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A comparative study of motor fitness components speed and agility between inter-college and inter-university male football players

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Abstract

The purpose of this study is to find out the significant difference of motor fitness components speed and agility between inter-college and inter-university male football players. For the purpose of the present study, fifty (N=50) male subjects representing inter-college and inter-university football players, the age group of 18-25 years were selected as subjects. The subjects were purposively assigned into three groups: Group-A: Inter-College Group (N₁=25) and Group-B: Inter-University (N₂=25). All the subjects were informed about the objective and protocol of the study. The data related to variables of the study was analyzed with help of SPSS (Statistical Package for Social Science) statistical software. To test the hypotheses 't' test was applied. The level of significance set at 0.05 by the tester.

Keywords: motor fitness components speed, football players, SPSS

Introduction

Football is a game that requires skill, speed and many more components to get success in a game or match. Motor fitness variables are the key aspect to perform during the match. Soccer being most competitive sport, a player who is fit does not only enjoy more but he is also capable of using all the skills attained and mastered by him throughout, right from beginning to end of the game. The twin combination of both motor fitness and good physique is indispensable for a player without either of which he will not be able to achieve much, specifically in order to play any ball game competently. Training is an essential part of preparing for sports competition. If training for soccer is to be effective, it must be related to the demands of the game. Fitness for the sport assumes that the player is capable of meeting these demands; otherwise he or she may not be able to cope with the physiological stress of match-play. In this instance the player has to raise fitness levels or risk not being selected. Soccer is the world most popular game and countless research has been conducted on various aspect of this sports. For example- over 3 billion people of worldwide watched the world cup final in France 1998 (MOEINI 1995).

In recent years several professional soccer schools have been established for the education of the young players around the world especially in European countries (Stroyer *et al.* 2004) that indicates creating interest of soccer among youth. In a soccer game, players have to perform various technical and tactical tasks according to their playing position. Athletic performance in soccer is a function of aerobic fitness, anaerobic fitness, speed, muscular strength, muscular power, and agility (Bangsbo, Mohr, Poulsen, Perez-Gomez, & Krstrup, 2006; Stolen, Charmari, Castagna, & Wisloff, 2005). During a match a player frequently performs activities that require rapid development of force, such as sprinting or quickly changing direction (Bangsbo, 1996). Although high-speed actions only contribute to 11% of the total distance covered in soccer, they actually contribute directly to winning possession of the ball and to scoring or conceding of goals (Reilly, Bangsbo & Franks, 2000). High-speed actions in soccer can be categorized into actions requiring acceleration, maximal speed or agility (Gambetta, 1996). Consequently, the SAQ (speed, agility and quickness) method has become dominant in soccer training (Pearson, 2001). Similar morphological and biochemical determinants of acceleration, maximal speed and agility have led to the assumption that these qualities are

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Highly related (Little and Williams, 2005). One way to examine the relationship between linear speed and agility is to determine the degree of correlation. Pauole, Madole, Garhammer, Lacourse, & Rozenek (2000) found significant correlations between performance in an agility t-test and in a 40-yard sprint time in both men and women. Ellena (1960) found the relationship between physiological factors and football performance administered on the footballers in 50 yard dash, right grip, left grip, arm push and pull strength. The criterion measure of the study was the duration computed in minutes played by the footballers during the 1958 football season. Speed correlated 0.60 and total strength 0.40 with the criterion. Both correlations were significant but predictive value for minutes played was little.

The term motor fitness is most often used synonymously with physical fitness by the coaches but it is very important for the physical education students to understand the basic difference between physical fitness and motor fitness. Physical fitness is used to denote only the five basic fitness components (muscular strength, muscular endurance, cardiovascular endurance, freedom from obesity and flexibility), whereas motor fitness is a more comprehensive term, which includes all the ten fitness components including additional five motor performance components (power, speed, agility, balance and reaction time), important mainly for success in sports. In other word, motor fitness refers to the efficiency of basic movements in addition to the physical fitness (Kansal, 1996). In addition motor fitness in athlete make the sportsperson to learn the complexity of the skill off early and use the tactics of the skill very effectively and efficiently to overpower the opponent’s players.

Selection of variables

- Speed
- Agility

Selection of tools

Table 1: Selected Variables and Their Tests.

Sr. No.	Variable	Test
1.	Speed	30 Yard Dash
2.	Agility	Illinois Agility Test

Research findings

Table 2: Mean Values (±SD), Mean Difference and Test Statistics t of Speed between Inter-College and Inter-University Male Football Players.

Group	Mean	SD	Mean Difference	t Value	Sig.
Inter-College	5.80	0.52	0.29	2.165*	0.035*
Inter-University	5.51	0.40			

*Significant at 0.05

The table 2 shows results of the study on the account of Speed. Result showed that the Inter-College Group had recorded higher mean value (5.80) as compared to Inter-University Group mean value (5.51), whereas the standard deviation (SD) of Inter-College Group and Inter-University Group was 0.52 and 0.40 respectively. The calculated value of t’ (2.165) is higher than tabulated value of t’ (2.000) at 0.05 level of confidence. The inter-university level footballers when compared to inter-college level footballers have exhibited statistically significant better with regard to speedy (p≤ 0.05). The graphical representation of the data has been exhibited in (Fig. 1).

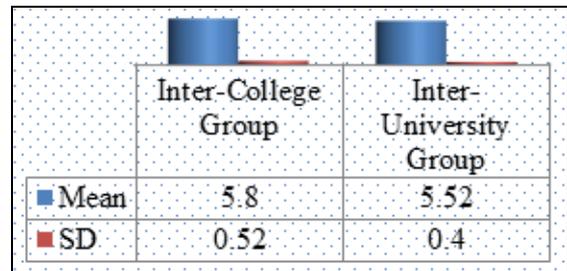


Fig 1: Graphical representation of mean (±SD) scores with regard to Speed between Inter-College and Inter-University Football Players.

Table 2: Mean Values (±SD), Mean Difference and Test Statistics t of Agility between Inter-College and Inter-University Male Football Players.

Group	Mean	SD	Mean Difference	t Value	Sig.
Inter-College	19.63	1.88	1.33	2.340*	0.023*
Inter-University	18.30	2.14			

*Significant at 0.05

The table 2 shows results of the study on the account of Agility. Result showed that the Inter-College Group had recorded higher mean value (19.63) as compared to Inter-University Group mean value (18.30), whereas the standard deviation (SD) of Inter-College Group and Inter-University Group was 1.88 and 2.14 respectively. The calculated value of ‘t’ (2.340) is higher than tabulated value of ‘t’ (2.000) at 0.05 level of confidence. The inter-university level footballers when compared to inter-college level footballers have exhibited statistically significant better with regard to agility (p≤ 0.05). The graphical representation of the data has been exhibited in (Fig. 2).

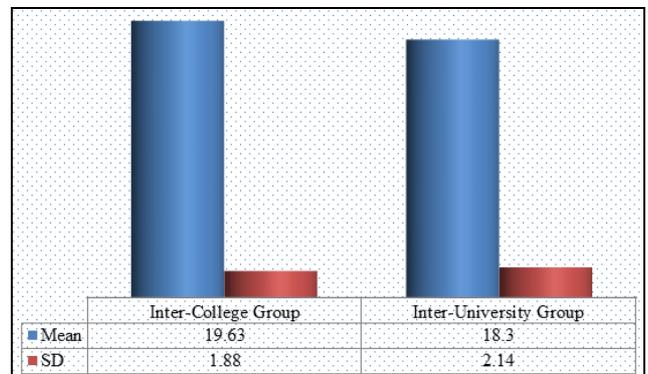


Fig 2: Graphical representation of mean (±SD) scores with regard to Agility between Inter-College and Inter-University Football Players.

Discussion of findings

Student’s t test results shows in tables from 1 to 2 output of comparison of inter-college and inter-university level male football players with regard to speed and agility. It can be summaries that on the variables speed and agility the inter-university group shows significant better than their counter part i.e. inter-college.

The results of speed in the present study is supported by the results of Aranga, P. (2015) [6] as he found significance differences among kho-kho (Men & Women) and kabaddi (Men & Women) players, men kho-kho players were better speed than other categories of players. The results of present study also partially in line with the study of Senthikumar, P. (2015) [10]. As he compare and found significance differences in respect to speed, agility and strength endurance between kabaddi players and kho-kho players.

The results of agility in the present study are supported by the

results of Kumar. P. (2014). He found that Basket Ball players are having good agility compare to Hand Ball Players because the Basket Ball are involved more in short running and agility type of Movements in game. The present result of agility is also partially in line with the study of Anilkumar, N. (2013) ^[11], as he found boxers are better in speed, agility and power than wrestlers & judokas.

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