

## Evaluation of Specific Physical Fitness Test and Skill Test of Football Players

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### Abstract

The purpose of the study was to determine the evaluation of Specific Physical fitness test and skill test of Football players. Total 91 football players of which, 36 school level male football players, 20 college level male players, 17 university level male football players and 18 college level female football players volunteered as subjects. The aim of the study was to evaluate the existing specific physical fitness field tests for young football players. For this purpose, the 't' test is used to evaluate the performance of the subjects in the test. And ANOVA was conducted to analyze the difference in means among all groups of subjects namely school level, college level and university level.

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### INTRODUCTION

Association Football, which is also known as Soccer, is accepted as the most popular form of sport in the world, being played in every nation without exception. Soccer has grown with a rich history and the formation of Football Association in 1863 has paved the way for spreading the game throughout the world, Soccer, which is also popularly known as Football game has spread to continental European countries and later to South America and the other continents. The governing body of Football throughout the world, the Federation of the International Football Association (FIFA) was set up in 1904 and the first Olympic Soccer Competition was held four years later. The first World Cup Tournament was held in 1930, which has become a regular feature of once in four years like Olympic competitions and is arguably the tournament with the most fanatical hold on its spectators and TV audiences. It is acknowledged by coaches, trainers and sport scientists that preparation for competitive matches calls for a systematic approach, which includes consideration of fitness levels of individual players as well as the team as a whole. The fitness profiles of the players are considered relevant not only for the preparation of the players and team for the important matches and tournaments but also throughout the competition season. The Physical fitness abilities of the players is developed during off-season and pre-competitive season and maintained during competitive season. Monitoring the impact of Physical fitness training during different periods of training and also assessing the level of physical fitness of individual players during different periods is also considered most essential. **Bangsbo (1994)** has described various running tests specifically designed for soccer players. They included a sprint test performed seven times over a slalom course of 35 meters with 25 seconds rest between sprints. The duration of each sprint was recorded and a fatigue index was obtained by comparing the fastest and slowest sprints. Blood lactate concentration was found to be between 9 and 14 ml. which conformed the involvement of anaerobic activity to a large extend.

**Van Gool et. al. (1988)** have stated that the total distance covered by the soccer players has been constantly increasing from year to year and he has further stated that the distance covered during 1954 was 3,360, increased to 4834 meters during 1974 further

increased to 8,680 meters during 1976 as declared by. Reilly Thomas, increased to 9700 meters during 1983, increased to 10,332 meters in 1983 itself and further increased to 10,631 meters during 1984. In the research study conducted on the Belgium University team, it is found that players covered a distance of 10,225 meters out of which 42.9% covered by the low intensity, that is by walking at the speed of 1.31 meters per second and standing still and 42.6% was covered at medium intensity, that is by jogging. According to further investigations, the players are found to need 2.36 kcal for one shot and 0.84 kcal for a pass. Hence, it is realized that the training must be carried out with physical load heavy enough to put so much strain on the organisms.

Besides, Yo-Yo test was also one of the well-developed protocols for soccer players. There are altogether three Yo-Yo tests: Yo-Yo endurance test, Yo-Yo intermittent endurance test and Yo-Yo intermittent recovery test. Both of the Yo-Yo tests are used to evaluate one's ability to complete bouts of 2x20m run over a prolonged period of time. Yo-Yo tests are valid and useful for the players who perform intermittent sports such as tennis, handball, basketball and soccer (**Bangsbo, 1996**).

### **OBJECTIVE**

The objective of the study to determine the evaluation of Specific Physical fitness test for Football players.

### **HYPOTHESIS**

There will be significance difference in football players in specific physical fitness field tests.

### **METHODOLOGY**

The purpose of the study was to determine the evaluation of Specific Physical fitness test for Football players. The t-test was used to determine the significance of differences between the different groups for their mean scores on different tests.

### **PROCEDURE OF TEST:-**

The aim of the study was to evaluate the performance of football players in specific fitness field tests.

**General Physical fitness test by Sukumar Saha (1986)** developed this test as under mentioned items:-

1. 3 hops with right leg (To asses the explosive strength endurance)
2. 3 hops with right leg and left
3. Zig-Zag run (To asses the agility)
4. 300 meters sprint (To asses speed endurance)

**Football Skill test adopted by Van Rossum and Wijbenga(1993)** developed theses items:-

1. 16 meters goal kicking
2. Kicking for distance and accuracy
3. Ball juggling
4. Slalom dribble

**Specific Functional Fitness Test developed by Zelenka et. al.(1964): Zelenka et. al (1964)** have developed a specific function test for young football players. The test was so designed to be carried out on a marked out portion of the penalty area of football field and the competition of one round of the test was measuring 123 meters. The test was carried out twice with an interval of 45-60 seconds in relation to rest pulse frequency. The test was performed with football boot from standing start position and the test

consisted of a sprint with a sharp change of direction, jumping and crawling under a low athletic hurdle (obstacle of 90 centimeters height) slalom dribble of the football between 7 gates and passing the ball for 25 meters into a space 2 meters wide. The passing of football was done once with each foot for each round. The accuracy of passing and change of pulse frequency after the first round, before the start of the second round and for 5 minute interval after finishing the second round were noted.

In the test constructed by Zelenka et. al. (1964), the subject starts from behind goal line and runs forward up to penalty area line and turns towards goal and jumps over a hurdle and moves under another hurdle and starts dribbling the football, which is placed at a distance from the hurdle and dribbles the ball between 7 gates made with flags along the goal line across and after reaching the other end of goal line shoots the ball into a target goal, which was constructed by fixing two flags and moves upward jumps over the first hurdle and then goes underneath the second hurdle and starts dribbling the football along the penalty area line between 7 gates and shoots the ball into the target goal which is constructed at a distance of 25 meters with two flags and runs turning towards the goal line to the finishing point. In one round of the test, the subject covered a distance of 123 meters. The test is to be carried out twice with an interval of 45 seconds between trials. The test is to be performed with football boot.

**Modified Specific Functional Fitness Test:** The modified test will be conducted using the full football field instead of using the penalty area only, as done by Zelenka et. al. All the players in modern football game excepting goal keeper cover equal distance during the game and hence the distance covered by the players in the modified test was increased, as compared to the distance covered in Zelenka's test by using the full football field.

In the modified test, the subject will start from right side of the centre line and sprint forward, slide under a hurdle hundred placed at a distance of 10 meters from centre line and will get up and sprint forward and jump over another hurdle placed in front of the first hurdle at a distance of six meters from the first hurdle and carry the football placed on the ground at a distance of three meters from the second hurdle by dribbling around seven gates (flags) in a zigzag manner, the first gate starting at a distance of five meters and the distance between the gates being one meter and reach the penalty line in front by continuing the dribble and shoot the football into the goal and then sprint back to the centre line and continue moving forward in the other half of the field towards the first hurdle placed on the ground and slide under the hurdle in the same manner as done earlier and get up and run forward and jump over the second hurdle and carry the football placed on the ground by foot, dribbling around seven gates and upon reaching the penalty line, shoot the football into the goal and sprint towards the starting point at the centre line.

The ball skills on the right side will be performed with the right foot and on the left side with the left foot. The time taken to complete one round will be measured and also the pulse frequency immediately on completion of the round. The second repetition of the test will be performed after the rest interval of one minute. The time taken for the second repetition along with the pulse frequently will be noted and also the recovery pulse after first minute, fifth minute and tenth minute on completion of the second repetition.

#### **STATISTICAL ANALYSIS**

The scoring system for field tests was followed as suggested by the experts and the subjects were given two trials for each test and the best score obtained by the

subjects for test was taken as the test score for concerned test and considered for carrying out statistical analysis.

## RESULT

The results have been presented in table no.-1

**Table-1**  
**Mean Score and Standard Deviation of all physical test items of all subjects**

| Level of the Subject | Title of the test | Mean  | S.D. |
|----------------------|-------------------|-------|------|
| University Male      | 3 Hops right leg  | 6.15  | 0.50 |
|                      | 3 Hops left leg   | 6.22  | 0.53 |
|                      | 60 meters sprint  | 6.7   | 0.16 |
|                      | Zig-Zag run       | 15.83 | 0.92 |
|                      | 300 meters run    | 49.56 | 2.95 |
| College male         | 3 Hops right leg  | 6.04  | 0.55 |
|                      | 3 Hops left leg   | 5.99  | 0.49 |
|                      | 60 meters sprint  | 6.9   | 0.41 |
|                      | Zig-Zag run       | 15.80 | 0.86 |
|                      | 300 meters run    | 50.10 | 3.39 |
| College Female       | 3 Hops right leg  | 5.93  | 0.65 |
|                      | 3 Hops left leg   | 5.20  | 0.48 |
|                      | 60 meters sprint  | 7.1   | 0.23 |
|                      | Zig-Zag run       | 16.28 | 0.93 |
|                      | 300 meters run    | 51.05 | 3.96 |
| School Male          | 3 Hops right leg  | 5.97  | 0.63 |
|                      | 3 Hops left leg   | 5.86  | 0.54 |
|                      | 60 meters sprint  | 6.87  | 0.54 |
|                      | Zig-Zag run       | 15.78 | 0.85 |
|                      | 300 meters run    | 50.15 | 3.48 |
| All                  | 3 Hops right leg  | 6.02  | 0.58 |
|                      | 3 Hops left leg   | 5.82  | 0.51 |
|                      | 60 meters sprint  | 6.89  | 0.34 |
|                      | Zig-Zag run       | 15.92 | 0.89 |
|                      | 300 meters run    | 50.22 | 3.45 |

**Table2-**  
**Mean Score and Standard Deviation of all Football skill test items of all subjects**

| Level of the Subject | Title of the test    |                | Mean  | S.D.  |
|----------------------|----------------------|----------------|-------|-------|
| University Male      | Goal shooting        | Number (Score) | 6.37  | 2.67  |
|                      |                      | Time (in sec.) | 20.19 | 1.55  |
|                      | Kicking for distance | Right foot     | 41.68 | 5.98  |
|                      |                      | Left foot      | 33.50 | 11.16 |

|                |                          |                |        |        |
|----------------|--------------------------|----------------|--------|--------|
|                | Ball juggling (in no.)   |                | 103.39 | 110.26 |
|                | Slalom Dribble (in sec.) |                | 11.86  | 1.38   |
| College male   | Goal shooting            | Number (Score) | 5.64   | 2.62   |
|                |                          | Time (in sec.) | 21.11  | 2.43   |
|                | Kicking for distance     | Right foot     | 38.29  | 7.99   |
|                |                          | Left foot      | 33.07  | 8.64   |
|                | Ball juggling (in no.)   |                | 79.05  | 79.47  |
|                | Slalom Dribble (in sec.) |                | 12.10  | 1.12   |
| College Female | Goal shooting            | Number (Score) | 4.64   | 1.64   |
|                |                          | Time (in sec.) | 21.4   | 2.6    |
|                | Kicking for distance     | Right foot     | 36.66  | 7.25   |
|                |                          | Left foot      | 30.75  | 9.02   |
|                | Ball juggling (in no.)   |                | 76.5   | 61.78  |
|                | Slalom Dribble (in sec.) |                | 12.12  | 1.38   |
| School Male    | Goal shooting            | Number (Score) | 4.96   | 2.87   |
|                |                          | Time (in sec.) | 21.39  | 2.60   |
|                | Kicking for distance     | Right foot     | 37.08  | 5.96   |
|                |                          | Left foot      | 29.75  | 6.83   |
|                | Ball juggling (in no.)   |                | 86.31  | 86.22  |
|                | Slalom Dribble (in sec.) |                | 11.89  | 1.39   |
| All            | Goal shooting            | Number (Score) | 5.41   | 2.44   |
|                |                          | Time (in sec.) | 21.02  | 2.29   |
|                | Kicking for distance     | Right foot     | 38.43  | 6.79   |
|                |                          | Left foot      | 31.77  | 8.91   |
|                | Ball juggling (in no.)   |                | 86.31  | 84.43  |
|                | Slalom Dribble (in sec.) |                | 12.03  | 1.38   |

**Table-3**  
**Mean score and Standard deviation of specific functional fitness test developed by Zelenka et. al. of all subjects**

| Level of the players  | Number (N) | Mean  | S.D. |
|-----------------------|------------|-------|------|
| University Level Male | 17         | 39.89 | 1.64 |
| College Level Male    | 20         | 40.96 | 2.12 |
| College level Female  | 18         | 42.42 | 2.05 |
| School Level Male     | 36         | 41.73 | 2.71 |
| All Together          | 91         | 41.25 | 2.13 |

**Table-4**  
**Mean score and Standard deviation of modified specific functional fitness test of all subjects**

| Level of the players  | Number (N) | Mean  | S.D. |
|-----------------------|------------|-------|------|
| University Level Male | 17         | 53.29 | 2.02 |
| College Level Male    | 20         | 53.98 | 1.78 |
| College level Female  | 18         | 57.33 | 3.21 |
| School Level Male     | 36         | 55.48 | 2.02 |
| All Together          | 91         | 55.02 | 2.26 |

**Table-5**  
**Significance differences of Mean scores between various groups**

| Sr. no. | Groups compared                | Value of 't' | Remarks |
|---------|--------------------------------|--------------|---------|
| 1.      | University male & college male | 2.50         | P<0.05  |
| 2.      | University male & School male  | 3.37         | P<0.05  |
| 3.      | College male & School male     | 2.86         | P<0.05  |

#### **DISCUSSION & FINDINGS**

The purpose of the study was to determine the evaluation of Specific Physical fitness test for Football players. It was observed that the performances of the subjects in the modified specific fitness test was significantly correlated with the performances of the subjects with the composite score arrived at for essential football skills and motor abilities of the subjects. The construct validity of the modified specific fitness test was established by analyzing the significance of the differences in mean scores among various experimental groups.

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