



P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 4.69
IJPESH 2016; 3(3): 73-74
© 2016 IJPESH
www.kheljournal.com
Received: 17-03-2016
Accepted: 19-04-2016

Amolak Singh Bhullar
Assistant Professor of Physical
Education, SGGS College,
Sector-26, Chandigarh, Punjab,
India.

Anthropometric measurements among hockey and football players: A comparative analysis

Amolak Singh Bhullar

Abstract

The purpose of the study is to compare the Anthropometric measurements between the Hockey and Football players. A total number of Thirty Six (N=36) subjects were selected for the study in which Eighteen (n=18) male players had participated in Panjab University inter-college tournament in Football and eighteen (n=18) male players had participated in Panjab University inter-college tournament in Hockey during the session 2015-16. The athletes were selected by applying purposive sampling technique. The variables selected for measurement and comparison between the athletes were height, weight, arm length and leg length. The age of subjects ranged between 18 to 24 years. The Mean, Standard Deviation, Mean Difference and t-value were calculated to find out the significance of difference between both groups. The level of significance was set at 0.05. The result revealed no significant differences between the height, weight and leg length of the Football and Hockey players however there was significant difference between the arm length of both group. In conclusion there was no significant difference between the height, weight and leg length of the Football and Hockey players. However, the Hockey players have longer arms than the Football players.

Keywords: Anthropometric measurements, height, weight, arm length and leg length.

Introduction

Anthropometric measurements are the best applicable means for studying body, size, shape and composition. It helps greatly in sports talent selection, sports counselling and measurement of obesity for health related physical fitness.

One of the most important task for physical educationists is to measure different parts and components of human body. The scientific terminology given to the measurement of man is "Anthropometry" which is a word synthesized from two Greek words- 'Anthropos' means man and 'metreion' means to measure. Hence, anthropometry means- the measurements of human body. There are hundreds of human body measurements which have attracted the attention of many types of specialists like anatomists, physical educationists, anthropologists, human biologists, human physiologists, ergonomists, designers, artists, pediatricians, sports scientists, coaches etc. summarily, anthropometry may be defined as 'the measurement of human body and its parts with standardized techniques' (Kansal, 2008) [4].

Methodology

The athletes were selected by applying purposive sampling technique. The variables selected for measurement and comparison between the athletes were height, weight, arm length and leg length. The age of subjects ranged between 18 to 24 years. The Mean, Standard Deviation, Mean Difference and t-value were calculated to find out the significance of difference between both groups.

Sample

Total thirty six male subjects (N=36) who have participated in Panjab University inter-college tournament in their respective game. Eighteen subjects (n=18) participated in the game of Football while the other remaining eighteen subjects (n=18) participated in Hockey. All the subjects played their respective games during the session of 2015-16 at Panjab University. Purposive sampling technique was used for the selection of subjects. The age of the subjects ranged between 18 to 24 years.

Correspondence
Amolak Singh Bhullar
Assistant Professor of Physical
Education, SGGS College,
Sector-26, Chandigarh, Punjab,
India.

Tools

For Weight (kilograms) a weighing machine was used, for Height (centimeters) a stadiometer was used and for arm and leg length (centimeters) a measuring tape was used. Statistical Analysis:- The Mean, Standard Deviation, Mean Difference and t-values were calculated to find out the significance of differences between the selected anthropometric components of Hockey and Football players. The level of significance was set at 0.05.

Analysis of Data

The results with regard to the anthropometric variables height, weight, arm length and leg length are given in the tables below.

Height

Table 1: Significance of difference between the height of hockey and football players

Sport	Mean	Standard Deviation	Mean Difference	Obtained T-ratio	Table value of t ratio
Hockey	170.6	4.99	1.35	0.96	2.09
Football	171.95	3.80			

*Significant at 0.05 level

The above table shows that the Mean value of Hockey players is 170.6 and the Mean value of Football players is 171.95. Similarly it shows that the Standard Deviation of hockey players is 4.99 and 3.80 is the Standard Deviation of Football players. The Mean Difference between both groups was of 1.35. After calculations the value of the t-ratio is 0.96 whereas the table value of t-ratio is 2.09. As the obtained t-ratio is less than the table value of t-ratio. So there is no significant difference between the height of Hockey and Football players.

Weight

Table 2: Significance of difference between the weight of hockey and football players

Sport	Mean	Standard Deviation	Mean Difference	Obtained T-ratio	Table value of t ratio
Hockey	56	8.45	2.4	0.92	2.09
Football	58.4	7.88			

*Significant at 0.05 level

The above table shows that the Mean value of Hockey players is 56 and the Mean value of Football players is 58.4. Similarly it shows that the Standard Deviation of hockey players is 8.45 and 7.88 is the Standard Deviation of Football players. The Mean Difference between both groups was of 2.4. After calculations the value of the t-ratio is 0.92 whereas the table value of t-ratio is 2.09. As the obtained t-ratio is less than the table value of t-ratio. So there is no significant difference between the weight of Hockey and Football players.

Arm Length

Table 3: Significance of difference between the arm length of hockey and football players

Sport	Mean	Standard Deviation	Mean Difference	Obtained T-ratio	Table value of t ratio
Hockey	71.2	1.83	2.2	2.39*	2.09
Football	69	3.65			

*Significant at 0.05 level

The above table shows that the Mean value of Hockey players is 71.2 and the Mean value of Football players is 69. Similarly it shows that the Standard Deviation of hockey players is 1.83 and 3.65 is the Standard Deviation of Football players. The Mean Difference between both groups was of 2.2. After calculations the value of t-ratio is 2.39* whereas the table value of t-ratio is 2.09. As the obtained t-ratio is more than the table value of t-ratio. So there is a significant difference between the arm length of Hockey and Football players.

Leg Length

Table 4: Significance of difference between the leg length of hockey and football players

Sport	Mean	Standard Deviation	Mean Difference	Obtained T-ratio	Table value of t ratio
Hockey	93.05	2.52	0.35	0.14	2.09
Football	93.15	1.82			

*Significant at 0.05 level

The above table shows that the Mean value of Hockey players is 93.05 and the Mean value of Football players is 93.15. Similarly it shows that the Standard Deviation of hockey players is 2.52 and 1.82 is the Standard Deviation of Football players. The Mean Difference between both groups was of 0.35. After calculations the value of t-ratio is 0.14 whereas the table value of t-ratio is 2.09. As the obtained t-ratio is less than the table value of t-ratio. So there is no significant difference between the leg length of Hockey and Football players.

Findings & Conclusion

The study shows that that there is no huge difference between the height, weight and leg length of the players of both games. This may be because of the similarities of both the games as both the games require extensive running and other such activities. However, the arm length of the Hockey players seems to be significantly larger than those of the Football players. This provided the Hockey players with much larger range with the Hockey stick. As many of the subjects are still developing further training might bring even more changes, albeit much slowly, in their bodies in response to their training.

References

1. Barrow HM, McGee R. A Practical Approach to Measurement in Physical Education 3rd Edition. U.S.A.: Lea & Febiger, Philadelphia, 1979.
2. Nath S. Anthropometry – The measurement of Body Size, Shape and Form. New Delhi: Friends Publications, 2006.
3. Koley S. New Horizons in Kinanthropometry. New Delhi: Friends Publications, 2005.
4. Kansal DK. Test and Measurement in Physical Education 2nd edition. New Delhi: Sports & Spiritual Science Publications. ISBN: 81-902282-3-4 2008; 20:213.