

**A COMPARATIVE STUDY OF CARDIO VASCULAR CAPACITY AND SOME
SELECTED MOTOR FITNESS PREDICTORS OF SOCCER AND HOCKEY
PLAYERS**



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ABSTRACT

The main objective of the study was to compare the motor fitness and cardiovascular capacity of Soccer and Hockey Players. 40 subjects were selected on the bases of random sampling method (20 Soccer + 20 Hockey Game). The researcher hypothesized that there was much difference in cardiovascular capacity in Soccer and Hockey players. The intercollegiate Soccer and Hockey players were taken for the present study. Age of the players was between 19 to 25 years*. After the collection of data it was statistically analyzed. The results of the study revealed the significant difference on the motor fitness and cardiovascular capacity of soccer and Hockey players.

Keywords: Cardio Vascular Capacity, Motor Fitness Predictors, Soccer & Hockey Players.

INTRODUCTION

In modern scientific age in every field of human endeavor. Systematic, objectives of scientific procedure are followed in accordance with the principles based on experience understanding and application of scientific knowledge. The field games and supports is no exception to this in the field of games and support has taken place and their international achievement has been made possible due to research. The human body is an

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instrument for movement and in order to develop that unique movement behavior to a certain level of proficiency and satisfaction; we need to keep that instrument fit, sharp and ready for use. The physical performance of a player or a person is dependent on various factors, such as speed, agility, flexibility, power etc.

Experimentation and application of scientific knowledge in games and sports every nation is being increasing concerned about physical fitness of its citizen. Realizing that fitness is fundamental to happy and purpose full living besides its contribution to economic growth for competitive game and sports or for selection of a particular games and sports and has to consider the physical fitness and cardio vascular capacity with plays a dominant role at higher level of competition.

OBJECTIVE OF THE STUDY

The main objective of the study was to compare the motor fitness and cardiovascular capacity of Soccer and Hockey Players.

HYPOTHESIS

It was hypothesized that there was much difference in cardiovascular capacity in Soccer and Hockey Players.

DESIGN OF STUDY

It includes the source of data, selection of subject, selection of test and collection of data was described.

Source of Data:

The data was collected from intercollegiate level players of Soccer and Hockey games from the concerned intercollegiate competitions.

Selection of Subjects:

The researcher selected 20 male subjects from Soccer intercollegiate level and 20 male subjects belonging to Hockey game.

Sampling Method:

The Samples were selected on the bases of Random Sampling Method.

Selection of Test:

Phillips J.C.R. test and Harvard step test was chosen to find out the motor fitness and cardio vascular capacity of the subjects.

Collection of Data:

Motor Fitness and cardio vascular capacity of the entire selected subject was tested according to the administration of the test items chosen for the study. The score of each subject for each test items of both groups that are Soccer players and Hockey players.

ANALYSIS & INTERPRETATION OF DATA

The data collected from 40 subjects 20 from each Soccer and Hockey game. Motor fitness and cardio - Vascular capacity was computed by using t-test for statistical analysis. Researcher will collect the data in the specified scoring tables. The raw data will be converted in to 't- scores' and the 't- score' will be added to form a composite score. Then mean and standard deviation were calculated and 't' test was applied to find out significance level.

Table No: I
Analysis of variance for the data of Vertical Jump for Soccer and Hockey Players

Group	Mean	SD	SEM	't' Cal.	't' Table
Football	1.74	0.293	0.065	1.428@	2.021
Hockey	1.56	0.277	0.061		

Insignificant at 0.05 level of Confidence

The above table no: I revealed that obtained value of 't' 1.428 which was less than the value of 't' that was 2.021 which was not found significant at 0.05 level of significance which means not significance difference was not found a vertical jump tests of two game players viz Soccer and Hockey players. Further it can also be revealed that mean value of Soccer player was high than the Hockey players. Which shows that Soccer players shown superior in vertical Jump than Hockey players.

Table No: II
Analysis of variance for the data of Chinning (Pull - Ups) Performance for Soccer and Hockey Players

Group	Mean	SD	SEM	't' Cal.	't' Table
Football	13.20	0.812	0.181	2.17@	2.021
Hockey	14.00	0.836	0.187		

Insignificant at 38 at 0.05 level of significance.

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The above table no: II revealed that obtained value of 't' 2.17 which was less than the value of 't' that was 2.021 which was not found significant at 0.05 level of significance which means not significance difference was not found in Chinning up tests of two game players viz Soccer and Hockey players.

Table No: III

Analysis of variance for the data of Shuttle Run Performance for Soccer and Hockey Players

Group	Mean	SD	SEM	't' Cal.	't' Table
Football	10.90	0.738	0.165	2.52	2.021
Hockey	11.75	0.766	0.171		

Significant at 0.05 level of Confidence.

The above table no: III revealed that obtained value of 't' 2.52 which was more than the value of 't' that was 2.021 which was found significant at 0.05 level of significance which means that significance difference was found in Shuttle run tests of two game players viz Soccer and Hockey players. Further it can also be revealed that mean value of Soccer player was less than the Hockey players. Which shows that Soccer players shown not superior in shuttle run than Hockey players.

Table No: IV

Showing the Percentage difference of Soccer Players in Cardio Vascular Capacity

Fitness Index Score	Fitness Condition	Total	Percentage
Up to 54	Poor condition	--	--
Between 55 to 64	Low average	01	5%
Between 65 to 79	High average	02	10%
Between 80 to 89	Good	10	50%
90 and above	Excellent	7	35%

- From the above table no revealed that 0% of players were found in poor condition level because Harvard step - up test score lays below the 54 fitness index score.
- It can also be found that 5% of players were found in low average condition level. Because Harvard step - up test score was found between 55 to 64 fitness index score.
- It can also be found that 10% of players were found in high average condition level. Because Harvard step - up test score was found between 65 to 79 fitness index score.

- It can also be found that 50% of players were found in good average condition level. Because Harvard step - up test score was found between 80 to 89 fitness index score.

Table No: V

Showing the Percentage difference of Hockey Players in Cardiovascular Capacity

Fitness Index Score	Fitness Condition	Total	Percentage
Up to 54	Poor condition	--	--
Between 55 to 64	Low average	02	10%
Between 65 to 79	High average	05	25%
Between 80 to 89	Good	6	30%
90 and above	Excellent	7	35%

- From the above table it was revealed that 0% of players were found in poor condition level because Harvard step - up test score lays below the 54 fitness index score.
- It can also be found that 10% of players were found in low average condition level. Because Harvard step - up test score was found between 55 to 64 fitness index score.
- It can also be found that 25% of players were found in high average condition level. Because Harvard step - up test score was found between 65 to 79 fitness index score.
- It can also be found that 30% of players were found in good average condition level. Because Harvard step - up test score was found between 80 to 89 fitness index score.
- It can also be found that 35% of players were found in good average condition level. Because hard wards step up test score was found between 90 and above fitness index score.

DISCUSSION ON FINDINGS

The findings of this study shows that there was significant difference among the two group viz Soccer and Hockey players. As the difference motor fitness components of two groups at 0.05 level show. Finding show in significance difference in the vertical Jump, chinning ups the two groups while test motor fitness test components of 't' value is less than 't' table (I) (II) The finding also revealed that there was significant

difference in shuttle run of respected two groups viz Soccer and Hockey players. The findings also revealed that there was difference in cardio vascular capacity in physical fitness index of Soccer and Hockey players in table IV, V up to 54 i.e. poor condition levels no players in both groups come under this level of Soccer and Hockey players. Players in 55 to 64 i.e. low average level Soccer players come under this level is 5% and Hockey players come under this level is 10%. Players in 65 to 79 i.e. high average level the Soccer players come under this level is 10% and Hockey players come under this level is 25% . players in 80 to 89 i.e: The good level the Soccer players come under this level is 50% and Hockey players come under this level is 30% players in 90 to above the Soccer players come under this level is 35% and Hockey players come under this level is 35% this findings we say that Soccer players are high cardio vascular capacity as compared to Hockey players.

TESTING OF HYPOTHESIS

The given hypothesis for the present study was tested at 0.05 level of significance on Soccer and Hockey players which was found significant among the Soccer and Hockey players.

CONCLUSIONS

On the basis of the present study following conclusions were drawn:-

- It is seen in table I that there was insignificant difference in motor fitness component (Leg strength) ‘t’ value to be in significant at 0.05 level with 2 and 38 df, was 2.021 were is tabulate ‘t’ was found 1.428 because both game need endurance and explosive power of legs for better performance.
- It is seen in table II that there was insignificant difference in motor fitness component (power of arms) ‘t’ value to be insignificant at 0.05 level with 2 and 38 df, was 2.021 were is tabulate ‘t’ was found 2.17 because both game need endurance and explosive power of legs for better performance.
- It is seen in table III that there was significant difference in motor fitness component (agility) ‘t’ value to be significant at 0.05 level with 2 and 38 df, was 2.021 were is tabulate ‘t’ was found 2.52 because both game need endurance and explosive power of legs for better performance.
- It was also seen in Harvard step test there is a difference of cardio vascular capacity between Soccer and Hockey players.

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