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## A study on selective physical fitness components of state level male tribal footballers

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### Abstract

Fitness is the part of overall health. The characteristics and the structure of the coordinative abilities of the athletes are an involved problem of the sport science. The cybernetics- a science for the control of the complex dynamic systems is the most appropriate theoretical basis of investigation the motor fitness abilities. Football is an intermittent sport which requires the combined effect of sprinting and running, involving both the aerobic and anaerobic energy system. Therefore, physical fitness is an essential factor for the football players to produce optimum performance. This study is a pilot study where we have unveil the selective physical fitness components of male football players.

**Keywords:** Footballer, physical fitness.

### 1. Introduction

Physical education has until recently been considered almost exclusively as a profession providing programs in educational institutions, but is now also an academic discipline with a growing knowledge base whose focus point is to improve human movements.

Recent scientific reports inform us that the whole universe is created through tremendous movement of our solar system and in the same manner the earth is created where we are living<sup>[1]</sup>. So, movement is the inevitable part of this Universe, without movement life does not exist. So, movement is the major theme of physical activity.

General fitness is the part of overall health. Being generally fit means having a healthy body weight as well as an ability to perform physical fitness activities without tiring easily. Specific fitness is the opposite of being generally fit. It refers to how well a person is able to master specific levels in a part. General fitness is more about being healthy in a well-rounded way. A general fitness workout could be as simple as working, since it helps in overall health.<sup>2</sup> Brisk walking can provide cardiovascular exercise as well as arm, leg toning. Some people increase the intensity of their general exercise by gradually adding jogging or running to walking workout. Any exercise routine performed to act on overall health is considered as general fitness. While certain arm or leg movements are used as a part of specific fitness training to improve skill in a certain game such as golf or tennis, if done regularly, can have reduce the risks from some disease associated with lifestyle factors. For instances, a genetic predisposition to type two diabetes may lead a person developing the disease, but studies have shown that it may be prevented through proper diet and regular exercise. Regular workouts done to keep the body healthy and resist disease are general fitness oriented<sup>[2]</sup>.

The characteristics and the structure of the coordinative abilities of the athletes are an involved problem of the sport science. The cause for the existing in definition is the lack of theoretic position in the research of these abilities. Movement coordination may be understood as processed of steering and regulating. The cybernetics- a science for the control of the complex dynamic systems is the most appropriate theoretical basis of investigation the motor fitness abilities.

The present study was planned for understanding how motor fitness has developed on sports performance.

### 2. Materials and methods

#### 2.1. The subjects

The subjects of the present study were randomly selected from Azimganj Don Bosco School, Murshidabad district. Total 250 football players were selected randomly and the age ranging

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from 15yrs to 19yrs. The study was approved by the Departmental Ethics Committee and the players provided written, informed consent to participate. All subjects were familiar with all the testing that took place, which included both field and laboratory assessments.

## 2.2. Measurement of physiological data

- Age: Age of the subjects was recorded from their college and university register [3].
- Height: Height of the subjects was recorded in centimetre (cm.) using anthropometric rod [3].
- Weight: Weight was measured using a portable weighing machine, weight of the subject was recorded in kg and approximate to nearest whole numbers [3].

## 2.3. Procedure of collecting data

The subjects were assembled and informed about the purpose of the study. They were instructed to complete the tests following the standard procedure. They were motivated to give their best performance. Tests were taken two times i.e. before and after experimental time period.

### 2.3.1. Shuttle run (4X10mts)

#### 2.3.1.1. Test Administration

Shuttle run was used to examine the agility of the football players. Two parallel lines were marked on the floor 10meter apart or the width of the regular play field used for the test. The two wooden blocks were placed behind one of the line. The subjects were asked to start from behind the other line. On the signal, the subjects run towards the block, picked up one block, run back to the starting line, placed the block behind the starting line, run back and picked up the second block and it was carried back across the starting line. As soon as the second block was placed on the ground the timer stopped and the time was recorded.

#### 2.3.1.2. Scoring

Two trials were allowed to each subject with some rest between the time of the better of the two trails was recorded to the nearest 10<sup>th</sup> of a second as the score of the test item.

### 2.3.2. Standing Broad Jump

#### 2.3.2.1. Test Administration

A demonstration of the standing broad jump was given to a group of subjects to be tested. The subject was then asked to stand behind the starting line with the feet parallel to each other. The subject was instructed to jump as farthest as possible by bending knee and swinging arms to take off for the broad jump in the forward direction. The subject was given three trials

#### 2.3.2.2. Scoring

The distance between the starting line and the nearest point of landing provides the score of the test. The best trial is used as the final score of the test [4].

### 2.3.3. 50 yard dash

#### 2.3.3.1. Test administration

This test was used to examine the speed of the subjects. After a short warm up prior the players took a position behind the starting line. The starter used to command 'Are you ready' and 'Go', the latter accompanied by a downward sweep of the arm as a signal to the timer. The players run across the finish line. Then they may slow down gradually.

### 2.3.3.2. Scoring

The score is the elapsed time to the nearest 10<sup>th</sup> of a second between the starting signal and the instant the players across the finish line.

### 2.3.4. 600 yard dash

#### 2.3.4.1. Test administration

This test was used to examine the endurance of the subjects. After a short warm up prior the players took a position behind the starting line. The starter used to command 'Are you ready' and 'Go', the latter accompanied by a downward sweep of the arm as a signal to the timer. The players run across the finish line. Then they may slow down gradually.

#### 2.3.4.2. Scoring

The time in minutes and seconds were recorded as the score.

## 2.4. Statistical Analysis

The collected data were analyzed by using statistical method. Mean and Standard Deviation were calculated for each parameter of each group. The significance of difference between the mean values of two groups of subject was analysed using Students' 't' test by using MICROCAL ORIGIN PRO 7 software.

## 3. Results and discussion

### 3.1. Personal data

From the table 1 it has observed that the Mean value and the SD of age of the football players was 15.20yrs  $\pm$  0.99 on the other hand Mean value and SD of height of football players was 153.40cm  $\pm$  5.12 and the Mean value and SD of weight of the football players was 55.33 kg  $\pm$  5.49 respectively.

**Table 1:** The Mean and SD of personal data of football players (n=250)

Personal data	Sex	Mean $\pm$ SD
Age (Yrs.)	Male	15.20 $\pm$ 0.99
Height (cm)		153.40 $\pm$ 5.12
Weight (kg)		55.33 $\pm$ 5.49

SD: Standard deviation

These tests scores were expressed in numerical value.

### 3.2. Motor fitness variables

It was observed from the table 2 that the mean  $\pm$  SD values of shuttle run, standing board jump and speed of football players were 6.97 $\pm$ 0.50, 2.02 $\pm$ 0.16 and 6.50 $\pm$ 0.15 and the calculated 't' values were 33.16, 9.75 and 37.36 which were statistically significant, respectively ( $p \leq 0.001$ ).

**Table 2:** The Mean and SD of physical motor fitness variables of football players (n=250)

Physical motor fitness variables	Mean $\pm$ SD
Shuttle run (Agility)	6.97 $\pm$ 0.50
Standing board jump (Explosive strength)	2.02 $\pm$ 0.16
50 yard dash (Speed)	6.50 $\pm$ 0.15
600 yard dash (Speed)	10.19 $\pm$ 0.53

SD: Standard deviation

Football is an intermittent sport which requires the combined effect of sprinting and running, involving both the aerobic and anaerobic energy system. Therefore, physical fitness is an essential factor for the football players to produce optimum performance. Physical fitness has two components, one is health related and another one is performance related, for football players' performances related fitness is more causative

factors to produce better performance [2]. Several research works had been reported regarding fitness components, but in this study we have unveiled a new dimension where the selected fitness components of the tribal male football players are reflected, this is a pilot study we have reported the status of physical fitness of the tribal football players. Further studies in this area will open a new avenue for research.

#### **4. Conclusion**

In conclusion, it can be said that this is a pilot study where we have unveiled the selective physical fitness components of male football players.

#### **5. Acknowledgement**

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#### **7. Source of support**

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#### **8. Conflict of interest**

None Declared