COMPARATIVE INVESTIGATION OF ANTHROPOMETRIC PHYSICAL FITNESS AND SKILL MEASUREMENTS OF SELECTED HOCKEY PLAYERS OF UTTAR PRADESH

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ABSTRACT

The purpose of the study was to compare selected Physical Fitness components, Skill Level and Anthropometric Measurements among selected hockey players. For the study, total forty male hockey players were selected from following places of Uttar Pradesh i.e. Lucknow, Varanasi, Saifai, and Shajahanpur. Ten players from each city were selected through purposive sampling technique. The Anthropometric measurements were taken on each subject using standard methodology given by Weiner and Laurie (1969) which were Height (cm), Weight (kg) and Body Mass Index. The selected Physical fitness test items used for the study were- Pull ups and Shuttle run. And for skill level, SAI hockey skill test was used. The only selected item from the hockey skill test was shooting the target. Analysis of Variance was used to find out the significant difference in selected physical fitness, anthropometric and skill test variables among the players. The results in relation to Anthropometric measurements i.e. height, weight and BMI were found almost similar in all players of different selected places. Statistically, result was found insignificant but Varanasi hockey players were found taller as compare to other selected places. In selected Physical fitness i.e. arm and shoulder strength and speed were found significant. Post hoc test indicate Shajahanpur players were better in arm and shoulder strength as compared to Varanasi and Lucknow hockey players. In level of selected hockey skill i.e. ball shooting ability, no significant difference was found among all.

Key Words: *Anthropometric Measurement, Skill Test and Physical fitness.*

INTRODUCTION:

India has the pride to win Olympic title eight times which no other country in the world has won. After India, it is Pakistan which has the pride to lift the title three times in 1960, 1968 and 1984 with Silver Medal three times in 1956, 1964 and 1972. India failed to qualify for 2008 Olympics for the first time in the history of 80 years of men's hockey and Germany had won title in Beijing Olympic 2008. There have been glorious patches of sunlight in the generally cloudy landscape of Indian sports. India reigned supreme in the game of male hockey for decades

together. The performance of the player is totally depending on physique of player which is concerned in the field of anthropometric.

Anthropometry is the systematic collection and correlation of measurements of the human body. Anthropometry has been used to assess gross structure and function, including body size, shape, and proportion and body composition. Anthropometry is an important technique in the field of public health and nutrition.

Physical fitness is the basic requirement for most of the task to be under taken by individual in his sports. Many scientific studies over the past twenty year support the value of regular exercise as part of a healthy life style and bright career in sport world. Today players have a much broader perspective and consider physical fitness to be a key component of total health. Physical fitness is the ability to perform activities that require muscular coordination such as walking, running, playing and manipulating instrument and machinery. The poor performance of the Indian hockey team at the international competitions has been of great concern, especially to the coaches, physical Educationists and sports scientists. Efforts have been made to improve the standard of our sportsperson since long, however a little success has so for been achieved in this respect. There are number of factors which are responsible for the performance of a sportsperson. The physique including the size, shape and form are known to play a significant role in this regard. The performance of sportspersons in any game or event is also dependent on his suppleness, skill, training, motivation and on various other factors of physiological and biochemical nature. So investigator had tried to touch such hidden facts, which will promote the level of junior hockey that is become future of International level.

METHODOLOGY:

For the purpose of the study of forty male hockey players were selected from following places of Uttar Pradesh i.e. Lucknow, Varanasi, Saifai, and Shajahanpur. Ten players from each city were selected through purposive sampling technique. The following Anthropometric measurements were taken on each subject using standard methodology given by Weiner and Laurie (1969).Height (cm), Weight (kg) and Body Mass Index. The following test items were used for data collection: (AAHPER) Pull ups and Shuttle runs. For skill level, SAI hockey skill

test was used. Selected item from the hockey skill test was shooting the target.(Kansal 1996). Analysis of Variance was used to find out the significant difference in selected physical fitness, anthropometric and skill test variables among the players.

RESULTS:

Table 1
Analysis of variance among male hockey Players related on selected anthropometric variables

Hockey Groups (Cities)	N	Mean			SD.			df	F. Ratio		
		Ht.	Wt.	BMI	Ht.	Wt.	BMI		Ht.	Wt	BMI
Lucknow	10	168.03	59.70	21.15	5.26	4.88	1.51	36	2.03	.30	.96
Varanasi	10	169.78	61.40	21.48	5.18	6.55	2.23				
Saifai	10	163.79	59.29	22.31	6.73	5.66	1.77				
Shajahanpur	10	167.89	59.10	20.99	5.18	6.60	1.96				

sig.0.05 (4, 36) = 2.63

The results depicted in table1 shows that the Comparison among male hockey players the mean values of Height were 168.03, 169.78, 163.79 and 167.89 cm, the mean values of Weight were 59.7, 61.4, 59.29 and 59.1 kg, respectively and the mean values of Body Mass Index were 21.15, 21.48, 22.31 and 20.99 respectively. The statistical results were found to be insignificant at 0.05 levels (F= 2.03, 0.30 and 0.96).

Table 2
Analysis of variance among male hockey Players related on selected physical fitness variables
i.e. arm and shoulder strength & Speed

Hockey Groups (Cities)	N	Mean		SD.		df	F. Ratio	
		Arm & Shoulder strength	Speed	Arm & Shoulder strength	Speed		Arm & Shoulder strength	Speed
Lucknow	10	9.6	8.37	3.53	0.46	36	4.81*	8.75*
Varanasi	10	6.3	7.87	3.11	1.12			
Saifai	10	8.1	6.99	2.18	0.39			
Shajahanpur	10	11.3	7.02	4.00	0.66			

Post hoc Test of Arm & Shoulder strength And Speed		
Lucknow V/S Varanasi	Lucknow V/S Saifai	Lucknow & Shajahanpur
3.30 &0.50	1.50 & 1.38	1.70 &1.34
Varanasi V/S Saifai	Varanasi VS Shajahanpur	Saifai V/S Shajahanpur
1.80 &.87	5.00 & .84	3.20 & .03

 The result in table 2 shows that the Comparison among male hockey academies related to arm and shoulder strength. The statistical result was found to be significant at 0.05 levels (F- 4.81).

 The post hoc test indicates that Shajahanpur hockey academy players were found better in arm and shoulder strength as compare to Varanasi and Saifai Hockey players. (t=, 5.00 and 3.20) respectively. Lucknow hockey players were better in arm and shoulder strength as compare to Varanasi hockey players. (t=3.30).

 The result in table also shows the Comparison among male hockey players related to speed. The statistical result was found to be significant at 0.05 levels (F- 8.75). The post hoc test indicates that Saifai hockey players were found better in speed as compare to Varanasi and Lucknow Hockey players. Shajahanpur hockey players were also better in speed as compare to Lucknow and Varanasi Hockey players. (t = 1.34 and .84) respectively.

Table 3

Analysis of variance among male hockey academies related on skill variable ball shooting ability

Groups	N	Mean	SD	ANOVA			
Hockey Groups (Cities)				SS BG	SS WG	df	F. Ratio
Lucknow	10	0.1	0.31	2.47	13.50	36	2.20
Varanasi	10	0.1	0.31				
Saifai	10	0.2	0.42				
Shajahanpur	10	0.7	1.05				

The results depicted in table shows that the statistical result was found to insignificant at 0.05 levels (F- 2.20).

CONCLUSION:

The results of the present study indicated that significant and insignificant difference among hockey players of Uttar Pradesh, in relation to Anthropometric measurements i.e. height, weight and BMI were found almost similar in all players of different selected places. Statistical result was found insignificant but, Varanasi hockey players were found taller as compared to other selected places.

In selected Physical fitness i.e. arm and shoulder strength and speed were found significant. Post hoc test indicated that Shajahanpur players were better in arm and shoulder strength as compared to Varanasi and Lucknow hockey players.

In level of selected hockey skill i.e. ball shooting ability no significant difference was found among the players.

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