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Dr. Pankaj Pandey

Assistant Professor, ASPESSE,
Amity University, Uttar
Pradesh, India

Comparative analysis of selected physical fitness variables of school level hockey and football players

Dr. Pankaj Pandey

Abstract

The study was design to investigate the comparative analysis of selected fitness variable of hockey and football players. For the purpose of this study thirty school boys 14 to 16 years from private sectors of Kanpur district were selected as participant. All participants were assessed and compared on agility, abdominal strength endurance and speed with the help of shuttle run, sit- ups and 50yds. dash test respectively. t-test was used to find the significant difference at the .05 level. The findings of the study revealed that there is significant difference in speed and abdominal strength between the hockey and football players. Gaurav and Singh (2011) concluded study and found significant difference between the means of selected physical fitness variables such as speed, Coordinative ability and endurance between school level football and hockey players.

Keywords: Speed, abdominal strength, Shuttle run

Introduction

Physical fitness is ability to dispose routine work efficiently and to meet unforeseen emergence very effectively. Physical fitness is the capacity to carry out reasonably well various forms of physical activities without being unduly tired and includes qualities important to the individual's health and well-being. Physical fitness of a player depends on the nature of his game and also external conditions. There are a number of fitness elements that need to be developed such as speed, endurance, agility and strength to correct and maintenance of body weight. The general definition of physical fitness is "a set of attributes that people have or achieve relating to their ability to perform physical activity" (U.S. Department of Health and Human Services, 1996). Agility can be improved with agility training drills but also by improving the specific individual fitness elements of speed, balance, power and co-ordination (Benetti, Schneider, & Meyer, 2005). Exercise is an important key for a total fitness, regular exercise is necessary to develop and maintain an optimal health. The origin of football can be found in every corner of geography and history. In England football really began to take step. It all started England. The plays of football need highest level of cardio respiratory endurance. Physical and Physiological characteristics that have been reported as essential for football players are aerobic fitness, muscle strength, high level of speed, explosive jumping power and agility (Arnason A. *et al.* 2004)^[1]. The purpose of study was to find out football and hockey players of agility, abdominal strength endurance and speed.

Methodology

To achieve the purpose 15 hockey players and 15 football players were selected from various convent and public schools of Kanpur city.

Selection of participants

The boys hockey and football players age group of 14 to 16 years of Kanpur district were selected as participant for this study. The participants were selected by simple random method.

Correspondence

Dr. Pankaj Pandey

Assistant Professor, ASPESSE,
Amity University, Uttar
Pradesh, India

Selection of variable

Table 1: The following variables and test were selected for the study.

Variables	Test items	Criterion measures
Agility	Shuttle run	Score recorded nearest 1/10 th of seconds
Abdominal strength endurance	Sit-up	Count 1min sit-ups
Speed	50m. yards dash	Score recorded nearest 1/10 th of seconds

Administration of test

The test was administrated at the sports complex of St. Joseph school the data was collected for each variable by administrating their respective test.

Statistical technique used for analysis of data

To compare the selected physical fitness component of male hockey and football players t-test was applied. The criterion

for statistical significance was set at 0.05 level of confidence.

Result and analysis of data

The findings of the study of each variable are given below:- Mean and standard deviation values on score of agility and the t ratio computed to compare the hockey and football players are given below

Table 2: Mean, Standard Deviation and 't' value for means scores of agility of Hockey and football players

Agility	N	Mean	Std. Deviation	Mean difference	t-ratio
Hockey players	15	12.81	2.02	.11	0.55
Football players	15	12.70	2.57		

It is evident from table 1 that mean and standard deviation score of hockey and football players in agility were 12.81 and 12.70 respectively. The mean differences between the both

groups of calculated t value .550 is less than the tabulated value 2.048. This indicated that there is no difference in the between the agility of hockey and football players.

Table 3: Mean, Standard Deviation and 't' value for means scores of abdominal strength endurance of Hockey and football players

Strength Endurance	N	Mean	Std. Deviation	Mean difference	t-ratio
Hockey players	15	49.50	9.10	2.50	.761
Football players	15	47.00	8.5		

It is evident from tables 2 that mean and standard deviation score of hockey and football players in strength endurance were 49.5 and 47 respectively. The calculated t value .776 is

less than the tabulated value 2.048. This indicated that there is no difference in the between the abdominal Strength Endurance of hockey and football players.

Table 4: Mean, Standard Deviation and 't' value for means scores of speed of Hockey and football players

Speed	N	Mean	Std. Deviation	Mean difference	t-ratio
Hockey players	15	24.06	2.71	8.2	2.20
Football players	15	15.86	3.18		

It is evident from table 3 that means and standard deviation score of hockey and football players in speed were 24.06 and 15.86 respectively. The obtained value is greater than the tabulated value 2.04. This indicated that there is difference between the speed of hockey and football players.

Discussion and conclusion

Findings of the present study pertaining to the agility and abdominal Strength Endurance were found to be similar. There is no difference between the hockey and football players in relation to the agility and abdominal Strength Endurance ability of junior level players. In relation to the speed both hockey and football players were found difference and hockey players were found more efficient than the football players. Results were found that junior hockey players were more efficient in speed ability. The above results conform with that Jakovljevic (2011) [5], Harrison AJ (2009) [4] and Castagna (2008) [2].

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