

**A COMPARATIVESTUDY OF FLEXIBILITY-MOTOR COMPONENT AT DIFFERENT
LEVEL OF SPORTS PARTICIPATION AMONG FIELD HOCKEY GOALKEEPERS**

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Abstract

The aim of the study was to compare the flexibility-motor component of male hockey goalkeepers at different levels of sports participation. For the study, 45 male goalkeepers between the ages of 18 and 24 were selected. Of the 45 subjects, 15 subjects were each selected from peer; Interuniversity and national participation. All selected topics are from U.P. standing alone. The Flexibility-Engine component was chosen for the research. Prior to data collection, through test administration, all subjects were brought together and the purpose and procedure of the test item were explained and given sufficient time to warm up for the test. Adequate demonstrations regarding the "sit and reach test" were measured in the field. The ANOVA (analysis of variance) technique was used to compare the mean of the different participation levels followed by the LSD (least significant difference) if applicable and the significant difference was set at 0.05 level. The result of the study showed that there was a significant difference between national, peer and senior peer level hockey goalkeepers in the variable flexibility motor component.

Keywords: Motor Component, Field Hockey, Goalkeepers, Levels of sports participation.

INTRODUCTION

Hockey is undoubtedly one of the most popular sports in the world. There are different entry or tournament levels of hockey in different countries. In India, hockey tournaments at the national, state, intercollegiate and district, and intercollegiate levels are played. Performance research in hockey generally focuses on players, not goaltenders. This study attempts to understand the aspects related to the optimization of the goalkeeper's resources and to classify his requirements in competition. Game situations allow coaches to identify certain variables that can distinguish better and worse goalkeepers and therefore lead to improved results. A game of hockey is won by beating the opponent. The goalkeeper is a team's last line of defense and their job is to intercept shots taken within 14.6m of the goal. Mohammad, (2012) the ball goes to the keeper at around 110-120 km/h and the keeper has less than a second to react to a shot from the sidelines and move to stop it.

According to **Coach's Goaltending Handbook, (2012)** goalkeepers had several roles in their teams. Goalkeepers protect the goal and works as defensive coordinator. A goalkeeper needs to develop his physical and technical skills, focus and concentration, and their understanding of defensive tactics and strategy. Goalkeeper works on their physical and technical skills all the time.

Nelson & Johnson, (1970) the game demanded high level of motor fitness component. It includes several components such as speed, reaction time, endurance, flexibility, and the important of all the coordinative ability. If a player has a large amount of general athletic ability possesses the basic physical components necessary to achieve excellence number of activities, one will still be unable to perform well in a particular sports until he develops the skill specific to that sports.

Sadri, (1993) motor component helps in learning faster and also to achieve the high level of performance. The goalkeeping in the field hockey demands agility, muscular coordination, breath holding capacity, quick responses and a great deal of presence of mind. The goalkeeping demands high level of motor fitness and a great deal of presence of mind.

Harold & Rosemary, (1979) motor fitness variables have been considered the important prerequisite for sportsman to secure the top level performance in games. There is general agreement among authorities that general and specific motor fitness play a decisive role in one's level of performance in wide range of motor activities. Motor fitness is used to obtain achievement in motor skills.

England hockey workshop, (2013) the physical elements that are of specific use to goalkeepers are the key dynamic flexibility elements. Foot speed, balance and agility are crucial and very important for goalkeepers.

Very fewer studies have been conducted regarding the performance of Goalkeeper. Above literature shows a relationship between sports performance and Flexibility- motor component of Goalkeepers, off-course it is new area of exploration, which will provide scientific knowledge to the students/ players/beginners/coaches who want to make their carrier in hockey, especially in goalkeeping, that's why it was selected as research problem to work.

METHODS

SUBJECTS

Forty-five male hockey goalkeepers aged between 18- 24 years were selected for the purpose of the study. Out of forty-five subjects, fifteen subjects each were selected from inter-collegiate; inter-university and national level participations. All the selected subjects belong to U.P. state only.

SELECTION OF VARIABLE

For the purpose of study Flexibility- Motor component was selected.

SELECTION OF TEST

As per available literature, the following standardized test item was used to collect data on the selected variable and presented below-

2.3.1 MOTOR COMPONENT

Variable	Test and Tool
Flexibility	Sit and reach test

COLLECTION OF DATA

Prior to data collection, through test administration, all subjects were brought together and the purpose and procedure of the test item were explained and given sufficient time to warm up for the test. Adequate demonstrations regarding the sitting and reaching test were measured in the field.

STATISTICAL PROCEDURE

To compare the selected flexibility-motor component of hockey goalies, the one-way ANOVA (analysis of variance) technique was used to compare the mean of the different participation levels, followed by LSD (least significant difference), if applicable. All SPSS v.16 statistical functions software was used. The significance level for determining significant difference was set at 0.05 levels.

RESULT

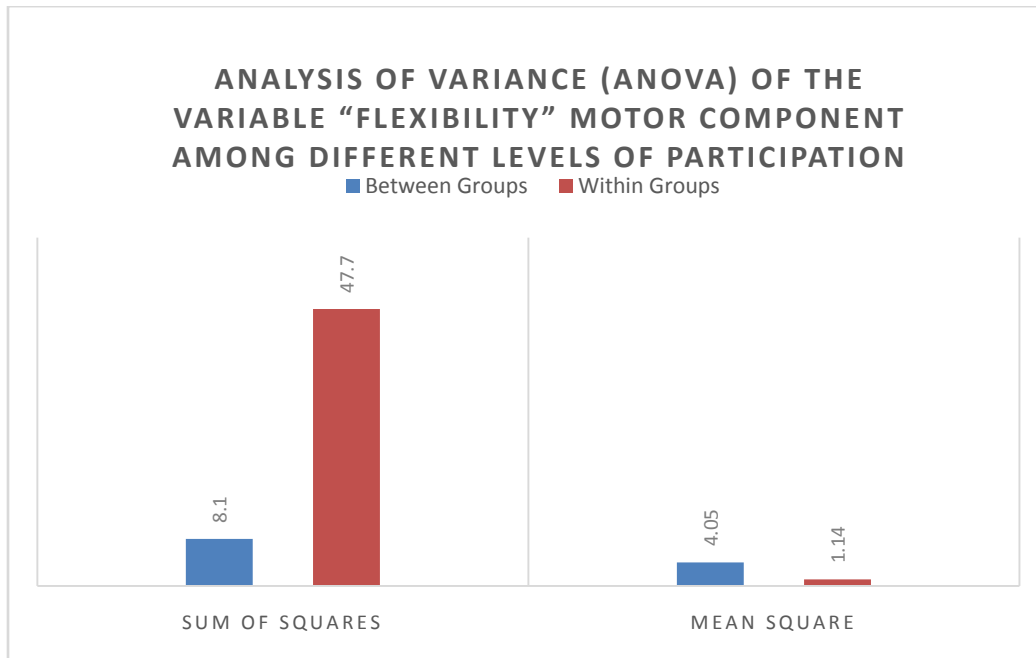
Table: 01

Analysis of variance (ANOVA) of the variable “Flexibility” Motor Component among different levels of participation

	Sum of Squares	D.f.	Mean Square	F
Between Groups	8.10	2	4.05	3.57*
Within Groups	47.70	42	1.14	
Total	55.80	44		

*Significant at 0.05 level of significance

Tabulated F= 3.20



An examination of above cited Table 01 it is evidenced that calculated F value (3.57) was found more than tabulated F value (3.20) at 0.05 level of significance with 42 degree of freedom, hence there is

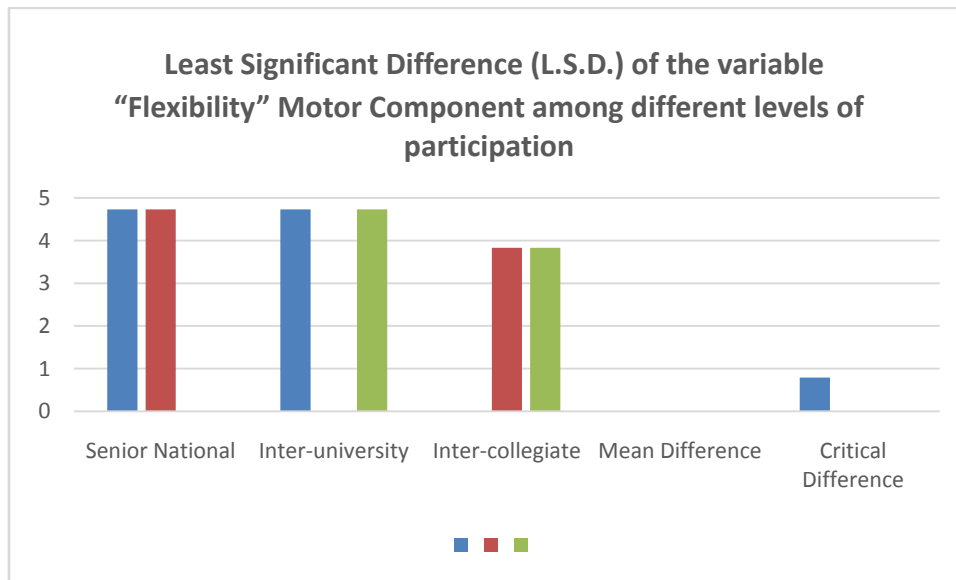
significant difference existed among senior national, inter-university and inter-collegiate levels of field hockey goalkeepers in the variable of flexibility- motor component. To know the exact position of goalkeeper’s flexibility- motor component, representing different levels of Participation, least significant difference (L.S.D.) a post hoc test was applied and its result is presented in the following Table 02.

Table: 02

Least Significant Difference (L.S.D.) of the variable “Flexibility” Motor Component among different levels of participation

Senior National	Inter-university	Inter-collegiate	Mean Difference	Critical Difference
4.73	4.73		0.00	0.79
4.73		3.83	0.90*	
	4.73	3.83	0.90*	

*Significant at 0.05 level



The comparison of all three levels of Participation was done using L.S.D. and its results are presented in the above cited Table 02, it showed that significant differences were found between senior national and intercollegiate; inter-university and inter-collegiate level field hockey goalkeepers, whereas

no significant difference was documented between senior national and inter-university level field hockey goalkeepers in the variable of flexibility- motor component.

DISCUSSION

The aim of the study was to compare the flexibility-motor component of hockey goalkeepers at different levels of sports participation. The study result showed that there was a significant difference between national, peer and senior peer field hockey goalkeepers in terms of flexibility and motor skills. Uppal and Dutta (1980) also reported the same type of results in their study; they worked on motor fitness and found significant differences between subjects. They said that motor variables such as flexibility had a higher degree of association with performance level, and this is also reflected in the results of our study that higher level hockey goalkeepers have a higher degree of higher flexibility compared to their lower levels. of presence. This finding was also supported by Khetmalis, 2012.

The comparison with L.S.D. between the three levels of participation, differences were found between senior national and peer; varsity and peer field hockey goalkeepers in their flexibility motor component, while no significant differences were documented between national and varsity senior hockey goalkeepers in the flexibility motor variable. have national and varsity level similarities in the variable flexibility engine component; this may be because an almost similar kind of training is given to goalkeepers at both levels, also uppal & dutta (1980) found the same result.

CONCLUSIONS

Based on the results obtained, the following conclusions can be drawn-

- There was a significant difference between senior national, varsity and peer level hockey goaltenders in the flexibility-motor variable component.
- The L.S.D. showed that significant differences were found between national seniors and their peers; varsity- and varsity-level hockey goaltenders in their flexibility-motor component, as no significant differences were documented between national-level and varsity-level senior hockey goaltenders in this variable.

In general, the study results attributed that Uttar Pradesh hockey goalkeepers were national or varsity hockey goalkeepers with almost similar type of flexibility – motor condition component.

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