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COMPARATIVE STUDY ON SELECTED ANTHROPOMETRIC VARIABLES AMONG DIFFERENT GAMES PLAYERS

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ABSTRACT

The aim of the study was comparison of Selected Anthropometric variables among Soccer, Cricket and Hockey players. A total number of 45 male subjects (15each groups) of H.N.B.G.U. Srinagar Garhwal were selected with age ranging from 18 to 25 years to act as a subject for the study. For the purpose of the study following Anthropometric variables were selected- sitting height, standing height, forearm length, total arm length & leg length. Data on all the anthropometric variables was measure in Anthropometric lab at the department of Physical Education. All the necessary information pertaining to the requirement of the procedure was imparted to the subjects beforehand. The collected data was analyzed by using various Descriptive and Inferential Statistics. In order to assess the various selected anthropometric variables descriptive statistics namely Mean, Standard Deviation was determined. In inferential statistics One-way ANOVA was applied for comparison of selected anthropometric variables among Cricket, Soccer and Hockey players at Intercollegiate Level. The level of significance was set at 0.05 level. There was no significant difference found among male intercollegiate players of Soccer, Cricket and Hockey games on their Anthropometric variable i.e. sitting height, standing height, forearm length, total arm length & leg length. It may be concluded that all the three game players are having more or less same type of body characteristics at intercollegiate level.

Keywords: Anthropometric variables & Different Game Players.

INTODUCTION

The achievement and improvement in any sports is mainly based upon the specialization of that particular sports so that it is necessary to provide a very definite and scientific procedure for training technique in order to obtain the most economical and effective performance. Measurements of body size include such descriptive data such as height, weight, length, width, and circumference of the various body segments. It has been found that top athlete

in some sports tend to have that proportion that biomechanically aid the particular performance require.

Anthropometric measurements are the most effective application for finding out body, size, shape and composition. It helps a lot in sports talent and team selection, sports counseling and measurements of obesity for health related physical fitness. Anthropometry has a great contribution in sports sciences and sports medicine. Scientists were use various terms in numerous times like Dynamic Anthropometry, Sports Anthropometry, Biometry, Physiological Anthropometry, Kinthropometry etc. to find out the relationship between bodily structure and specialized function requires for various tasks. The scientific terminology given to the measurement of man Anthropometric measurements are widely used to assess and predict performance in various sports. Anthropometric measurements and morphological characteristic play an important role in determining is Anthropometry. The word Anthropometry is derived from two Greek words – Anthropos means man and Metreesin means to measure. Hence Anthropometry means – the measurement of human body.

OBJECTIVE OF THE STUDY

- To compare the anthropometric variables among intercollegiate level players of Soccer, Cricket and Hockey.
- To find out which game among Soccer, Cricket and Hockey have better Anthropometric profile than other.

HYPOTHESIS

It is hypothesized that, there would be significant difference on selected anthropometric measurements viz. sitting height, standing height, forearm length, total arm length & leg length among male Soccer, Cricket and Hockey player at intercollegiate level.

DESIGN OF THE STUDY

For the purpose of the study total 45 male subjects were selected from three groups that were Cricket, Soccer & Hockey players at intercollegiate level of H.N.B.G.U. studying at Birla Campus Srinagar (15 from each game) was selected as subjects. The age of subjects ranged from 18-25 years. The purposive sampling technique was used in selection of subjects in the aspects of the anthropometric measurements. The following variable was selected for the purpose of the study to assess Anthropometric variables were selected-: Height (standing &sitting), Forearm Length, Total Arm Length & Leg Length. Data on all the anthropometric variables were taken in Anthropometric lab at the department of physical education. All the necessary information pertaining to the requirement of the procedure was impart to the subjects beforehand.

RELIABILITY OF DATA

In order to ensure the reliability of data, the investigator was well equipped with the technique of conducting the test. The investigator has been given number of practice sessions in testing of all the variables. The selected anthropometric variable were measured by the scientific equipment available at Anthropometry Laboratory of physical education department H.N.B.G.U. Srinagar Garhwal, Uttarakhand.

STATISTICAL TECHNIQUE

The collected data was analyzed by using various Descriptive and Inferential Statistics. In order to assess the various selected anthropometric variables descriptive statistics namely Mean, Standard Deviation, was determined. In inferential statistics One-way ANOVA was applied for comparison of selected anthropometric variables among male Cricket, Soccer and Hockey players at intercollegiate level. The level of significance was set at 0.05 level.

Table-1

Mean scores and standard deviation of Standing Height of male Soccer, Cricket and Hockey players

Game	No. Of Subject	Mean	SD
Soccer	15	1.68E2	7.63
Cricket	15	1.69E2	6.66
Hockey	15	1.67E2	8.50
Total	45	1.68E2	7.53

Table –1. Reveals that the mean score of Hockey players are lowest while Cricket players has the highest mean value on Standing Height. Standard deviation of Cricket players has lowest value while Hockey players has the highest standard deviation in scores.

Figure-1

The graphical representation of mean and standard deviation of Standing Height of male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University

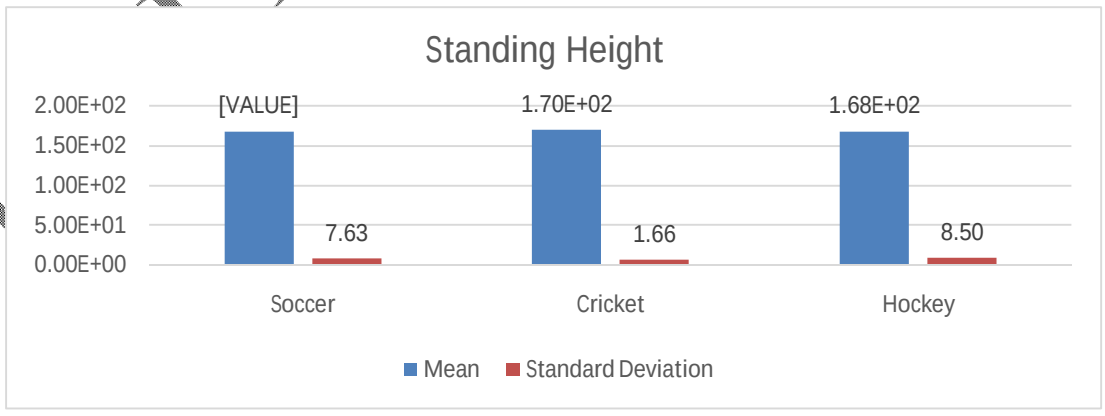


Table-1.1

One-way analysis of variance (ANOVA) on Standing Height of male Soccer, Cricket and Hockey players

Variable	Source of variance	Sum of Squares	Degree of freedom (df)	Mean Square	F-Ratio Table vale	F-ratio Calculated value	Sig.
Standing Height	Between Groups	46.06	2	23.03	3.23	0.395	0.676
	Within Groups	2450.77	42	58.35			
	Total	2496.83	44				

Table-1.1. clearly shows that calculated F-ratio (.395) is lower than tabulated value of F (3.23) at 0.05 level of significance. Therefore, no significant difference in Standing Height between Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University

Table-2

Mean scores and standard deviation of Sitting Height of male Soccer, Cricket and Hockey players

Game	No. Of Subject	Mean	Standard Deviation
Soccer	15	88.01	4.92
Cricket	15	84.45	4.59
Hockey	15	84.38	4.35
Total	45	85.61	4.83

Table –2. Reveals that the mean score of Hockey players are lowest while Soccer players have the highest mean value on Sitting Height. Standard deviation of Hockey players has lowest value while Soccer players have the highest standard deviation in scores.

Figure-2

The graphical representation of mean and standard deviation of Sitting Height of male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University

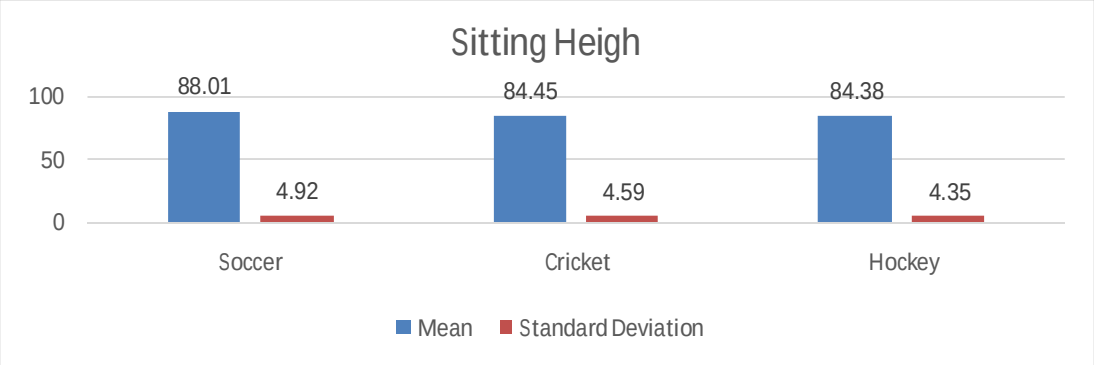


Table-2.1

One-way analysis of variance (ANOVA) on Sitting Height of male Soccer, Cricket and Hockey players

Variable	Source of variance	Sum of Squares	Degree of freedom (df)	Mean Square	F- Ratio Table vale	F-ratio Calculated value	Sig.
Sitting Height	Between Groups	129.15	2	64.578	3.23	3.014	.060
	Within Groups	899.83	42	21.43			
	Total	1028.99	44				

Table-2.1.Clearly shows that calculated F-ratio (3.014) is lower than tabulated value of F (3.23) at 0.05 level of significance. Therefore, no significant difference in Sitting Height among male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University.

Table-3

Mean scores and standard deviation of Arm Length of male Soccer, Cricket and Hockey players

Game	No. of Subject	Mean	SD
Soccer	15	73.07	3.31
Cricket	15	74.18	4.19
Hockey	15	74.80	5.06
Total	45	74.02	4.21

Table –3. Reveals that the mean score of Cricket players are lowest while Soccer players has the highest mean value on Arm Length. Standard deviation of Soccer players has lowest value while Hockey players has the highest standard deviation in scores.

Figure-3

The graphical representation of mean and standard deviation of Arm Length of male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University

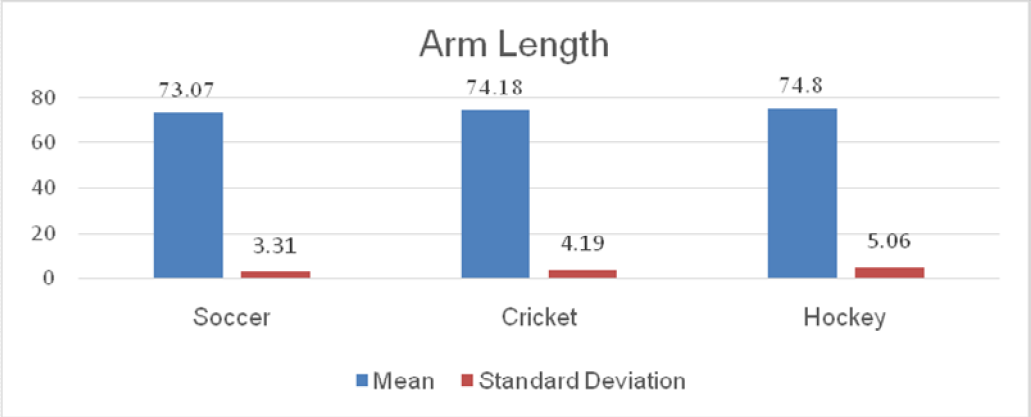


Table-3.1

One-way analysis of variance (ANOVA) on Arm Length of male Soccer, Cricket and Hockey players

Variable	Source of variance	Sum of Squares	Degree of freedom (df)	Mean Square	F Ratio Table vale	F ratio Calculated value	Sig.
Arm Length	Between Groups	22.966	2	11.483	3.23	0.635	0.535
	Within Groups	759.622	42	18.086			
	Total	782.589	44				

Table-3.1 Clearly shows that calculated F-ratio (.635) is lower than tabulated value of F (3.23) at 0.05 level of significance. Therefore, no significant difference in Arm Length among male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University

Table-4

Mean scores and standard deviation of Forearm Length of Soccer, Cricket and Hockey players

Game	No. Of Subject	Mean	SD
Soccer	15	42.54	2.29
Cricket	15	41.48	3.08
Hockey	15	42.93	2.89
Total	45	42.32	2.78

Table –4 reveals that the mean score of Cricket players are lowest while Hockey players has the highest mean value on Forearm Length. Standard deviation of Soccer players has lowest value while Cricket players has the highest standard deviation in scores.

Figure-4

The graphical representation of mean and standard deviation of Forearm Length of male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University

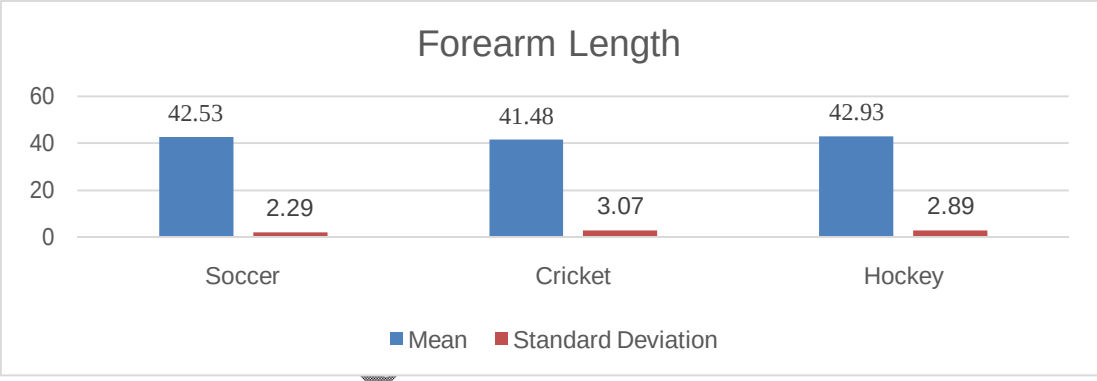


Table-4.1

One-way analysis of variance (ANOVA) on Forearm Length of male Soccer, Cricket and Hockey players

variable	Source of variance	Sum of Squares	Degree of freedom (df)	Mean Square	F Ratio Table vale	F ratio Calculated value	Sig.
Forearm Length	**Between Groups**	16.834	2	8.417	3.23	1.090	0.345
	Within Groups	324.266	42	7.721			
	Total	341.101	44				

Table-4.1 Clearly shows that calculated F-ratio (1.090) is lower than tabulated value of F (3.23) at 0.05 level of significance.

Table-5

Mean scores and standard deviation of Leg Length of male Soccer, Cricket and Hockey players

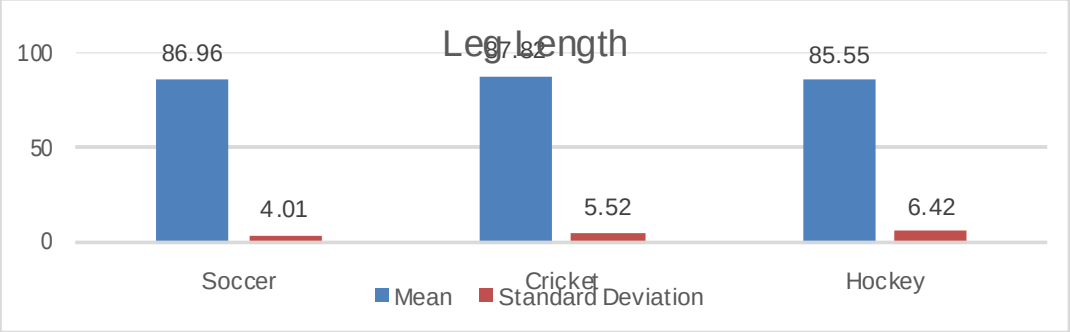
Game	No. of Subject	Mean	SD
Soccer	15	86.96	4.01
Cricket	15	87.82	5.52
Hockey	15	85.55	6.42
Total	45	86.78	5.37

Table –5 reveals that the mean score of Hockey players are lowest while Cricket players has the highest mean value on Leg Length.

Figure-5

The graphical representation of mean and standard deviation of Leg Length of male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University

Table-5.1



One-way analysis of variance (ANOVA) on Leg Length of Soccer, Cricket and Hockey players

Variation	Source of variance	Sum of Squares	Degree of freedom (df)	Mean Square	F Ratio Table vale	F ratio Calculated value	Sig.
Leg Length	**Between Groups**	39.48	2	19.74	3.23	0.675	0.515
	Within Groups	1229.46	42	29.27			
	Total	1268.95	44				

Table-5.1 Clearly shows that calculated F-ratio (0.675) is lower than tabulated value of F (3.23) at 0.05 level of significance. Therefore, no significant difference in Leg Length among male Soccer, Cricket and Hockey intercollegiate level players of H.N.B.G. University.

CONCLUSION

There was no significant difference found among male intercollegiate players of Soccer, Cricket and Hockey games on their Anthropometric variable i.e. Height (standing &sitting), Forearm Length, Total Arm Length & Leg Length. It may be concluded that all the three game players are having more or less same type of body characteristics at intercollegiate level.

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