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Physical fitness among goal keepers of football and hockey of Himachal Pradesh

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Abstract

The purpose of the study was to analyze the differences in physical fitness variables between goal keepers of football and hockey. This study was conducting on 20 goal keepers of football and hockey with an aim to find out differences in physical fitness variables between the goal keepers football (n=10) and goal keepers of hockey (n=10). The data for the present study were collected in the inter college competition organized by Himachal Pradesh University, during the session 2011-2012. AAHPER physical fitness test (AAHPER. 1976) was used to assess the physical fitness level. To analyze the difference in physical fitness variable between two groups of football and hockey were determined through 't' test. From the findings, it has been found that goal keepers of hockey possess greater arm and shoulder strength endurance, agility, leg explosive strength, speed and cardio-vascular endurance and football players are more superior in abdominal strength endurance.

Keywords: Physical fitness, goal keepers

Introduction

Physical fitness is a condition in which an individual has sufficient energy to avoid fatigue and enjoy life. The concept of physical fitness is as old as mankind. Physical fitness is one's richest possession, it cannot purchase and it has to be earned through a daily routine of physical exercises. It is a hard fact that physically fit people are in a better position to bear the rigorous and abnormal stress and strain, than those who are less physically fit. Fleishman used the term 'physical fitness' to mean functional capacity of individual to perform certain kind of task requiring muscular activity. Physical fitness is a multifaceted continuum extending from birth to death, affected by physical activity. A person who does not enjoy healthful living is a burden not only on himself but also on his nation and on the human society as well. Where a person who has a good health is assets and without health one cannot enjoy the blessing of nature and human life. In nutshell we can say that physical fitness parameter play an important role in the high performance in football and hockey. Hence, the objectives of the investigation were to find out the difference between goal keepers of football and hockey. The present study focused on the physical fitness status of inters collegiate goal keepers of football and hockey.

Methodology

To achieve the purpose of this study 20 goal keepers of football and hockey i.e. football (n=10), hockey (n=10), who participated in the inter college completion organized by Himachal Pradesh University in the session 2011-12, were randomly selected and used as subjects in this study. Age group ranged from 18-25years. AAPHER Physical fitness test 1976 was applied to assess the physical fitness. Pull ups were used to measure the arm and shoulder strength endurance. One point was scored each time a pull ups was completed. Total no. of pull ups performed by the subjects was taken as score for pull ups. Bent knee sit ups were used to measure the abdominal strength endurance. The score of the test is the no. of correctly executed Sit ups performed by the subjects in 60 second. Shuttle run test was used to monitor the agility of the subjects. The time taken by the subjects between the audible signal 'start' and the finishing of the run was recorded to be the score. The time was recorded in the sec.

The Standing broad jump was used to explosive strength of the legs. 50 yard dash was used to estimate speed. The time taken by the subjects to complete the test in sec. was the net score of the subjects. To test the significance of mean difference between the goal keepers of football and hockey, statistical technique of 't' test was applied.

Results and Discussion

Since the purpose of the study was to analyze the physical fitness level of goal keepers of football and hockey, these are explained with the help of different tables.

Table 1: Comparison of Arm and Shoulder Strength Endurance between Goalkeepers of Hockey and Football

Variables	Footballers(N=10)			Hockey (N=10)			't'
	Mean	S.D	S.E.M	Mean	S.D.	S.E.M	
Arm & Shoulder Strength Endurance (in counts)	7.4	1.58	.50	8.6	2.17	.69	.19

* Significant at.05 level ** Significant at.01 level

Table 1 depicts the means, standard deviations and values of SEM for arm and shoulder strength endurance of goal keepers of football and hockey games. Further, it has been found that goal keepers of hockey game have depicted somewhat higher mean value for arm and shoulder strength endurance as

compared to goal keepers of football game. But none of such mean difference was found to be significant at 0.05 level. Hence, the Hypothesis that, "there would be no significant difference between goal keepers of football and hockey in relation to arm and shoulder strength endurance" is accepted.

Table 2: Comparison of Abdominal Strength Endurance between Goalkeepers of Hockey and Football

Variables	Footballers(N=10)			Hockey (N=10)			't'
	Mean	S.D	S.E.M	Mean	S.D.	S.E.M	
Abdominal Strength Endurance (in counts)	37.6	3.60	1.14	34.3	7.29	2.30	.53

* Significant at.05 level ** Significant at.01 level

Table 2 depicts the means, standard deviations and values of SEM for abdominal strength endurance of goal keepers of football and hockey games. Further, it has been found that goal keepers of hockey game have depicted somewhat lesser mean value for abdominal strength endurance as compared to goal

keepers of football game. But none of such mean difference was found to be significant at 0.05 level. Hence, the Hypothesis that, "there would be no significant difference between goal keepers of football and hockey in relation to abdominal strength endurance" is accepted.

Table 3: Comparison of Agility between Goalkeepers of Hockey and Football

Variables	Footballers(N=10)			Hockey (N=10)			't'
	Mean	S.D	S.E.M	Mean	S.D.	S.E.M	
Agility (Sec)	8.76	.31	.10	8.06	.67	.21	.11

* Significant at.05 level ** Significant at.01 level

Table 3 depicts the means, standard deviations and values of SEM for agility of goal keepers of football and hockey games. Further, it has been found that goal keepers of hockey game have depicted somewhat higher mean value for arm and shoulder strength endurance as compared to goal keepers of football game. But none of such mean difference was found to be significant at 0.05 level. Hence, the Hypothesis that, "there would be no significant difference between goal keepers of football and hockey in relation to agility" is accepted.

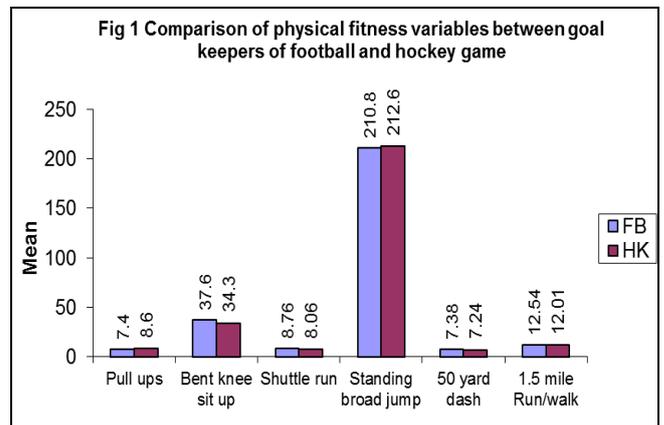


Table 4: Comparison of Leg Explosive Strength between Goalkeepers of Hockey and Football

Variables	Footballers(N=10)			Hockey (N=10)			't'
	Mean	S.D	S.E.M	Mean	S.D.	S.E.M	
Leg Explosive Strength (cm)	210.8	10.03	3.17	212.6	17.31	5.46	.29

* Significant at.05 level ** Significant at.01 level

Table 4 depict the means, standard deviations and values of SEM for leg explosive strength of goal keepers of football and hockey games. Further, it has been found that goal keepers of hockey game have depicted somewhat higher mean value for leg explosive strength as compared to goal keepers of football

game. But none of such mean difference was found to be significant at 0.05 level. Hence, the Hypothesis that, "there would be no significant difference between goal keepers of football and hockey in relation to leg explosive strength" is accepted.

Table 5: Comparison of Speed between Goalkeepers of Hockey and Football

Variables	Footballers(N=10)			Hockey (N=10)			't'
	Mean	S.D	S.E.M	Mean	S.D.	S.E.M	
Speed	7.38	.32	.10	7.24	.42	.13	.02

* Significant at.05 level ** Significant at.01 level+

Table 5 depicts the means, standard deviations and values of SEM for arm and of speed of goal keepers of football and hockey games. Further, it has been found that goal keepers of hockey game have depicted somewhat higher mean value for speed as compared to goal keepers of football game. But none

of such mean difference was found to be significant at 0.05 level. Hence, the Hypothesis that, “*there would be no significant difference between goal keepers of football and hockey in relation to speed*” is accepted.

Table 6: Comparison of Cardio-Vascular Endurance between Goalkeepers of Hockey and Football

Variables	Footballers(N=10)			Hockey (N=10)			't'
	Mean	S.D	S.E.M	Mean	S.D.	S.E.M	
Cardio-Vascular Endurance (Min)	12.54	.28	.09	12.01	.47	.15	.08

* Significant at.05 level ** Significant at.01 level

Table 6 depicts the means, standard deviations and values of SEM for cardio-vascular endurance of goal keepers of football and hockey games. Further, it has been found that goal keepers of hockey game have depicted somewhat higher mean value for cardio-vascular endurance as compared to goal keepers of football game. But none of such mean difference was found to be significant at 0.05 level. Hence, the Hypothesis that, “*there would be no significant difference between goal keepers of football and hockey in relation to cardio-vascular endurance*” is accepted.

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Conclusions

It has been found that goal keepers of football game possess lesser arm & shoulder strength endurance, leg explosive strength, agility, speed and cardio-vascular endurance and greater abdominal strength endurance than goal keepers of hockey game. There was no significant difference in arm & shoulder strength endurance, abdominal strength endurance, agility, leg explosive strength, speed and cardio-vascular endurance between them. This indicates that goal keepers of football game were near about same arm & shoulder strength endurance, abdominal strength endurance, agility, leg explosive strength, speed and cardio vascular endurance with goal keepers of hockey game.

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