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Selected motor fitness components of inter university and national male hockey players of Jammu and Kashmir

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Abstract

The purpose of the study was to compare selected motor fitness components inter university and national male hockey players of Jammu and Kashmir. For the present study, 15 players who represented Jammu university male players in 2017 were selected while as 15 players who represented Jammu and Kashmir at National were selected. The age of the subjects ranged between 18- 24 years. The study was confined to selected motor fitness components namely speed, abdominal strength, agility and cardiovascular endurance. The data were recorded by different tools/tests like 50 meter dash, sit ups, shuttle run (4×10 m), and 600 meter run as prescribed in Test Evaluation Accreditation Measurements and Standards by Kansal (2018). To find out the significance difference between hockey and hockey male players on selected motor fitness components, 't' test was applied at 0.05 level of significance. The results of the study revealed that there was significance difference attained on speed and agility. Players were performed better than hockey players in speed and agility. There was no significant difference obtained on abdominal strength and cardiovascular endurance. Keywords: Abdominal strength, agility, cardiovascular endurance, speed.

Keywords: Fitness, components, national male hockey

Introduction

The term physical fitness and motor fitness are often used for each other. Motor fitness is a limited phase of physical fitness, and can be more concretely defined as a readiness or preparedness for performance with special regard for big muscle activity without undue fatigue. It concerns the capacity to move the body efficiently with force over a reasonable length of time (Kamlesh, 2011) [3]. Hockey is probably the world's most popular sport played in practically every nation at varying levels of competence (Reilly, 1995) [8]. Hockey is very popular sport and played in most of the countries. In hockey a player require an appropriate level of health related physical fitness and motor fitness to play these sports. To perform the basic skills of these sports like dribbling, shooting, juggling, passing etc. in a precise and quick manner motor fitness is very important. Motor abilities contribute independently and interdependently for successful performance of skill (Barrow and McGee, 1979) [2]. Any dynamic sports skill performance is directly related to motor fitness level of the player. For the betterment of the players, it is very necessary to know their motor fitness level for further making appropriate strategies to improve it. Sen and Bhagat (2013) [9] conducted a study on 128 male players (64 hockey, 64 hockey) of school state level to know the differences in their selected motor fitness components i.e. strength (upper body, abdominal, explosive), agility, speed and endurance. The results of the study revealed that the hockey players were significantly better than hockey players in abdominal strength. But the hockey players were significantly better in explosive strength than hockey players. No significant differences were observed in upper body strength, agility, speed and endurance between hockey and hockey players. Singh (2015) [13] compared the volleyball and handball players, who participated in interuniversity tournament, on the selected physical fitness variables (endurance, agility, flexibility and explosive strength). The final results indicated that the explosive strength was significantly higher in volleyball players than handball players but the flexibility was significantly higher in handball players than volleyball players.

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There was no significant difference found in endurance and agility between volleyball and handball players. Ajayaghosh (2017) ^[1] carried out a study to compare the intercollegiate hockey and hockey male players on selected physical fitness variables i.e. speed, agility and lower body strength. The results showed that the hockey players were significantly better than hockey players on all the selected physical fitness variables. Singh (2017) ^[11] investigated selected motor fitness components (explosive strength, speed, endurance, agility and flexibility) between inter-college and inter-university male Kabaddi players. Researcher found that the interuniversity level players were significantly better in explosive strength, speed, agility and flexibility than intercollege level players. However, no significant difference was observed in endurance. Singh and Kumar (2018) ^[10] explored the difference on selected physical fitness components i.e. speed, explosive leg strength and cardiovascular endurance between inter college level hockey and hockey players of Punjabi University, Patiala. The researchers concluded that the hockey players were significantly better in speed, explosive leg strength and cardiovascular endurance as compared to hockey players. Shukla, Dogra, Pant and Chakraborty (2020) ^[14] compared physical fitness variables i.e. muscular endurance, muscular strength, speed and agility among soccer, cricket and hockey intercollegiate male players. The results indicated that there were no significant differences existed among all team game players in muscular endurance, speed and agility. But significant differences were found among all team game players in muscular strength. Cricket players had better muscular strength as compared to hockey and soccer players. On the basis of available literature present study was conducted with given Objectives.

The study was carried out with following objectives

1. To compare the National and Interuniversity male players on speed.
2. To compare the National and Interuniversity male players on abdominal strength.
3. To compare the National and Interuniversity male players on agility.
4. To compare the National and Interuniversity male players on cardiovascular endurance.

Methodology: Sample For this study, 15 inter University level male players of the various colleges in Chandigarh affiliated to University Of Jammu, Jammu and Kashmir during 2016 session and 15 players who participated national games on the same years were selected by using purposive sampling technique. Age of the subjects was ranging between 18 to 24 years. Variables and Tools The study was confined to the following selected motor fitness variables and tools Motor Fitness Variables Tools Used Speed 50 meter dash Abdominal Strength Sit ups Agility Shuttle run (4×10m) Cardiovascular Endurance 600 meter run Administration of tools All the tools used in this study were administrated as prescribed in Test Evaluation Accreditation Measurements and Standards by Kansal (2018). 50 meter dash: It was used to measure the speed. A starting line and a finish line were marked in the ground. After the warm up, the subjects were instructed to take the standing position behind the starting line in pairs. The starter gave a start with the help of a clapper. In case the subject started before the clapper sound, was asked to restart. As the subjects crossed the finish line, the respective time keeper switched off is stopwatch. The time was noted down in ten thousandth of a second.

Sit ups: This tool was used to measure abdominal strength. The subject was instructed to lie on back with knee bent less than 90 degree, feet on the floor with heels not more than 12 inches from the buttocks and hands with fingers clasped behind the neck. The subject was asked to bring his head and elbows forward by tightening the abdominal muscles and to touch the elbows with knees. This process counted as one sit up. A demonstration of the stance and execution of sit up was given to the subjects. The tester recorded the correctly executed number of sit ups in 60 seconds by the subject.

Shuttle run: It was used to measure the agility of the subjects. Two parallel lines were marked 10 meter apart on the ground and two small wooden blocks were placed behind the line opposite to the starting line. As the starter commanded, the subjects started running towards the wooden blocks, picked up one block, to run back to the starting line, placed the block behind the starting line and then he again to run, picked the second wooden block, came back to the starting line. As he placed the second block on the ground, the time keeper stopped the watch and time was recorded in ten thousandth of a second.

600 meter run: This tool was used to measure cardiovascular endurance. It was conducted in athletic track. The subjects were instructed to take a standing start position behind the starting line in a group of 8 to 10 persons. The groups were already formulated by the tester. As the starter gave a start the time keepers switched on their watches and when the subjects crossed the finish line, the respective time keepers recorded the time in minutes and seconds.

Statistical techniques used to find out the significance difference between hockey and hockey male players of intercollegiate level on motor fitness variables namely speed, abdominal strength, agility, cardiovascular endurance. 't' test was applied at 0.05 level of significance. Findings of the study shows the mean, standard deviation and t-value of intercollegiate level hockey and hockey male players on selected motor fitness components Variables.

Table 1: Shows the Group Mean SD 't' of interuniversity and national Hockey players

Variables	No of Subjects	Group	Mean	SD	t
Speed	15	Inter University	6.34	0.45	2.67
	15	National	7.45	0.56	
Agility	15	Inter University	12.19	2.42	1.73
	15	National	13.23	1.51	
Cardio vascular Endurance	15	Inter University	2.15	0.456	2.71
	15	National	2.96	0.912	
Abdominal strength	15	Inter University	43.40	5.67	0.83
	15	National	47.51	6.67	

After analysis of data the mean for variable speed, was calculated as 6.34 and 4.45, Standard deviation 45 and 0.56 when t test was applied the values was calculated as 2.67, which was * Significant at .05 level.

The mean for variable Agility, was calculated as 12.19 and 13.23 Standard deviation 2.42 and 1.51 when t test was applied the values was calculated as 1.73, which was not * Significant at .05 level.

The mean for variable cardio Vascular Endurance, was calculated as 2.45 and 2.56, Standard deviation 0.45 and 0.91 when t test was applied the values was calculated as 3.45, which was * Significant at .05 level.

The mean for variable Abdominal Strength, was calculated as

43.40 and 47.51 Standard deviation 5.67 and 6.67 when t test was applied the values was calculated as 0.83, which was * Significant at .05 level.

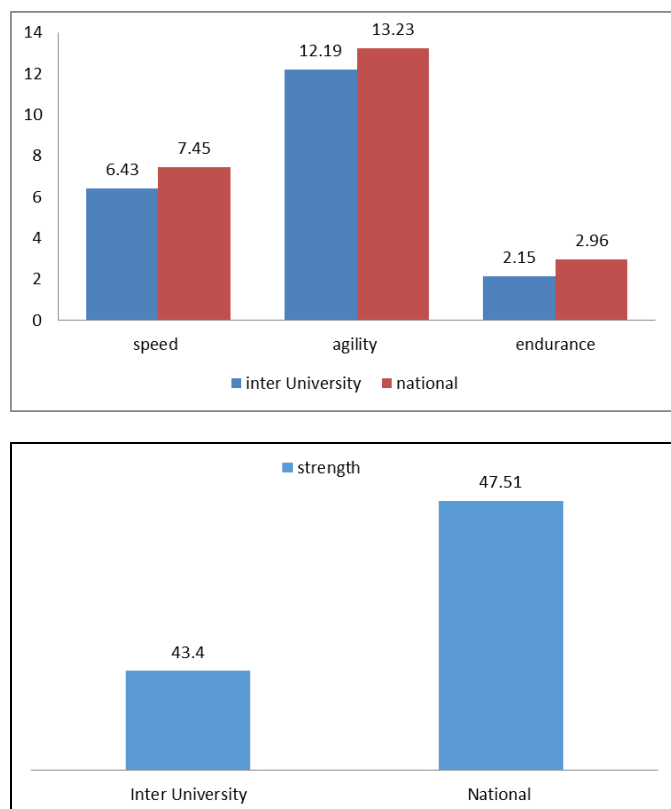


Fig 1: Graphical representation of speed, Agility Endurance and Abdominal Strength

Discussion of the findings the findings of the study clearly showed that there was a statistically significant difference inter university and national male players in speed. The inter university hockey male players had more cardiovascular endurance than national hockey players. In agility and abdominal strength their was no significant difference was found. This finding is supported by Pandey and Sardar (2015) [6], Pawar (2016) [7], Ajayaghosh (2017) [1] and Singh and Kumar (2018) [10] in their studies. Hockey players had significantly more agility. This finding is supported by the studies of Muralirajan and Sudarsan (2015) [5] Singh and Kaur (2016) [12] and Ajayaghosh (2017) [1]. The surface for interuniversity was mostly used as Astor-Turf thus sport is very fast and exhaustive. These may be the reasons behind that interuniversity player has more speed and endurance as compare to national hockey The finding on cardiovascular endurance is supported by the study of Sen and Bhagat (2013) [9].

Conclusions

A statistically significant difference was observed in speed and cardiovascular endurance between Inter University Hockey and National hockey male players. Inter university Hockey players performed better than national hockey players in speed and Cardiovascular Endurance. A statistically insignificant difference was observed on abdominal strength and agility.

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