

A Comparative Study of Physical Fitness Components Among National Level Hockey and Football Players of Rajasthan

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Abstract

For Hockey and Football players Speed, Strength and Endurance are the important variables according to the Sports Science. Keeping in view the concept, this study was taken to compare the level of Physical Fitness between Hockey and Football players. Total number of 40 National level (20 each) Football and Hockey player of Rajasthan. The age of subjects ranged between 18 to 28 years.

Data of Physical Fitness Components between Football and Hockey players was compared by using T Test. The level of significance was kept at 0.05 level of significant. The result of the study revealed that there was No significant difference between the Speed, Strength and Endurance of Rajasthan national level Hockey and Football players.

Keywords: Speed, Strength and Endurance

1. Introduction

In the modern era of scientific knowledge one is progressing rapidly in all areas of life including games and sports. Progress in games and sports can be attributed to the introduction of science in the workings of men and women, advanced scientific and specific methods of training and better understanding of the human body: Performance in many sports is determined by factors such as physical fitness, techniques and tactics, the strength of which goes with it varies depending on the sport. Football and Hockey is one of the most popular sports in the world. Football and Hockey as a highly competitive sport, a physically fit player not only enjoys more but also is able to use all the skills acquired and honed throughout the game, from start to finish.

1.1 Delimitation -

The study was also delimited to the following –

- ❖ Speed
- ❖ Strength
- ❖ Endurance

1.2 Limitation -

This study was limited in the following ways -

1. The study will be limited to 20 Football players of National level and 20 Hockey players of National

players of Rajasthan.

2. The study will be limited National state & level players of 20 to 28 years age groups

1.3 Hypothesis -

There will be no effect of speed, strength & endurance on Football and Hockey National level players.

Materials B methods-

2.1 Selection of variables -

- ❖ Speed
- ❖ Strength
- ❖ Endurance

2.2 Criterion Measure -

Speed - It was studied in respect to time taken in second (to the nearest 1\100th of a second) to cover a distance of 50 meters.

Strength - Strength was measured as the horizontal distance covered in meters and centimeters between the take-off line and the nearer break made in landing by using standing broad jump.

Endurance -600 meter run for Endurance. It was measured in minutes or seconds.

2.3 Administration of the tests -

2.3.1 Speed (50 Meter Run) -

Objective: - To measure the Speed of the performer

Equipment: - stopwatches and clappers.

Procedure -The subjects were required to take position behind the starting line. At the command 'go!' the timers switched on their respective stopwatches and the subjects started their sprints. As soon as the subjects crossed the finish line, the respective timers switches off their stopwatches and recorded the time accurately up to 0.01 second. Only one correct trial was permitted.

Score- The time elapsed from the start to the instant the subject crossed the finish line, was the score expressed in 1/ 10thof a second

2.3.2 Strength (Standing Broad Pump) -

Objective -To measure the explosive power of the legs

Equipment - tape measure to measure distance jumped, non-slip floor for takeoff , and soft landing area preferred. Commercial Long Jump Landing Mats are also available. The take off line should be clearly marked.

Procedure - The athlete stands behind a line marked on the ground with feet slightly apart. A two foot take-off and landing is used, with swinging of the arms and bending of the knees to provide forward drive. The subject attempts to jump as far as possible, landing on both feet without falling backwards. Three attempts are allowed.

Score -The measurement is taken from take-off line to the nearest point of contact on the landing (back of the heels). Record the longest distance jumped, the best of three attempts and the score was measured in meter and in cm to the nearest cm were recorded as the score.

2.3.3 Endurance (600 meters run) -

Objective -To measure the endurance of the performer in running.

Equipment -Two stopwatches and clappers.

Procedure - To measure the endurance (cardio-respiratory) the 600 meter was used. The test was conducted on a 400 meter track and one same regulation were followed as to conducted 600 meter run on

the track. The subjects ran one and half rounds of the track and the time was recorded in minute and seconds. Subjects were given a start from a common curved line.

Score -The score was recorded in minute and seconds.

3. Statistical Techniques used -

For the present study, the mean value, standard deviation and ‘t’ test were applied to analyze of the data.

4. Results and discussion -

Table 1 - Comparison of speed component of football and hockey National level players of Rajasthan (50 meter Run)

Physical variables	Games	N	Mean	Std. Dev.	't' Value
Speed	Football	20	6.6935	0.2804	0.7905
	Hockey	20	6.2280	0.2423	

significant at 0.05 level.

Table 2 - Comparison of Strength component of Football and Hockey National level players of Rajasthan (standing broad jump)

Physical variables	Games	N	Mean	Std. Dev.	't' Value
Strength	Football	20	2.1500	0.0387	-1.515
	Hockey	20	2.242	0.0714	

significant at 0.05 level

Table 3 - Comparison of Endurance component of Football and Hockey National level players of Rajasthan (600 meter Run)

Physical variables	Games	N	Mean	Std. Dev.	't' Value
Endurance	Football	20	1.5110	0.0469	0.56
	Hockey	20	1.5025	0.0490	

significant at 0.05 level.

The mean score of the Speed & Endurance 6.628 & 1.5025 of National level Football players are lower than Hockey players which are 6.6935 & 1.511 of respectively. And the mean score of Strength 2.2425 of National level Football players is higher than Hockey level player which is 2.215. However, the t-ratios are speed, strength & endurance respectively 0.79055, -1.515 and 0.56 which are not significant at 0.05 level.

Conclusion

On the basis of findings for the study the following conclusions is made that Table also reveals that calculated value of speed, strength and endurance are less the tabulated. It infers that there are no significant between the speed, strength and endurance of National level Football and Hockey players of Rajasthan.

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