

Review Article

Study of trunk flexibility and body composition between football and badminton players

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Abstract

The purpose of the present study was an attempt to compare the flexibility (trunk flexibility) and body composition (percentage of body fat, total body fat and lean body mass) between inter-college level male football and badminton players. Fifty (50) male inter-college level football players ($N=25$) and badminton players ($N=25$) ranging between 17 to 25 years were selected randomly from different colleges of Panjab University, Chandigarh for this study. To compare the mean differences between the inter-college level football and badminton players, t tests were computed using SPSS Software. Flexibility (trunk flexibility), and body composition (percentage of body fat and total body fat) were not found to be statistically significant

Key words: Inter-College, Percentage Body Fat, Flexibility.

Introduction

In the modern highly scientific, sophisticated, and technologically developed society sport has assumed multi-dimensional significance and it is better understood today than ever before. Sport has acquired an immense popularity and in view of its scientific organization, it has become a worldwide phenomenon. Besides numerous factors responsible for the dismal performance of sports persons, the physique or body composition, including the size, shape and form plays a significant role.

Flexibility, as a component of physical fitness, is the ability of an individual to move the body and its parts through as wide a range of motion as possible without undue strain to the articulations and muscle attachments. A high level of flexibility fosters a saving in energetic cost during vigorous movement because of the better mechanical adjustment of the joint and muscles, the individual may be less vulnerable to injury. It is also related to other fitness components such as endurance, speed and agility. Flexibility negates tension and thus is a position force in motor ability. Flexibility for sports is more than the maximal lengthening of soft tissues and it is not a posed, static position. It is a very important component of sports performance that can be significantly improved if approached correctly. Body composition makes an important contribution to an individual's level of physical fitness performance, particularly in activities that required one to carry, one's body weight over distance, will be facilitated by large proportion of active tissue (muscles) in relation to a small proportion of inactive tissue (fat).

Methods

In this study, a sample of 50 male players (twenty-five football players and twenty-five badminton players) who participated in Panjab University inter-college tournaments during the session 2007-2008 were randomly selected as subjects. The age was ranged from 17-25 years (see table 1.0 below). To compare the mean difference between the inter-college male football and badminton players on trunk flexibility (Sit and Reach Test) and body composition (% of body fat, total body fat and lean body mass), 't' test was employed with the help of SPSS software (version 11.5). The level of significance chosen was .05. The Sit and Reach Test was used to measure flexibility. Body composition was assessed by taking the skinfold measurement at four sites namely

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biceps, triceps, subscapular and suprailiac (Durnin & Womersley, 1974). The Lange Skinfold Caliper was used to assess percentage body fat.

Results

The results are presented in the following tables.

Table 1.0

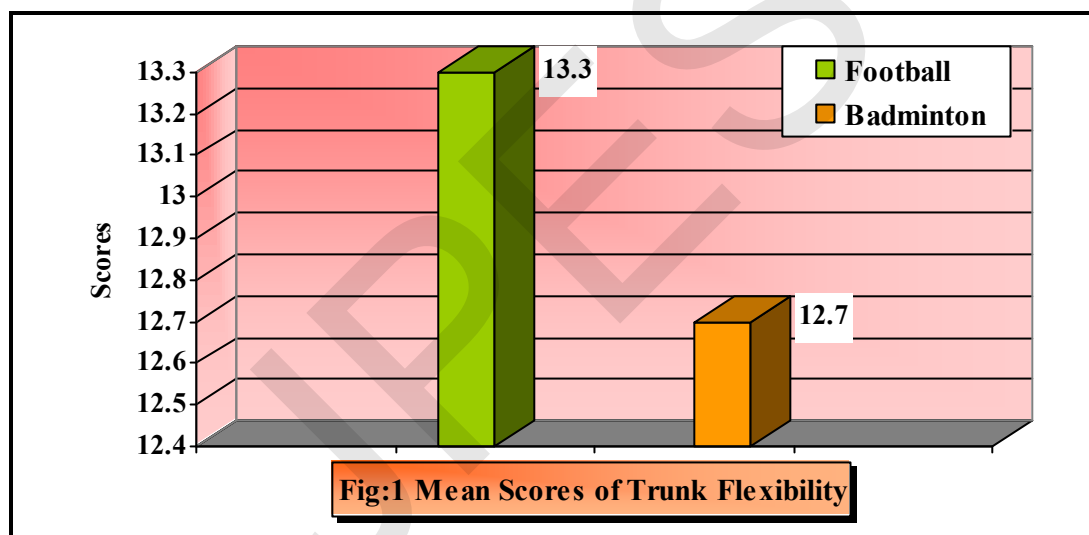
Comparison of Scores on Trunk Flexibility between Male Inter College Level Football and Badminton Players

Variable	Groups	N	Mean	S D	M D	S E	't'
Trunk Flexibility	Football	25	13.30	6.21	0.58	1.80	0.321
	Badminton	25	12.72	6.56			

*Significant at .05 level

$t'_{.05}(48) = 2.02$

It is depicted from the table-1 that the calculated 't' values in case of inter-college football and badminton was not found to be statistically significant as the value obtained was 0.321 whereas, the tabulated value was 2.02 which 48 degrees of freedom at .05 level of significance. Mean scores are shown graphically in Fig.1.



The comparison of percentage of body fat, total body fat and lean body mass between inter-college level male football and badminton players are presented in table-2.

Table2.0

Comparison of Scores on Percentage of Body Fat, Total Body Fat and Lean Body Mass Between Inter College Level Football and Badminton Players

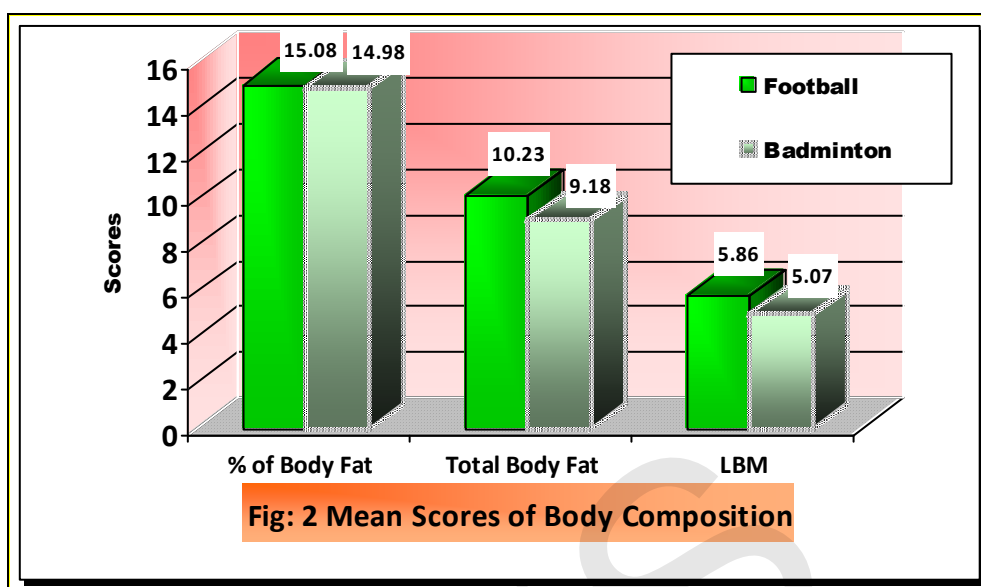
Variables	Groups	N	Mean	S D	M D	S E	't'
Percentage of body fat	Football	25	15.08	4.31	0.10	1.12	0.09
	Badminton	25	14.98	3.64			
Total body fat	Football	25	10.23	4.27	1.04	1.042	1.005
	Badminton	25	9.18	2.98			
Lean body mass	Football	25	55.89	5.86	4.83	1.55	3.117*
	Badminton	25	51.05	5.07			

*Significant at .05 level

$t'_{.05}(48) = 2.02$

Table-2 clearly indicates that there were no significant differences between inter-college level male football and badminton players on the variables of body composition (percentage of body fat and total body fat)

since the value of 't' obtained at .05 level were 0.090 and 1.005. The calculated 't' value of lean body mass (LBM) was found to be statistically significant as the value obtained was 3.117 whereas, the tabulated value of 't' needed to be significant was 2.02 with 48 degrees of freedom at .05 level of significance. Mean scores are shown graphically in fig.2.



Discussion

From the result presented in table-1 and table-2, it has been observed that there was no significant differences on flexibility (trunk flexibility) between inter-college level football and badminton players. In case of flexibility which is very important for the football players as well as badminton players. They need to have more agility and flexibility components apart from speed, strength and endurance. Therefore the flexibility and body composition in both the cases is statistically insignificant because of the identical nature of both the players as well as flexibility is concerned. Another probable reason could be that the sports of football and badminton needs high flexibility which are required while performing certain skills like jump smashing, drop, toss, dribbling etc. in badminton and heading, jumping, quick running, kicking the ball in football and at the same time these required lots of coordination. Henceforth, the levels of flexibility possess by inter college level football and badminton players could not be differentiated.

From the analysis, it revealed that there is no significant differences on body composition (percentage of body fat, total body fat) between inter-college level football and badminton players. In other aspects of body composition (lean body mass) which was considered in this study, statistically significant difference could be observed. It may be attributed to the fact that the nature of the game played in football, the morphological characteristics of footballers are heavy, stout, and sturdy as they have to indulge differently in different positions such as fullbacks and halfbacks, their built is much muscular as compare to forward positioning players when compared with badminton players in these variables the footballers are statistically superior to their counterpart in badminton players.

Conclusion

In the light of the findings and limitations of the present study the following conclusions were drawn: No significant difference was obtained between inter-college level male football and badminton players on flexibility (trunk flexibility).

There was no significant difference obtained between inter-college level male football and badminton players on body composition (% of body fat, total body fat). Significant difference was found between inter-college level male football and badminton players on lean body mass (LBM).

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