are verbal tests and five of them are performance tests.

The verbal tests are:

Information

Comprehension

Arithmetic

Similarities

Digital span

Vocabulary

##### **Non Verbal Tests:**

These tests do not involve word and can be used for unschooled and culturally derived group. To reduce dependency on verbal skills, Ex-Draw, A- Man by Goodenough (1926) and revised by Haries in 1963 it measures the ability to draw human figure in correct proportion with all the details.

Non verbal tests were developed for those who cannot take verbal test. Ex. J.C. Ravan developed; Standard Progressive Matrices, Advanced Progressive Matrices and Colour Progressive Matrices.

##### **Performance Tests:**

The Pinter – Patterson Performance Scale reveals the general performance ability of the child. The Cornell Coxe Performance Ability Scale was developed in 1934. Kohs Block Design Test – In this test ‘S’ has to match a series of designs with block of different colors. Starting with simple to complex designs, movement of block and time taken is measured.

Individual performance test ‘S’ has to pass the blocks in the box and match a series of designs as per given figure.

The performance tests are:

Digit symbol,Picture completion,Block Design ,Picture Arrangement

Object Assembly etc.

#### **Classification of IQ:-**

IQ	Category	Percentage in Population
140 and above	Very Superior	1.5
120-139	Superior	11
110-119	High Average	18
90-109	Average	48
80-89	Below Average	14
70-79	Border Line	05
50-69	Moron	1.5
25-49	Imbecile	1
Below	Idiot	-

**Application Of Intelligence Tests:-**

In Diagnosis: Intelligent test helps as an aid in diagnosing student's difficulties and problems in learning.

In Assessment: It helps the teacher to find out whether the particular student is working to his potentialities or not.

In Improvement: It helps the teacher whether the achievement of the students is due to lack of capacity or due to something else.

In Guidance: These tests are useful in educational and vocational guidance.

In Measurement: To measure individual's abilities, strength and weakness.

In Selection: On the basis of Intelligence score selecting men to various jobs and placing them at different levels may be done.

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## **Efficacy Of Speed Training Programme On Kho Kho Players In Running Performance**

N. Rama Chandra Rao <sup>1</sup> Dr.G.P.Raju<sup>2</sup>

<sup>1</sup>. N. Rama Chandra Rao, Asst. Prof. in Physical Education, Viswanadha Institute of Technology And Management, Visakhapatnam, A.P. India, Email: pdchanduneteti@gmail.com

<sup>2</sup>. Dr. G. P. Raju, Asst.Prof.in Physical Education,JNTUK, College of Engineering, Vizianagaram, A.P. India.

### **Abstract**

This study examined the effect of speed performance in single chain running skill in the game of Kho Kho. The subjects in this study were ten female inter-Collegiate Kho Kho players age group of 18 to 21. These players studying in various engineering colleges in Visakhapatnam district. Players undergone in speed training for week days. The life style and family factors could not be controlled. The data was collected on the open field, not under laboratory conditions. The collected data was analyzed by using t-test. The findings of this study revealed that there is a significant difference in speed performance.

Key words: Physical fitness, Runners, chasers, speed, single chain.

### **Introduction**

Kho Kho is an indigenous game of India. The word Kho derived from the Sanskrit word "syu" means get up and go. It is depends upon natural principles of physical development. The game of Kho Kho requires speed, strength, endurance and flexibility. Speed is the main physical fitness variable in this study. Speed performance is not possible without physical fitness. Runner use maximum speed to go away from chaser simultaneously chaser also use speed to pursue to catch the runner. Kho Kho can be played on any surface that suits open field sports. Generally clay courts are preferable for this game. The game of Kho-Kho comprises of mainly two skills i.e., running and chasing. Single chain skill comes under running.

In the beginning Kho Kho was played only in Baroda, Poona and West part of India. The dimensions of the play field different at different places. Wooden posts were not existing but two players were standing at the place of two posts. In those days 9 players used to play. Before 1950, chaser could not touch runner directly but he had to go to pole to pole to touch the 9 runners. The team who touched a player of opposite team was getting 10 points. When a chaser committed a foul, his half point was deducted. At many times the team's score was minus. The direction was taken by legs and they could come back by touching the pole line. After 1950-51, a player could touch directly. The rule was framed to take direction from shoulders instead of from legs. Half point deduction for foul was not deducted at this time. In 1914, the first ever rules were published by Poona Gymkhana. Later Baroda gymkhana framed rules in 1924. 1959-60, first National championship was held in Vijayawada, A.P. The game of Kho Kho exhibited in 1936, Berlin Olympics.

### **Review of Literature**

Deshon and Nelson studied the relationship between running velocity and factors associated with leg positions and stride length. A 16mm camera was operated at 64 frames per second. 19 subjects were filmed for precisely 100 frames. After accelerating to maximum speed the interrelationships were computed for velocity, the length of full running cycle, the angle of leg touching the ground and height of the leg lift. The correlations ranged from 0.31 to 0.71. In general reliabilities were high and shown that runners maintained almost same styles from one cycle to other.

According to Flieshmann" Physical fitness is a term used to refer to the functional capacity of an individual to perform certain kinds of tasks requiring muscular activity." Physical fitness is the ability of the body to adopt and recover from strenuous exercise. It is a relation of one's ability to work and play with vigour and pleasure without undue fatigue and with sufficient energy for unforeseen emergencies.

#### Definition of the Terms

Speed: The capacity to move a limb or part of the body or whole body with the greatest possible velocity.

Physical fitness: It is the ability to enjoy our lives and to achieve our goals without undue fatigue or stress. It is the combination of speed, strength, flexibility, endurance and coordinative abilities.

Runners: The players of the side other than the chasers are known as runners.

Chasers: The players sitting in the squares are known as chasers.

#### Significance of the Study

1. This study could be helpful to players, coaches to measure optimal performance levels at the right time.
2. Demonstrates how speed influence skill enhancement.
3. Adds knowledge to the area or research.
4. Helps the researcher to assess the best time to perform the activity.

#### Single Chain

Runner goes from one post to the other end post from behind of every sitting chaser in zig zag running is called single chain running. This skill is used by runner during the play. He needs optimum speed to perform this skill to go away from active chaser. The runner has to go in between all sitting chasers very carefully. While standing at the behind the chaser he should maintain enough distance to avoid the active chaser. Runner has to change direction and speed more at every next moment.

#### Statement of the Problem

Single chain running in Kho Kho depends upon the main factor of speed training programme. The object of this study is to assess the impact of physical fitness component is speed.

#### Methodology

Ten players are taken as subjects and they have undergone training for week days in acceleration of speed (50 yards dash) for 10 times in between rests. After this training ten female players of inter-collegiate level aged 18-21 participated in running skill of Kho Kho. Stop watch, chunnam, whistle were used as materials. Three students assisted for this training.

#### Analysis of the Data and Results of the Study

The data was statistically analyzed and the results were presented. The purpose of the study was to investigate the influence of speed training programme for single chain skill performance of Kho Kho players. For this purpose, data was obtained from ten inter-collegiate female Kho Kho players from engineering colleges of Visakhapatnam district.

#### t- test – Speed

S. No	Pre-training (x) in sec.	Post-training (y) in sec.	d= (y-x)	d <sup>2</sup>
1	7.0	6.0	-1	1
2	7.1	6.1	-1	1
3	7.1	6.0	-1.1	1.21
4	7.2	6.1	-1.1	1.21
5	7.1	6.0	-1.1	1.21
6	7.0	6.1	-0.9	0.81
7	7.0	6.2	-0.8	0.64
8	7.0	6.1	-0.9	0.81
9	7.1	6.0	-1.1	1.21
10	7.1	6.2	-0.9	0.81
Total			-9.9	9.91

$$t = \frac{\bar{d}}{s/\sqrt{n}} \text{ where } \bar{d} = \frac{\sum d_i}{n} = \frac{-9.9}{10} = -0.99$$

$$s = \sqrt{\frac{\sum d^2 - n(\bar{d})^2}{n-1}} = \sqrt{\frac{0.11 - 10(-0.09)^2}{10-1}} = \sqrt{\frac{0.11 - 0.081}{9}} = 0.11$$

$$\therefore t = \frac{-0.09}{\frac{0.11}{\sqrt{10}}} = \frac{-0.09\sqrt{10}}{0.11} = -28.46$$

$\therefore |t| = 28.46$ , tabulated  $t_{\text{tab}} = t(\alpha, d. o. f) t_{0.05, (10-1) d. o. f} = t_{\text{tab}} = 1.83$

$\therefore t_{\text{cal}} . 28.46 > t_{\text{tab}} 1.83$ , we reject  $H_0$

Hence it is concluded that there is a significant difference in speed between pre and post training stages.

t- test applied because samples are only 10. t calculated value is 28.46, t tabulated value is (0.05 (10-1) degrees of freedom). t tabulated value is 1.83. since t calculated value 28.46 is greater than t tabulated value 1.83 and the conclusion is that there is a significant difference in speed between pre and post training.

### Discussion

The finding of the study clearly indicates that there is a significant difference in speed between pre and post training stages.

### Conclusion

Conducting single chain running skill after undergone the training programme researcher found that speed plays a vital role in minimize the time. So training in speed is very crucial while performing the single chain running skill.

### Recommendations

1. Similar study can be conducted by using players of different sports and games.
2. Players may take fitness training for better performance
3. Make training programme mandatory for every player so that it may give confidence to players and avoid injuries.

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**A Comparative Study of Self Confidence among Kabbadi and Kho Kho Players of Jalna in Maharashtra State**

**Dr.Devesh Datta Pathrikar**  
**Asst.Professor, Department of Psychology**  
**Nirmal Krida and Samaj Prabadhan Trust Arts, Science and Commerce College**  
**Badnapur Dist,Jalna, Maharashtra, India**

**Dr.Shafiuddin Sharfoddin Shaikh**  
**Former Dean, Faculty of Physical Education**  
**Dr.Baba Saheb Ambedkar Marathwada University, Aurangabad,India**

**Abstract:**

Kabbadi and Kho Kho are the Indian Sports. Kabaddi is a contact sport that originated in Ancient India. Modern Kabaddi is therefore a synthesis of the game played in various forms under different names. Kabaddi received international exposure during the 1936 Berlin Olympics, demonstrated by India. The game was introduced in the Indian National Games at Calcutta in 1938. In 1950 the All India Kabaddi Federation came into existence and framed the rules. The game was included for the first time in the Asian Games in Beijing in 1990 where seven teams took part. Kho kho is a tag sport played by teams of twelve players, of which nine enter the field, who try to avoid being touched by members of the opposing team. It is one of the two most popular traditional tag games of the Indian subcontinent, the other being kabbadi. Self confidence in sports relies primarily on the athletes ability to believe he can win and that can be successful in his efforts. Purpose: The Purpose of the study is to find out the self confidence among Kabbadi and Kho Kho Players of Jalna in Maharashtra State. Methodology: The sample for the present study consists of 50 Male Kabbadi Players and 50 Kho Kho Players of Jalna. Dr.S.J.Quadri Self Confidence Inventory is used to assess the Self Confidence. Results: The Results of the Study shows that Kho Kho Players are having more confidence than Kabbadi Players. Conclusions: It is concluded that Kho Kho Players are having more self confidence than Kabbadi Players. Hence it is recommended that Psychological Training must be included in the Coaching Program in sports for development of Self Confidence among sports persons. Self confidence is the main psychological variable for key to success in sports and games.

Key Words: Self confidence, Psychological Training, Kabbadi and Kho Kho etc.

**Introduction:**

Kabbadi and Kho Kho are the Indian Sports. Kabaddi is a contact sport that originated in Ancient India. Modern Kabaddi is therefore a synthesis of the game played in various forms under different names. Kabaddi received international exposure during the 1936 Berlin Olympics, demonstrated by India. The game was introduced in the Indian National Games at Calcutta in 1938. In 1950 the All India Kabaddi Federation came into existence and framed the rules. The game was included for the first time in the Asian Games in Beijing in 1990 where seven teams took part. Kabaddi was introduced to and popularized in Japan in 1979 by Sundar Ram of India, who toured Japan on behalf of Asian Amateur Kabaddi Federation for two months to introduce the game. In 1979, matches between Bangladesh and India were held across India. The first Asian Kabaddi Championship was held in 1980 and India emerged as champion beating Bangladesh. The other teams in the tournament were Nepal, Malaysia, and Japan. The game was included for the first time in the Asian Games in Beijing in 1990 where seven teams took part.

Kho kho is a tag sport played by teams of twelve players, of which nine enter the field, who try to avoid being touched by members of the opposing team. It is one of the two most popular traditional tag games of the Indian subcontinent, the other being kabaddi. Self confidence in sports relies primarily on the athlete's ability to believe he can win and that he can be successful in his efforts.

The socio-psychological concept of **self-confidence** relates to self-assurance in one's personal judgment, ability, power, etc. Self-confidence in sports relies primarily on the athlete's ability to believe he can win and that he can be successful in his efforts. Consultants at the United States Tennis Association report that self-confidence is one of the most important attributes an athlete can possess and should be fostered by both athletes and their coaches.

#### **Method:**

The sample for the present study consists of 50 Male Kabaddi Players and 50 Kho Kho Players of Jalna. Dr. S. J. Quadri Self Confidence Inventory is used to assess the Self Confidence. This scale was constructed and standardized by Dr. Quadri Syed Javeed. That test consists of 30 items, each item 'YES' 'NO' type alternatives. This Questionnaire were given Kabaddi Players and Kho Kho Players to write separately in different groups.

#### **Results and Discussion:**

The Results of the Study shows that Kho Kho are having more confidence than Kabaddi Players. Kho Kho Game can improve your self confidence not only in game, but in other aspects of your life as well. It's an extremely challenging Sport that tests your limitations and to overcome physical and mental obstacles compare to the Kabaddi Players.

**Table I:**

**Self confidence inventory mean values of Kabaddi and Kho Kho Players**

Variables	Group	Number of subjects	Mean	Standard deviation	Standard error
Self Confidence Inventory	Kho Kho Players	50	25.6	0.88	0.12
	Kabaddi Players	50	19.32	1.1	0.16

In Table No.1 the Mean of Kho Kho Players is 25.6 and Kabaddi Players 19.32 there is a difference 6.28 between the Kho Kho and Kabaddi Players. Kho Kho Players are having more confidence than the Kabaddi Players.

#### **Conclusion:**

It is concluded that Kho Kho Players are having more self confidence than Kabaddi Players. Hence it is recommended that Psychological Training must be included in the Coaching Program in sports for development of Self Confidence among sports persons. Self confidence is the main psychological variable for key to success in sports and games.

#### **Recommendations:**

Similar Studies can be conducted on Women sports persons and other sports and games.

#### **References:**

Wikipedia, Kabaddi and Kho, Self confidence  
International Journal of Health, Physical Education and computer Science in sports

## **A Study on effect of Plyometric exercises for development of speed among Cricketers of Aurangabad District in India**

**Dr.Mohd. Abdul Bari**  
Associate Professor, Dept. of Physical Education,  
Maulana Azad College of Arts,Science and Commerce, Aurangabad, M.S.

### **Abstract**

Cricket is a bat-and-ball game played between two teams of 11 players on a field at the centre of which is a rectangular 22-yard long pitch. Each team takes it in turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. Plyometrics is a catch all term for training methods that is used to improve the amount of force in muscles to generate the speed. Purpose: To find out the effect of Plyometric Exercises for development of Speed among Cricketers of Aurangabad District in India. Methodology: The sample for the present study consists of 40 Male Cricketers of Aurangabad District out of which 20 are experimental group and 20 are controlled group. Plyometric Exercises such as hopping, bounding, depth jumps, hurdle jumps, box jumps, tuck jumps given to the experimental group along with the Cricket Training for six weeks and control group were given the general training of the cricket. Pre Test and Post Test were conducted on 30 M flying Start Run to assess the speed to both the groups. Results: This Study shows that due to the Plyometric training there is a improvement of speed among Experimental group compare the control group. Conclusions: A good training program for cricketers can easily incorporate plyometric methods as they don't require much special equipment. Plyometric workouts are not only a great way to improve explosive reaction for athletes in sports like tennis, boxing, hockey, cricket, volleyball, basketball, soccer, rugby and many other sports but this type of training is used more and more by everyday people wanting to improve their fitness and performance. It is concluded that due to plyometric training there is a improvement of speed among Cricketers. It is also recommended to coaches to include the Plyometrics program for Cricketers for enhancing the performance and speed.

Key Words: Plyometrics, Speed, Cricket etc.

### **Introduction:**

Cricket is a bat-and-ball game played between two teams of 11 players each on a field at the centre of which is a rectangular 22-yard long pitch. The game is played by 120 million players in many countries, making it the world's second most popular sport. Each team takes its turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat away from the fielders so he can run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, or a specified number of over's of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat.

In professional cricket the length of a game ranges from 20 over's per side to Test cricket played over five days. The Cricket is maintained by the International Cricket Council (ICC) and the Marylebone Cricket Club (MCC) with additional Standard Playing Conditions for Test matches and One Day Internationals. Cricket was first played in southern England in or before the 16th century. By the end of the 18th century, it had developed to be the national sport of England. The expansion of the British Empire led to cricket being played overseas and by the mid-19th century the first international match was held. ICC, the game's governing body, has 10 full members. The game is most popular in Australasia, England, the Indian subcontinent, the West Indies and Southern Africa.

Plyometrics, also known as "jump training" or "plyos", are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle extension to a contraction in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometrics are primarily used by athletes, especially martial artists, sprinters and high jumpers, to improve performance, and are used in the fitness field to a much lesser degree. Plyometrics is a suitable form of power training for many team and individual sports. To find out the effect of Plyometric Exercises for development of Speed among Cricketers of Aurangabad

#### **Methodology:**

The sample for the present study consists of 40 Male Cricketers of Aurangabad District out of which 20 are experimental group and 20 are controlled group.

The following Plyometrics Exercises were given to Cricketers Experiment Group for six weeks.

1. Hopping 2. Bounding 3. Depth jumps 4. Hurdle jumps 5. Box jumps 6. Tuck jumps

The control group were given the general training of the cricket.

Pre Test and Post Test were conducted on 30 M flying Start Run to assess the speed to both the groups.

#### **Results:**

This results of the study shows that due to the plyometric training there is a improvement of experimental group in Speed and controlled group is decreased in performance of speed due to the general training.

**Table No. I: Mean values of 30 M run test between experimental and control group of Cricketers**

Variables	Group	Pre Test Mean	Post Test Mean	t	P – Value
30 M Run Test	Experimental	4.53	4.23	2.58	0.000
	Control	4.66	4.73		

The Experimental Group of 30 M Run Mean is 4.53 in Pre Test and Controlled Group mean is 4.66 in Pre Test there is a difference of 0.13 in Pre Test. The Experimental Group Mean is 4.23 in Post Test and Controlled Group mean is 4.73, the Experimental Group mean in Post Test in 30 M Run is decreased from 4.53 to 4.23 there is a improvement of 0.30 from Pre Test to Post and Control Group Mean is post test is 4.73 there is a increase of 4.66 to 4.73 from Pre Test to Post, the performance is come down to 0.07 in the controlled group. Due to the Plyometric Training the Experimental group of Cricketers has improved a lot.

#### **Conclusions:**

A good training program for cricketers can easily incorporate plyometric methods as they don't require much special equipment. Plyometric workouts are not only a great way to improve explosive reaction for athletes in sports like tennis, boxing, hockey, cricket, volleyball, basketball, soccer, rugby and many other sports but this type of training is used more and more by everyday people wanting to improve their fitness and performance. It is concluded that due to plyometric training there is a improvement of speed among Cricketers. It is also recommended to coaches to include the Plyometrics program for Cricketers for enhancing the performance and speed.

#### **Recommendations:**

It is Recommended that the due to the Plyometric training there will be improvement of strength and speed in legs. It also improve the co-ordination in the arms and legs and promotes in developing the Strength and Speed. Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve the motor abilities of the sports persons.

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## **Importance of Sports Psychology in Physical Education and Sports**

**G.Punyavathi**  
**Physical Education Teacher**  
**ZPHS, Immulnarva (Village)**  
**Kohtur(Mandal),Mahabubnagar**

### **Introduction:**

Sport psychology is a interdisciplinary science that draws on knowledge from the fields of Kinesiology and Psychology. It involves the study of how psychological factors affect performance and how participation in sport and exercise affect psychological and physical factors. In addition to instruction and training of psychological skills for performance improvement, applied sport psychology may include work with athletes, coaches, and parents regarding injury, rehabilitation, communication, team building, and career transitions.

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 relatively young discipline within psychology. In 1920, Carl Diem founded the world's first sports psychology laboratory at the Deutsche Sporthochschule in Berlin, Germany. In 1925, two more sports psychology labs were established – one by A.Z. Puni at the Institute of Physical Culture in Leningrad and the other by Coleman Griffith at the University of Illinois.

The increased stress of competitions can 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 race, 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.

This has led coaches to take an increasing interest in the field of sport 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.

### **Role of Sports Psychology**

The specialised field of sports psychology has developed rapidly in recent years. The importance of a sports psychologist as an integral member of the coaching and health care teams is widely recognized. Sports psychologists can teach skills to help athletes enhance their learning process and motor skills, cope with competitive pressures, fine-tune the level of awareness needed for optimal performance, and stay focused amid the many distractions of team travel and in the competitive environment. Psychological training should be an integral part of an athlete's holistic training process, carried out in conjunction with other training elements. This is best accomplished by a collaborative effort among the coach, the sport psychologist, and the athlete; however, a knowledgeable and interested coach can learn basic psychological skills and impart them to the athlete, especially during actual practice.to help the parties air and resolve differences.

### **Preparing for Competition**

Simple psychological skills to help the athlete manage the competitive performance environment include: 1) learning relaxation skills (e.g.progressive relaxation, slow, controlled, deep abdominal breathing or autogenic training.

2) Mastering all of the attentional styles (types of concentration) 3. Imagery (both visualization and kinesthetics) 4. Self talk 5. Developing a precompetition mental routine to be employed immediately prior to competition on game day.

### **The Injured Athlete**

Injured athletes commonly experience at least three emotional responses: isolation, frustration and disturbances of mood. The Sports Psychologist in consultation with the medical team must make ready the injured athlete to participate in sports and games.

### **Motivational techniques for coaches and athletes**

#### **1. Goal setting**

Athletes should be encouraged to set a few ambitious but achievable long-term goals; perhaps to represent their country in a major championship in three or four years. Through empowering athletes to set their own goals, they are more likely to accept the challenges that lie ahead and pursue the goals with enthusiasm. Goals need to be monitored and revised on a regular basis. One of the biggest mistakes that coaches make in setting goals is that they are often too rigid in their approach. The goal setting process works best when there is some flexibility and the individual athlete or team take ownership of each goal. Thus, coaches and managers are better off exercising some democracy when setting goals, particularly if working with more experienced athletes.

#### **2. Using extrinsic rewards**

The key aspect in using extrinsic rewards effectively is that they reinforce an athlete's sense of competence and self-worth. Thus, a reward should be informational in nature rather than controlling. If a reward comes to be controlling, it can significantly undermine intrinsic motivation. For a reward to be informational, it is advisable that it has relatively little monetary worth (ie it is a token reward), such as a 'woman of the match' or 'athlete of the tour' title. Also, the reward should be presented to an athlete in front of all potential recipients with some emphasis placed on the prestige associated with it. Other popular ways of using token rewards include etching athletes' names on annual honours boards for their contributions, or awarding a special item of clothing.

#### **3. Motivational music**

A particularly good way to motivate athletes in training and prior to competition is through the use of music they perceive to be inspirational.

#### **4. Positive self-talk**

Positive self-talk is a technique that can be used to enhance motivation across a wide range of achievement domains. It makes use of an athlete's powerful inner voice to reinforce their self-esteem or important aspects of their performance. With appropriate repetition, self-talk can positively alter an athlete's belief system. I use three types of self-talk in my work with athletes and will illustrate each with an example to assist you in coming up with your own.

#### **Discussion:**

Each and every one of us has an untapped energy source that can be drawn upon to bring about superior results. Enhancing motivation is fundamentally about a change of attitude, developing a positive 'can do' mindset and engaging in systematic behaviours – the short-term process goals – that facilitate improvement. If you have a leadership role in sport you will have considerable influence on how motivated your athletes or team might feel. You can instil a good work ethic, recognise individual effort and instigate transparent reward structures that reinforce people's sense of competence. To work best, the techniques mentioned in this article need to be moulded around specific circumstances and the needs of individual athletes. Always strive to be original and innovative in the application of motivational techniques.

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## Benefit OF Fasting One Day A Week

**\*\*Mr. A. Ravinder, School Assistant,  
Physical Education, Govt. High School (old) Jagityal, Karimnagar.**

**\*Mr. Nagarjunasangem,  
Lecturer in Physical Education,  
University College of Physical Education, Kakatiya University, Warangal. T.S. India  
Email: nagarjunasangem@gmail.com**

### Introduction:

Is fasting one day a week good for your health? To answer this question, let's take a look at what happens in your body when you begin to eat and drink nothing but water.

After your cells use up the sugar that is in your bloodstream from your last meal or beverage, your body has to find another source of energy for your cells. And the first places that it turns to are your liver and your muscles. Both your liver and your muscles store sugar in the form of glycogen, and when needed, glycogen can be broken down to glucose, which all of your cells can use to produce energy for their ongoing activities.

During a water-only fast, your glycogen stores are depleted within about 24 hours, give or take a few hours. After your glycogen stores are used up, most of your cells begin burning fatty acids for energy - these fatty acids come from your fat reserves, including fatty tissue that surrounds your organs. Two groups of cells -- your red blood cells and your brain cells -- cannot use fatty acids to fuel their energy needs. Your red blood cells and brain require glucose, and once glycogen/glucose from your muscles and liver are used up, your brain and your red blood cells get their glucose from two sources: 1. From glycerol, which is a component of your fat tissues. 2. From your muscles -- some of your muscle tissues get broken down, and the amino acids from your muscle tissues are used to produce glucose for your brain and red blood cells.

Clearly, it's not in your best interest to rapidly eat up your muscles to meet the energy requirements of your brain and red blood cells during a water-only fast. Your body knows this, and somewhere between the 2nd and 3rd day of water-only fasting, your liver begins churning out ketones, which during a water-only fast, come primarily from the breakdown of fatty acids from your fat reserves. Once your liver generates large numbers of ketones, your brain is able to use ketones to fuel itself. At this point, only your red blood cells require glucose that must still be derived from the breakdown of your muscles, but with your brain no longer dependent on breakdown of your muscles for energy, the rate at which your muscles are catabolized will be such that your muscles are spared as much as possible -- this state is called "protein sparing" -- it's a survival mechanism that is built into human physiology to deal with times of famine. Getting back to the big picture, it should be clear that from about the 2nd or 3rd day of a water-only fast, your body meets its energy requirements through your fat reserves. *Since the bulk of the toxins in your body are stored in your fat reserves, the longer you fast on water only, the more fat you'll burn and the more toxins you'll eliminate from your system.* This is why we see elimination of lipomas, atheromas (accumulated waste in your blood vessels), and other conditions related to toxin accumulation during a prolonged water fast.

**Discussion:**

Put another way, your body does not experience significant detoxification during the first 12-24 hours of a water-only fast. Your body begins to eliminate large quantities of toxins only after it begins to burn your fat reserves at a rapid rate. And this doesn't happen until you've used up the glycogen stores in your liver and muscles. So when you fast one day a week, you deplete the stores of sugar in your liver and muscles, and you begin to break down your muscles -- these are the main things you accomplish during the first day of water fasting. Significant detoxification only begins to occur if you continue past day one of fasting. This is not to say that there are no benefits to fasting one day a week, or that you don't eliminate any toxins during a one-day fast.

You are eliminating toxins with every breath that you take. And your body will always increase its rate of ongoing detoxification whenever you get more rest and/or eat less food, because less digestive burden and more physical rest always mean more available resources for detoxification.

Rather than fast one day a week on water only, for most people, it makes more sense to do a juice fast one day a week, or even once a month. With a juice fast, you can supply your body with enough nutrients that you don't have to deplete the sugar stores in your liver and muscles, or break down a lot of your muscle tissue. At the same time, because the nutrients in freshly pressed juices are so easily digested, a one-day juice fast can ease digestive burden and enhance ongoing detoxification to some degree. But let's be clear: the main benefit of a one-day juice fast is not significant detoxification; it's a concentrated period of rest for your digestive organs, and an opportunity for the organs that are responsible for ongoing detoxification (liver, kidneys, skin, and lungs) to do a little extra health-promoting work.

This study says that it's not good for long term health to fast one day a week on water only. If you want to give your body a period of rest and intense cleansing once in a while, it makes more sense to spend a day eating all raw fruits and vegetables, or drinking nothing but freshly pressed juices.