

COMPARATIVE STUDY OF PHYSIOLOGICAL COMPONENTS OF SOCCER AND HOCKEY PLAYERS OF JAMMU UNIVERSITY

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Abstract:

The main objectives of the study were to investigate the Physiological Components of Soccer and Hockey Players of Jammu University of Jammu and Kashmir State and compare the effectiveness of Vital Capacity, Breath Holding Capacity, Pulse Rate and Blood Pressure of Soccer and Hockey Players. The study was conducted only Inter Collegiate Male Players age groups between (19-25) i.e. Soccer and Hokey.32 Players were selected on the basis of Simple Random Sampling method. i.e. Soccer (16) and Hokey (16). This study was also restricted to the following variables of Physiological Components i.e.: Vital Capacity, Pulse Rate, Breath Holding Capacity, and Blood Pressure etc. for the purpose of statistical analysis 't' test was applied the collection of data. The significant was set at 0.05 level of confidence and the degree of freedom was30. On the basis of result following conclusion were drawn: - There were no significant difference between two groups i.e. Soccer and Hockey Players in Vital Capacity, Pulse Rate, Breath Holding Capacity, and Blood Pressure.

Keywords: Vital Capacity, Breath Holding Capacity, Pulse Rate, Blood Pressure, Soccer and Hockey Players.

Introduction:

The American Association for Health, Physical Education and Recreation (AAHPER) defines total fitness as that state which characterizes the degree which the person is able to function. Fitness is an individual matter. It implies the ability of each person to live most effectively with his potential. Ability to function depends upon the Physical, Mental, Emotional, Social and Spiritual components of fitness; all of which is related to each other and are mutually inter-dependent. Physical Fitness reflects mental and social well being. Human being functions as a whole and not as segmented parts.

Physiology is the subject that deals with the study of human body functions. Exercise physiology is the study of how's body structures and functions are changed as a result of exercise. Sports Physiology is derived from Exercise Physiology to training the athlete and increasing or enhancing the sports performance.

Objectives of the Study:

The Following were the main objectives of the study:-

- I. To find out the Physiological Components Comparison of Soccer and Hockey Players of Jammu University of Jammu and Kashmir State.

- II. To Compare the Effectiveness of Vital Capacity, Breath-holding Capacity, Pulse Rate and Blood Pressure of Soccer and Hockey Players.

Hypothesis of the Study:

It was hypothesized that there may be a significant difference among the Physiological Components of Soccer and Hockey Players of Jammu University of Jammu and Kashmir State.

Sampling Method:

The Sample comprised of 32 Inter Collegiate Players studying in Jammu University of J & K, which were selected through Simple Random Sampling Method for the study i.e. 16 Soccer and 16 Hockey Players.

Tools for Data Collection:

The following were the main tools for data collection as under:

- ✓ **Vital Capacity** : Measured in Unit of liter.
Equipment : Wet-Spiro meter
- ✓ **Pulse Rate** : Measured in Beats per minute with finger tips on radial artery.
Equipment : Stopwatch
- ✓ **Systolic B.P.** : Measured in mm/hg by using Sphygmomanometer and Stethoscope.
- ✓ **Diastolic B.P.** : Measured in mm/hg by using Sphygmomanometer and Stethoscope.
- ✓ **Breath Holding Capacity** : Measured in Seconds by using Stop Watch.

This study was also restricted to the following variables of Physiological Components i.e.: Vital Capacity, Pulse Rate, Breath Holding Capacity, and Blood Pressure etc. for the purpose of statistical analysis 't' test was applied the collection of data. The significant was set at 0.05 level of confidence and the degree of freedom was 30.

Statistical Analysis of the Data:

Table No-I

Table showing the Pulse Rate of Soccer and Hockey Players of Jammu University

Group	Subjects	Mean	S.D.	S.E.	M.D.	't'	df	I.S.	't' Value
Soccer	16	66.00	5.63	1.05	1.56	0.04*	14	0.05	2.145
Hockey	16	64.44	4.80						
N	(32)								

It was observed from Table No-I that there was no significant difference in Pulse Rate of Soccer and Hockey Players because calculated 't' value was less than tabulated 't' value of confidence for 14 degree of freedom i.e. 2.145.

Table No-II**Table showing the Breath Holding Capacity of Soccer and Hockey Players of Jammu University**

Group	Subjects	Mean	S.D.	S.E.	M.D.	't'	df	I.S.	't' Value
Soccer	16	51.75	3.51	1.09	0.19	0.17*	14	0.05	2.145
Hockey	16	51.94	2.57						
N	(32)								

It was observed from Table No-II that there was no significant difference in Breath Holding Capacity of Soccer and Hockey Players because calculated 't' value was less than tabulated 't' value at 0.05 level of confidence for 14 degree of freedom i.e.=2.145.

Table No-III**Table showing the Vital Capacity of Soccer and Hockey Players of Jammu University**

Group	Subjects	Mean	S.D.	S.E.	M.D.	't'	df	I.S.	't' Value
Soccer	16	3674.88	565.83	193.90	15.50	0.08*	14	0.05	2.145
Hockey	16	3659.38	530.48						
N	(32)								

It was observed from Table No-III that there was no significant difference in Vital Capacity of Soccer and Hockey Players because calculated 't' value was less than tabulated 't' value at 0.05 level of confidence for 14 degree of freedom i.e.=2.145.

Table No-IV**Table showing the Diastolic Blood Pressure of Soccer and Hockey Players of Jammu University**

Group	Subjects	Mean	S.D.	S.E.	M.D.	't'	df	I.S.	't' Value
Soccer	16	80.00	4.62	1.54	1.38	0.90*	14	0.05	2.145
Hockey	16	81.38	4.05						
N	(32)								

It was observed from Table No-IV that there was no significant difference in Diastolic Blood Pressure of Soccer and Hockey Players because calculated 't' value was less than tabulated 't' value at 0.05 level of confidence for 14 degree of freedom i.e.=2.145.

Table No-V
Table showing the Systolic Blood Pressure of Soccer and Hockey
Players of Jammu University

Group	Subjects	Mean	S.D.	S.E.	M.D.	't'	df	I.S.	't' Value
Soccer	16	80.00	4.62	1.54	1.38	0.90*	14	0.05	2.145
Hockey	16	81.38	4.05						
N	(32)								

It was observed from Table No-IV that there was no significant difference in Diastolic Blood Pressure of Soccer and Hockey Players because calculated 't' value was less than tabulated 't' value at 0.05 level of confidence for 14 degree of freedom i.e.=2.145.

Testing of Hypothesis:

There were no significant difference among the Physiological Components of Soccer and Hockey Players of Jammu University, thus in this case hypothesis was rejected.

Conclusions:

On the basis of statistical analysis following conclusions were drawn:-

- There were no significant difference among the Pulse-rate of Soccer and Hockey Players.
- There were no significant difference among the Breath Holding Capacity of Soccer and Hockey Players.
- There were no significant difference among the Vital Capacity of Soccer and Hockey Players.
- There were no significant difference among the Diastolic Capacity of Soccer and Hockey Players.
- There were no significant difference among the Breath Systolic Capacity of Soccer and Hockey Players.

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