A Comparative Study Of Selected Physical Fitness Components Of School National, Junior National And Khelo India Academy Level Hockey Goalkeeper

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ARTICLE INFO	ABSTRACT
	The primary aim of the study was to compare the physical fitness components of School National, Junior National and Khelo India Academy hockey Goalkeepers. A total of Sixty (N=75) male hockey players who volunteered for the present study had participated in the SGFI 2023-24, Gwalior, Junior National Hockey Championship 2018, Rourkela and Khelo India Academy, Gwalior with age 14 - 18 years. The following variables were measured in all groups: speed, agility, reaction time through the administration of 50 meter dash, T-Test agility, Ruler drop test. The one way ANOVA was used in 0.05 levels of significance. For analysis of data, SPSS (version 16) software was used. The results revealed significant difference were found in Agility (F= 5.52) among selected subjects whereas insignificant difference in speed and reaction time among hockey goalkeeper.
	Key Words*: Motor fitness, Speed, Agility, Hockey, Goalkeeper.*

INTRODUCTION-

Hockey is a popular sport played in more than 132 countries. Hockey is played with 11 player's a-side (with a maximum of 5 extra players who can be substituted) on a rectangular, 91.40 meters long side-lines and 55 meters wide back-line. The rules of the game allow unlimited substitutions. Unique to field hockey is the semi-crouched position in which players move a large percentage of the match or training session. Today hockey is essentially a team game and has developed into a fast and highly skilful one. The game includes short bursts of speed with rest pauses or slow movements in between for a period of four quarters of 15 minutes with an interval of 2 minutes between quarter 1 and 2 and between quarter 3 and 4 and a half-time interval of 5 minutes between quarter 2 and 3.

The goalkeeper is probably the single most important player on the field and should be trained as such. The training of goalkeepers on a team cannot be an addition. It is a very specialized position requiring special attention and training. It is job of coach to contrive a safe, productive, and positive learning environment for the keeper.

The goalkeeper needs as much mental, physical, technical, and tactical preparation as the field player. A goalkeeper must be capable to block or save all types of shots, shots that can travel at speeds in excess of 90 miles per hour. At times the goalkeeper has to dive through the air or on the ground. They may even have to stop a one-on-one situation.

A goalkeeper in full gear is the only player allowed to use her hands, feet, and body to play the ball, and she may do so only within her team's own shooting circle. Comfortable protective equipment prevents injuries and instils confidence. Goalkeepers who rely on incredible reflexes, outstanding agility, and an massive desire to perform must also be totally protected.

Selection of hockey goalkeeper is always a matter of difficulty among coaches. Goalkeepers have a different role on the field training also different from other players. With view of this study conducted on school level, Khelo India acadmy and Junior national level goalkeepers.

Objective of study-
1. To compare mean scores of speed of school level, Khelo India academy, Junior national.
2. To compare mean scores of agilityof school level, Khelo India academy, Junior national.
3. To compare mean scores of reaction time of school level, Khelo India academy, Junior national.

Hypothesis-
1**.** There is no significant difference among mean scores of speed of school level, Khelo India academy, Junior national.
2. There is no significant difference among mean scores of agilityof school level, Khelo India academy, Junior national.
3. There is no significant difference among mean scores of reaction timeof school level, Khelo India academy, Junior national.

PROCEDURE AND METHODOLOGY

In the present study a sample of 75 male national level junior hockey goalkeepers of 14-18 years selected (Total=75 players). Selected physical fitness variable were Speed, Agility and reaction time. To measure speed, 50 meter dash, For agility, T-test and for reaction time, Ruler drop test administered. For the analysis of data, collected by administering various tests to all the subject's One Way ANOVA (Analysis of Variance) was employed at 0.05 level of significant.

Variables	Tests and Tools	Measuring unit
Speed	50 meter Dash	Seconds
Agility	T Agility test	Seconds
Reaction time	Ruler drop test	Centimetre

Objective 1:-To compare mean scores of speed of school level, Khelo India academy, junior national.

Hypothesis: - There is no significant difference among mean scores of speed of school level, Khelo India academy and junior national.

Table 1.1 : Descriptive statistics of speed of National level junior hockey goalkeeper of different level

GROUPS	Mean	Std. Deviation	N
School level	7.3040	1.15235	25
Khelo India academy	7.3876	1.27116	25
Junior national	9.8080	6.85905	25

As per Table 1.1 descriptive statistics of speed of National level junior hockey goalkeeper presented. Mean and SD score of school level (7.30, 1.15), Khelo India academy (7.39, 1.27), Junior national (9.80, 6.85).

Table 1.2 : Result of One way ANOVA of speed of National level junior hockey goalkeeper of different level

Source	Type III Sum of Squares	df	Mean Square	F	Partial Eta Squared
Intercept	5001.920	1	5001.920	300.173	.807
GROUPS	101.128	2	50.564	3.034	.078
Total	6302.816	75			

From Table 1.2 it is revealed that F value of speed of junior level hockey goalkeeper of school national, Khelo India Academy and junior national is 3.034 which is not significant at 0.05 level of significant. So further hypothesis there is no significant difference among mean score of junior level hockey goalkeeper of school national, Khelo india Academy and junior national is failed to reject. No further post hoc test will applied.

Objective 2: -To compare mean scores of agility of school level, Khelo India academy, Junior national.

Hypothesis: -There is no significant difference among mean scores of agility of school level, Khelo India academy, Junior national

Table 1.3

Descriptive statistics of Agility of National level junior hockey goalkeeper of different level

GROUPS	Mean	Std. Deviation	N
school level	12.7160	3.02719	25
Khelo India academy	12.3468	2.91949	25
Junior National	10.5120	1.11964	25
Total	**11.8583**	**2.66167**	**75**

As per Table 1.3 descriptive statistics of agility of National level junior hockey goalkeeper presented. Mean and SD score of school level (12.71, 3.02), Khelo India academy (12.34, 2.91), Junior national (10.51, 1.12).

Table 1.4: Result of One way ANOVA of speed of National level junior hockey goalkeeper of different level

Source	Type III Sum of Squares	df	Mean Square	F	Partial Eta Squared
Intercept	10546.387	1	10546.387	1.67	.959
GROUPS	69.670	2	34.835	5.517	.133
Total	11070.638	75			

From table 1.4 it is revealed that F value of agility of junior level hockey goalkeeper of school national, Khelo India Academy and junior national is 5.517 which is not significant at 0.05 level of significant. So further hypothesis there is no significant difference among mean score of junior level hockey goalkeeper of school national, Khelo India Academy and junior national is failed to reject. No further post hoc test will applied.

Objective 3:-To compare mean scores of speed of school level, Khelo India academy, junior national.

Hypothesis: - There is no significant difference among mean scores of speed of school level, Khelo India academy, junior national.

TABLE 1.5: Descriptive statistics of Reaction time of National level junior hockey goalkeeper of different level

GROUPS	Mean	Std. Deviation	N
School level	6.6240	1.50590	25
Khelo India academy	5.0200	1.59739	25
Junior national	6.8120	3.73891	25
Total	**6.1520**	**2.59851**	**75**

As per Table 1.5 descriptive statistics of Reaction time of National level junior hockey goalkeeper presented. Mean and SD score of school level (6.62, 1.50), Khelo India academy (5.02, 1.59), Junior national (6.81, 3.73).

TABLE 1.6: Result of One way ANOVA of speed of National level junior hockey goalkeeper of different level

Source	Type III Sum of Squares	df	Mean Square	F
Intercept	2838.533	1	2838.533	452.985
GROUPS	48.495	2	24.248	3.870
Total	3338.200	75		

From table 1.6 it is revealed that F value of Reaction time of junior level hockey goalkeeper of school national, Khelo india Academy and junior national is 24.248 which is significant at 0.05 level of significant. Hypothesis there is no significant difference among mean score of junior level hockey goalkeeper of school national, Khelo india Academy and junior national is rejected. To know which group is better in reaction time among all three groups post hoc test applied.

TABLE 1.7: Result of One way ANOVA of speed of National level junior hockey goalkeeper of different level

	(I) GROUPS	(J) GROUPS	Mean Difference (I-J)	Std. Error	Sig.
LSD	School level	Khelo India	1.6040*	.70803	.026
		Junior national	-.1880	.70803	.791
	Khelo India	School level	-1.6040*	.70803	.026
		Junior national	-1.7920*	.70803	.014
	Junior national	School level	.1880	.70803	.791
		Khelo India	1.7920*	.70803	.014

From table 1.7, it can be seen that mean scores of reaction time differ significantly among each other. Further which group mean is higher. Mean difference of School level and Khelo India academy is 1.604 which is significant. Further mean difference of Khelo India academy and Junior national is 1.792 which is also significant. Further mean difference of Junior level and School level is 0.188 which is not significant.

Discussion on Findings-

The study was to conducted to compare the physical fitness components of School National, Junior National and Khelo India Academy hockey Goalkeepers. Result of investigation showed that there is no significant difference of speed and reaction which can be further supported that there may be equal level ability in among groups. There is significant difference in score of agility which is further tested by Post hoc test which revealed that mean difference of scores of school level and Khelo India academy is significant. Significant difference also found in scores of Khelo India academy and Junior national.

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