# Anthropometric Characteristics of Sports Hostel and Non-Sports Hostel Hockey Players of Himachal Pradesh

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### ABSTRACT

*The present study was designed to compare the selected anthropometric variables of sports hostel and non-sports hostel players of Hockey. Ninety six male players of Himachal Pradesh (n=48 sports hostel and n=48 non-sports hostel) were selected as subjects. The age of the subjects ranged from 17 to 25 years. The anthropometric variables age, weight, height, forearm length, arm length, shoulder width and hip width are selected as criterion variables. The variables were assessed by the standardized test item. The objective of the study was to study and compare anthropometric variables between sports hostel players and non-sports hostel players. The data were collected from each group and statistically analyzed by using dependent 't' test. The results show that there was a significant difference in the variables of forearm length and hip width; however, in the variable of age, weight, height, arm length and shoulder width there was no significant difference in sports hostel and non-sports hostel Hockey players of Himachal Pradesh.*

**KEY WORDS :** Arm length, forearm length, shoulder width and hip width

## INTRODUCTION

In recent past years, the selection and development of talent in sports have been gaining emphasis. Of course, it involves integral approach of different sports specialists. The role of an emerging scientific discipline known as sports anthropometry is of great significance. It is the science that deals with the body measurements of athletes. The knowledge of this science is increasingly being appreciated by the sports administrators. The role of anthropometry as a sports science is perhaps one of the most crucial in this regard. This is essential because the physique, body composition, physical growth and one's motor development are of fundamental importance in developing the criteria of talent selection and development in sports (Sodhi, 1991). Many scientists had conducted anthropometric and somatotypic studies on various sports populations of national and international. It is important to note that research in India, in this particular field started during the past few years. In other countries; however, research in the disciplines concerning sports has been on

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since long (Hirata, 1979).

It is scientific specialization dealing with the measurement of persons in a variety of morphological perspectives, its application to movement and those factors which influence movement, including : components of body build, body measurements, proportions, composition, shape and maturation; motor abilities and cardio respiratory capacities; physical activities including recreational activities as well as highly specialized sports performance. (Ross, 1978)

The Knowledge of this science equips us with the techniques of various body measurements like height, body weight, diameters, circumferences and skinfolds thickness which ultimately deal with the assessment of human physique, body composition, physical growth, maturation and gross functions of the human body. The inter-relatioship between each of these above mentioned variables with the success in sports can be regarded as a proven fact today (Cureton et al, 1951).

The knowledge of the anthropometry is increasingly being appreciated by the sports administrators. Assessments of human physical performance through anthropometry helps to evaluate the physical structure and functions of individuals. Various researches suggest that suitable physique plays a predominant role for success in sports. (Cureton, 1951; Mathur, 1985; Sharma et al, 1990). The investigator in this study wanted to compare the anthropometric variables i.e. age, weight, height, forearm length, arm length, shoulder, width and hip width of sports hostel and non-sports hostel Hockey players of Himachal Pradesh.

## METHODOLOGY

To achieve the purpose of the study in hand, ninetysix players of Hockey practicing in sports hostel and non sports hostel of Himachal Pradesh were selected as subjects. All the sports hostels were located at different districts of Himachal Pradesh (Sundernagar of Mandi district, Nadaun of Hamirpur district and Bilaspur district). Non-sports hostel Hockey players were also taken from the above-mentioned districts. (n=48 players from three sports hostels and n=48 players were selected from non-sports hostel of three district).

The anthropometric variables age, weight, height, forearm length, arm length, shoulder width and hip widthare selected as criterion variables. The variables were assessed by the standardized test items. The data were collected from both groups and statistically analyzed by using dependent 't' test at 0.05 at 0.01 level of significance.

### Analysis and Interpretation of Data

The data pertaining to the variables in this study were examined by using dependent 't' test to find out the significant difference for each variables separately in order to determine the difference and tested at 0.05 and 0.01 level of significance. The analysis of dependent 't' test on data obtained for anthropometric level of sports hostel and non-sports hostel Hockey players have been analyzed and presented in Table 1 given below.

## RESULTS & DISCUSSION

**Table-1: Comparison of Mean, Standard Deviation, Mean Difference and t-value of Age, Weight, Height, Fore Arm Length, Shoulder Width and Hip Width of Sports Hostel and Non-Sports Hostel Hockey Players.**

| S.No. | Variable | Groups | N | Mean | S.D | M.D | t-value |
|---|---|---|---|---|---|---|---|
| 1. | Age | Sports Hostel Players | 48 | 15.9375 | 1.65550 | 1.65550 | 1.65550 |
| | | Non-Sports Hostel Players | 48 | 16.3958 | 1.06670 | | |
| 2. | Weight | Sports Hostel Players | 48 | 54.0000 | 8.22037 | 1.8958 | 1.168 |
| | | Non-Sports Hostel Players | 48 | 52.1042 | 7.67765 | | |
| 3. | Height | Sports Hostel Players | 48 | 166.8938 | 6.48594 | 1.3063 | 0.927 |
| | | Non-Sports Hostel Players | 48 | 165.5875 | 7.29869 | | |
| 4. | Fore arm length | Sports Hostel Players | 48 | 26.6167 | 1.60204 | 0.7208 | 2.015* |
| | | Non-Sports Hostel Players | 48 | 25.8958 | 1.89051 | | |
| 5. | Arm length | Sports Hostel Players | 48 | 75.2521 | 3.89877 | 0.8458 | 0.978 |
| | | Non-Sports Hostel Players | 48 | 74.4063 | 4.54839 | | |
| 6. | Shoulder Width | Sports Hostel Players | 48 | 40.0396 | 2.25046 | 0.4854 | 0.887 |
| | | Non-Sports Hostel Players | 48 | 39.5542 | 3.05154 | | |
| 7. | Hip Width | Sports Hostel Players | 48 | 28.5917 | 1.99849 | 0.8687 | 2.168** |
| | | Non-Sports Hostel Players | 48 | 29.4604 | 1.92694 | | |

Table value of 't' at 0.01 level=2.63 for df=94,    Table value of 't' at 0.05 level=1.99 for df=94

It is evident from Table 1 Srl. No 4, the mean value of players from sports hostel and non-sports hostel of Himachal Pradesh shows that mean value of fore arm length of sports hostel players is 26.6167 centimeters and the mean value of fore arm length of non-sports hostel players is 25.8958 centimeters. The calculated t-value is 2.015 which is greater than the 't' Table value. Therefore calculated t-value is statistically significant. Hence, it may be interpreted that sports hostel players have greater forearm length then non-sports hostel players.

It is evident from Table 1, Srl. No 7, the mean value of players from sports hostel and non-sports hostel of Himachal Pradesh shows that mean value of hip width of sports hostel players is 28.5917 centimeters and the mean value of hip width of non-sports hostel players is 29.4604 centimeters. The calculated t-value is 2.168 which is greater than the 't'

Table value. Therefore, calculated t-value is statistically significant. Hence, it may be interpreted that non-sports hostel players have larger hip width than sports hostel players.

In the rest of the variables, i.e., age, weight, height, arm length and shoulder width there exist no significance difference between sports hostel and non-sports hostel Hockey players.

The investigator had discussed about the finding in respect to the results obtained after statistical treatment given to the raw data of seven selected anthropometric variables from sports hostel and non sports hostel of Himachal Pradesh. Each of the variable who have significant 't'-value is discussed in comparison to the finding, separately.

The result presented in the Table 1, Srl. No. 4 indicated that the sports hostel players have more forearm length as compared to non-sports hostel players. There is significant difference established between the sports hostel and non sports hostel players. The formulated hypothesis is accepted in the variable of fore arm length.

The result presented in the Table 1, Srl. No. 7 indicated that the non-sports hostel players have more hip width as compared to sports hostel players. There is significant difference established between the sports hostel and non-sports hostel players. The formulated hypothesis is accepted in the variable of hip width.

## CONCLUSION

On the basis of present study researcher has reached on following conclusions:

1. Sports hostel players have more forearm length as compared to non-sports hostel players.

2. Non-sports hostel players have more hip width as compared to sports hostel players.

3. The two groups of sports hostel and non-sports hostel hockey players do not differ significantly on the variable of age, weight, height, arm length and shoulder width.

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