



A STUDY OF HEALTH RELATED PHYSICAL FITNESS OF FOOTBALL PLAYERS AT DIFFERENT PLAYING POSITIONS

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ABSTRACT

The purpose of the study was to investigate and compare the Health related fitness of football players at different playing positions. A total of fifty male football players aged ranged 18-25 years from different colleges of West Bengal were selected to participate in the study. Health-related physical fitness was assessed through the sit-and-reach test for flexibility, modified sit-ups test in one-minute for strength/muscular endurance and 12 minute run/walk test for cardio-respiratory endurance and a sum of triceps and sub-scapular skin-folds in actual millimeters was recorded for body composition. . To analyse the Health-related physical fitness parameters of male football players, means, standard deviations, and ANOVA were computed. Results of the study revealed that the cardio-respiratory endurance of the offensive football players was greater than midfielder followed by defensive football players. Abdominal strength and endurance of midfielder in football was found more than offensive followed by defensive football players. The flexibility was found better in offensive football players than midfielder followed by defensive football players. The accumulated fat was greater in defensive football players than offensive football players followed by midfielder players.

Keywords- Health, physical Fitness, Football, Playing positions, Male players

INTRODUCTION

Football, formally known as Association Football, having begun in England in 1848, it is now being played in more than 210 countries throughout the world and more than 150 countries being registered with Federation International de Football Association, the international governing body, which was itself established in 1904. It is considered to be the most popular sport in the world, both in terms of participation, and as a spectator sport. It was estimated that in 1984, there were 60 million licensed, and an equal number of unlicensed players. Since that time, the game's popularity has increased in continents of Africa and Asia.

Football has become one of the most widely played sports in the world (Inkelaar, (1994); Tumilty, D, (1993) and Nabhendra Singh (2010). It is characterized by short sprints, rapid acceleration or deceleration, turning, jumping, kicking, and tackling, (Bangsbo, J and L.Michalsik (2002); Wisloff, U., J. Helgerud and J. Hoff (1998). Football may be played competitively or for fun, as a career, a means of keeping fit or simply a recreational pursuit (Reilly, (1996). Football is popular because of the fact it is a simple game requiring very few equipment and infrastructure. The game consists of two equal periods of 45 minutes, with a fifteen minutes break between. Eleven players from each team will be on the field. The Players may be classified into four categories: goalkeepers, defenders, midfielders, and forwards. During the game, players are required to perform activities like jogging, running (forward, backward and sideways), kicking, turning, heading and throwing. Leonardo et al (2007), having studied the fitness profile of under fifteen years soccer players from Brazil by field position have reported insignificant difference in the field position in 30 meters sprint, Squat jump and counter movement jump.

Football is most popular sport in the world, played practically in every nation at different levels. Football may be played competitively or for fun, as a career, means to keep fit or simply a recreational pursuit (Reilly,1996). Modern football is very fast in its nature. The audiences and the footballer enjoy the game of football with a great amount of joy. It is a game of action and continuous adaptation to change in situations by the team as a whole as well as by the individual players. Although it is a team game, there is an ample room for players to show their intelligence through team play involving improvisation and tactical knowledge.

In recent years, the performance standard of soccer have also developed which led the sports scientists and coaches to find out the various possible ways for further improvement in the field of performance. The difference between the victory and defeat in competitive sports can be a matter of few distance and seconds, some accurate passes and some deadly shots on the target. However, sports performance depends on many factors such as motor abilities, physiological variables, technical abilities, tactical abilities, psychological maturity, kin-anthropometric characteristics, socio economic status and some external factors.

Many factors are important in determining the success of a football player or a team. Football players have to adapt to the physical requirements of the game, which consisted of multi-factorial. Players may not need to have an extraordinary capacity within any one of the areas of physical performance but must possess a reasonably high level within all areas. Morphological characteristics, body composition and somatic dimensions play a vital role in determining the success of an athlete (Carter and Heath, 1990 and Duquet et.al., 2001).

The purpose of the study was to investigate and compare the Health related fitness of football players at different playing positions.

METHODOLOGY

Selection of Subjects:

A total of fifty male football players aged ranged 18-25 years from different colleges of West Bengal were selected to participate in the study. The subjects of the present study were purposively selected from the male football players of different colleges of West Bengal during the year 2015-2016. The mean age \pm SD of defender, midfielder and offender male football players were 19.70 ± 2.40 , 19.27 ± 1.10 and 19.42 ± 1.62 respectively.

Selection of Variables:

A feasibility analysis as to which of the variables could be taken up for the investigation, keeping in view the availability of equipment, acceptability to the subjects and the legitimate time, the following health related physical fitness tests were selected.

Tools Used:

The following tools were used for the purpose of conducting this study:

TABLE.1

TOOLS AND MEASUREMENT UNITS OF TESTS OF HEALTH RELATED FITNESS

S.No.	Fitness Component	Test	Unit of Measurement
1.	Cardio-respiratory endurance,	Cooper's Twelve Minute Distance Run/Walk Test	Distance in Km/Meters
2	Muscular strength/ endurance of abdomen	Sit-Ups Test	Number of sit in 60 Seconds
3.	Flexibility	Sit and Reach Test	cm
4.	Body Composition	Skin-Fold Caliper	mm

Criterion Measure:

Health-related physical fitness was assessed through the sit-and-reach test for flexibility, modified sit-ups test in one-minute for strength/muscular endurance and 12 minute run/walk test for cardio-respiratory endurance and a sum of triceps and sub-scapular skin-folds in actual millimeters was recorded for body composition. .

Statistical Analysis:

To analyse the Health-related physical fitness parameters of male football players, means, standard deviations, and ANOVA were computed. For the computation of collected data, SPSS software 16.0 was used. The level of significance was set at 0.05.

RESULTS

To determine the significance of difference among mean scores of male football players at different playing positions in four components of health related physical fitness components, the mean, standard deviations and One Way Analysis of Variance (ANOVA) were computed and data pertaining to this has been presented in table 2 to 3

TABLE 1
DESCRIPTIVE STATISTICS ON FOUR COMPONENTS OF HEALTH RELATED PHYSICAL FITNESS AND BODY COMPOSITION AT DIFFERENT PLAYING POSITIONS

S.No	Components	Playing Positions	Mean	SD
1	Cardio-respiratory endurance	Defender	2.52	3.71
		Midfielder	2.66	3.14
		Offender	2.76	3.31
2	Muscular strength/ endurance of abdomen	Defender	27.87	4.24
		Midfielder	30.00	3.84
		Offender]	28.17	3.61
3	Flexibility	Defender	17.17	5.45
		Midfielder	19.80	4.41
		Offender	16.83	5.89
4	Body Composition	Defender	20.13	8.69
		Midfielder	17.73	5.39
		Offender	18.83	6.93

The mean scores on health related fitness components and body composition of male football players of West Bengal have been depicted in figure 1 to 4.

Figure 1: Mean Scores of Cardio-respiratory Endurance of Male Football Players at Three different playing Positions

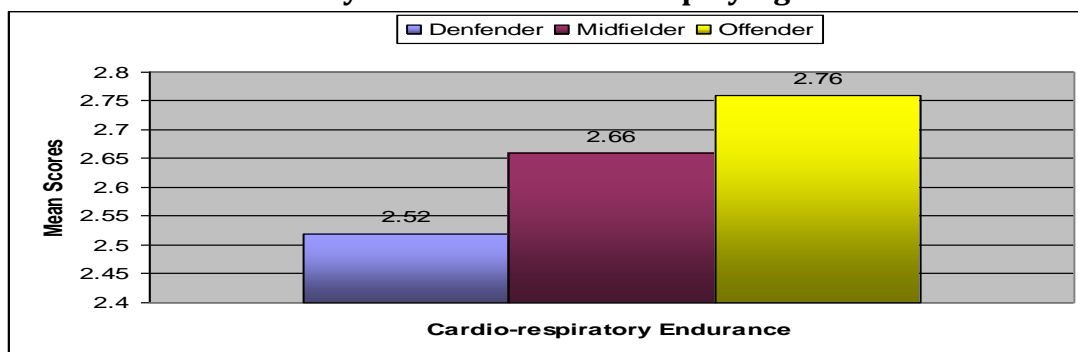


Figure 2 :Mean Scores of Strength and Endurance of Abdominal Muscles of Male Football Players at Three different playing Positions

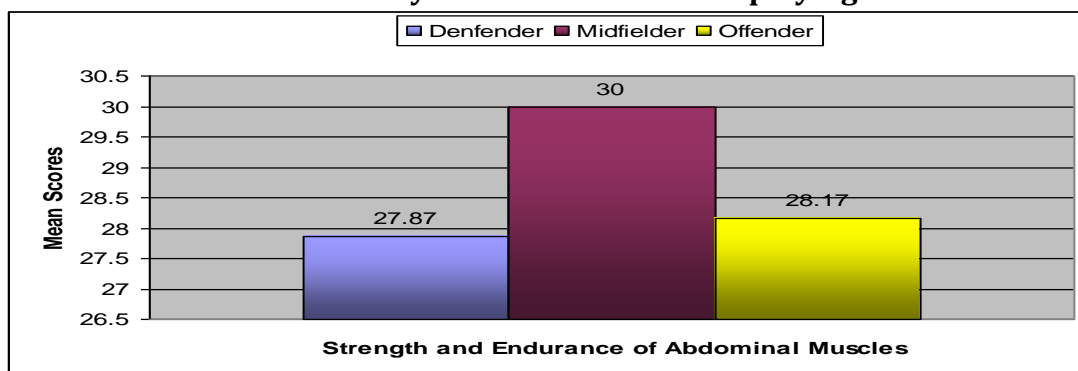


Figure 3: Mean Scores of Flexibility of Male Football Players at Three different playing Positions

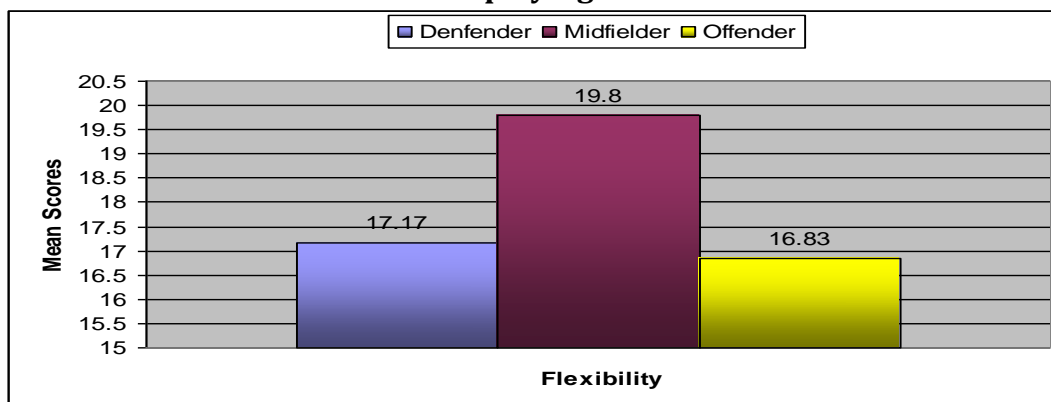


Figure 4: Mean Scores of Body Composition of Male Football Players at Three different playing Positions

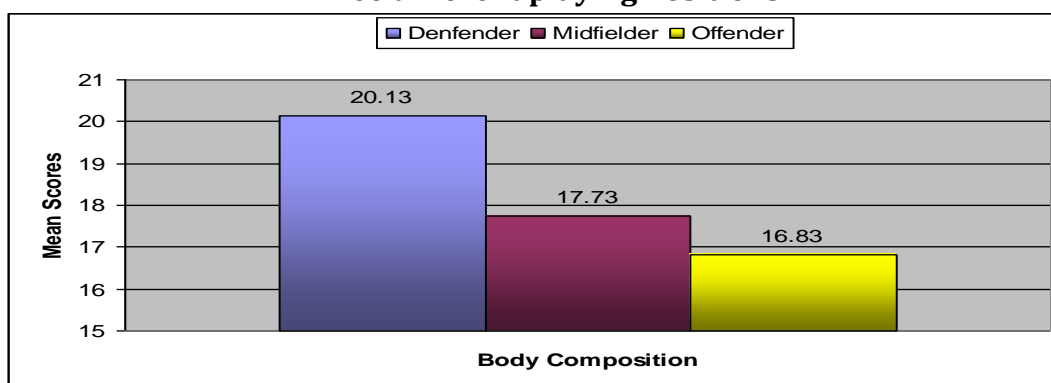


TABLE 7

ANALYSIS OF VARIANCE ON HELATH RELATED PHYSICAL FITNESS COMPONENTS OF MALE FOOTBALL PLAYERS AT DIFFERENT PLAYING POSITIONS

S. NO.	Component	Source of variance	df	Sum of Squares	Mean of Square	F-value
1	12 Minutes Run/Walk	Between groups	2	493370.88	246685.44	2.06
		Within group	47	5618857.12	119550.18	
2	Modified Sit-ups	Between groups	2	43.91	21.95	1.32
		Within group	47	780.28	16.60	
3	Sit and reach	Between groups	2	79.91	39.95	1.44
		Within group	47	1307.37	27.81	
4	Body composition	Between groups	2	102.57	51.29	0.93
		Within group	47	2587.21	55.05	

Insignificant at .05 level

$F_{.05}(2, 47) = 3.18$

It is clearly evident from table 7, that there were no significant differences among male football players at different playing positions on different test of health related physical fitness i.e. 12 minute run/walk, modified sit-ups, sit and reach and body composition, as the obtained F-values of 2.06, 1.32, 1.44 and 0.93 respectively were lesser than the require value of $F_{.05}(2, 47) = 3.18$.

DISCUSSION

Findings of descriptive data of male football players of West Bengal on health related fitness indicated that cardio-respiratory endurance of the offensive football players was greater than midfielder followed by defensive football players. The abdominal strength and endurance of midfielder in football was found more than offensive followed by defensive football players. The flexibility was found better in offensive football players than midfielder followed by defensive football players. The accumulated fat was greater in defensive football players than offensive football players followed by midfielder players.

The results of one way analysis of variance (ANOVA) on four components of health related physical fitness did not expressed variations among male football players of West Bengal. This may be due to similarity in training and coaching, positive feedback, social support and eating habits.

CONCLUSIONS

Within the limitation of the present study, following conclusions were drawn :

1. Cardio-respiratory endurance of the offensive football players was greater than midfielder followed by defensive football players.
2. Abdominal strength and endurance of midfielder in football was found more than offensive followed by defensive football players.
3. The flexibility was found better in offensive football players than midfielder followed by defensive football players.
4. The accumulated fat was greater in defensive football players than offensive football players followed by midfielder players.

RECOMMENDATIONS

The study may be replicated on male football layers at different age groups , which were not taken in this investigation. The study may be replicated on an investigation of dietary habits to determine whether or not there is a correlation between their diet and health related physical fitness as well as anthropometric parameters.

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