

Modifications of Specific Physical fitness test for University Level Football players

Dalbir Singh Randhawa

Football Coach Directorate of Sports Punjabi University Patiala, India

Abstract

The purpose of the study was to determine the Modifications of Specific Physical fitness test for University Level 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 modify the existing specific fitness field test for young football players developed by Zelenka et. al. (1964). For this purpose, the correlation coefficient between the performance of the subjects in the modified test and Zelenka test. The correlation in performance between Zelenka's functional fitness test and the performance in Modified specific Functional Fitness test will enable to evaluate the concurrent validity of the modified test.

KEYWORDS: - Modification, Performance, Fitness, Concurrent, relationship

INTRODUCTION

Soccer, no doubt, is one of the popular sports in India nowadays. The game is found to be so popular throughout the country and is being played at different age levels schools, colleges, universities, industrial clubs, defense units, public sector clubs, professional clubs etc. The soccer in India is promoted by Football Federation, Association of Indian Universities, School games Federation of India etc. The competitions for sub-juniors, juniors and seniors in male and female sections are being organized by the All India Football Federation. Besides these competitions, the competitions are also being conducted by Public Sector undertakings and tournaments are also conducted by clubs. Indian Football teams are participating regularly in Asian competitions and in other international tournaments. Soccer is regarded as an intermittent type sport since it involves "exercises ranging from walking to sprinting and the intensity alter continuously." 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 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. According to **Bangsbo (1993)**, the performance in soccer is determined by the player's physiological, psychological, technical as well as tactical characteristics since they were closely linked to each other. For better evaluating the performance of the players, a bout of research was done to investigate physiological changes during match play. So, many parameters were commonly used for measurement. The following parameters were commonly used for measure the work performed: Maximal Oxygen Uptake, it was frequently used since it, regards to Howley and Powers, was a maximal aerobic power that useful to measure the aerobic capacity.

Far from present, lots of protocol were introduced and developed for assessing the players' physical capacity and performance in soccer (Football). The most common laboratory test was incremental treadmill run test. In one of the studies of **Kemi, Engen,**

Helgerud, Wisoff, (2003), they pointed out that treadmill test was the standard way for testing maximal oxygen uptake of soccer players. However, when comparing when two types, inclined and flat, of treadmill test, inclined treadmill was more likely to allow subject to reach the true maximal oxygen uptake, **Astrand & Rodahi, (1986)**. 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 Modifications of Specific Physical fitness test for University Level Football players.

HYPOTHESIS

Modified specific physical fitness test will have concurrent validity.

METHODOLOGY

The purpose of the study was to determine the Modifications of Specific Physical fitness test for University Level Football players. The Physical Characteristics of the subjects are presented in Table-1.

Table-1
Physical Characteristics and Playing experience of the subjects

Sr. No.	Level of the Subjects	Number (N)		Age		Playing Experience in Years
		Male	Female	Mean	S.D.	
1.	School Level	36	Nil	17.8	+/-0.6	3
2.	College Level	20	Nil	19.7	+/-1.8	4.7
3.	University Level	17	Nil	22.3	+/-0.8	6.1
4.	College Level	Nil	18	21.6	+/-0.56	4.3

PROCEDURE OF TEST:-

The aim of the study was to modify the existing specific fitness field test for young football players developed by Zelenka et. al. (1964) and to establish concurrent validity of the modified test.

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-2

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-3

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-4

Correlation coefficient between the performances in Zelenka test and Modified specific fitness test of Subjects

Relationship between tests	Value of 'r'	Significance
Zelenka test & Modified specific fitness test	0.731	P<0.01

DISCUSSION & FINDINGS

The purpose of the study was to determine the Modifications of Specific Physical fitness test for University Level Football players. It is observed from table-2, that the university level subjects have consumed 39.89 +/- 1.64 seconds, College level male subjects consumed 40.96 +/- 2.12 seconds, college level female subjects consumed 42.42 +/- 2.05, school level male subjects 41.73 +/- 2.71 and all subjects together consumed 41.25 +/- 2.13 seconds in Specific Functional Fitness test developed by Zelenka et. al.

On the other hand in the table-3, the modified specific functional fitness test, 53.29 +/- 2.02 seconds consumed by university level male subjects, 53.98 +/- 1.78 by college level male subjects, 57.33 +/- 3.21 by college level female subjects, 55.48 +/- 2.02 by school level male subjects and all subjects together have consumed 55.02 +/- 2.2 seconds. It is understood from the table-4, that the performances of the university level subjects in

specific functional fitness test developed by zelenka et.al. and modified specific functional fitness test was significantly correlated ($P < 0.01$).

CONCLUSION

The analysis of the results indicate that modified specific functional fitness test has a high concurrent validity. The modified specific functional fitness test is valid for examining the performance of university level football players. This test can be safely put to general use only after judging its technical standards, which involves some technical and statistical steps.

REFERENCES

- Astrand, P. O., & Rodal, K. (1986):** Textbook of work physiology: physiological bases of exercise (3th ed), New York: McGraw-Hil.
- Bangsbo, J. (1993):** The Physiology of Soccer-with special reference to intense intermittent exercise. D.Sc. Thesis, August Krogh Institute, University of Copenhagen.
- Bangsbo, J. (1996):** Yo-Yo tests. Denmark: August Krogh Institute.
- Kemi, O.J., Hoff, L.C., Engen, JU., & Helgerud, U. (2003):** Soccer specific testing of maximal oxygen uptake. Journal of Sports Medicine and Physical Fitness, 43, 139-144.
- Zelenka V. Tintera J. Vyuziti (1964):** Step testu k hodnoceni Stavu fysicke pripravenosti. Sb.ITVS, Praha, 6, 101-106 cited in The Journal of Sports Medicine and Physical Fitness, Vol. 7, No.3, pp.143-147.