

A COMPARATIVE ANALYSIS OF ANTHROPOMETRIC CHARACTERISTICS BETWEEN BASKETBALL AND HANDBALL

PLAYERS

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ABSTRACT

The researchers of this study aims to know about the role of anthropometric characteristics between basketball and handball players performance. For this purpose, the investigators had selected forty (N=40) male inter-college level basketball and handball players between the age group of 18-25 years were selected as subjects. The subjects were purposively assigned into two groups: Group-A: Basketball Players (N₁=20) and Group-B: Handball Players (N₂=20). All the subjects were informed about the objective and protocol of the study. Student's t-test for independent data was used to determine the significant difference between basketball and handball players, unpaired t-test was employed for data analyses. To test the hypothesis, the level of significance was set at 0.05. It is concluded from the above findings that Insignificant differences between basketball and handball players in all the anthropometric characteristics.

Key Words: Anthropometric Characteristics, Basketball and Handball Players.

INTRODUCTION:

Anthropometrical and Physical variables of elite athletes are different among sports. In selection of athletes for a particular sport, the focus should be on those traits and abilities which have the most significant influence on sport performance, such as physiological and anthropometric characteristics. Kumar (1995) studied the relationship between selected anthropometric variables and performance in athletics programme of high schools and senior secondary school students. He concluded that performance in all running events 100 meters, 400 meters, 800 meters, 1500 meters, and 10,000 meters events have significant relation with age, body * Physical Edu. Teacher, St. Edwards School Shimla-1, Himachal Pradesh, (India) weight, height, leg length, thigh, calf, femur biocondylar, biacrominal, fat weight and lean body mass. Chauhan (2005) conducted a study on 40 volleyball players in relation to their explosive arm strength and anthropometric variables. Product moment method for correlations and Wherry Do

Little method for calculating multiple correlations, and developing regression equation, were used. Linear measurement, i.e. height, sitting height, trunk length, leg length, lower leg length, total arm length upper and for arm length, foot length; body girth, i.e. shoulder, chest, abdomen, hip, thigh; body diameter, i.e. biacromial, bitrochantric, femur biocondylar; and skin folds, i.e. biceps, triceps, sub scapular, supariliac, mid auxiliary, sum of four skin folds and body mass shows positive and significant correlations with explosive arm strength of volleyball players multiple correlation of height, bicrominal and elbow diameter, lean body mass taken together with explosive arm strength has been found significant at 1% level.

SELECTION OF SUBJECTS

For the purpose of the present study, forty (N=40) male inter-college level basketball and handball players between the age group of 18-25 years were selected as subjects. The subjects were purposively assigned into two groups: Group-A: Basketball Players (N₁=20) and Group-B: Handball Players (N₂=20). All the subjects were informed about the objective and protocol of the study. With the above criteria's in mind, the following variables were selected for the present study:

ANTHROPOMETRIC CHARACTERISTICS

- ❖ Leg Length
- ❖ Upper Leg Length
- ❖ Lower Leg Length
- ❖ Arm Length
- ❖ Upper Arm Length
- ❖ Lower Arm Length
- ❖ Calf Girth
- ❖ Thigh Girth

STATISTICAL TECHNIQUE EMPLOYED USED

Student's t-test for independent data was used to determine the significant difference between basketball and handball players, unpaired t-test was employed for data analyses. To test the hypothesis, the level of significance was set at 0.05.

Results

Table 1: Significant differences in the Mean scores of basketball and handball players on the variable anthropometric Characteristics.

Variables	Basketball Player =20		Handball Players =20		Mean Difference	SEDM	t-value	Sig.
	Mean	SD	Mean	SD				
Leg length	95.90	3.61	95.50	3.80	0.40	1.17	0.341	0.73
Upper Leg length	44.40	1.95	44.05	1.46	0.35	0.54	0.640	0.52
Lower leg length	51.50	3.70	51.45	3.76	0.05	1.18	0.04	0.96
Arm length	76.00	4.09	75.65	4.25	0.35	1.32	0.265	0.79
Upper arm length	29.95	1.35	29.97	1.23	0.02	0.41	0.235	1.00
Lower arm length	45.70	2.84	45.35	2.97	0.66	0.35	0.380	0.70
Calf girth	36.35	3.77	36.10	3.85	0.25	1.20	0.207	0.83
Thigh girth	89.10	7.67	89.20	7.48	0.10	2.39	0.0417	0.96

*Significant at 0.05 level

Degree of freedom= 38

LEG LENGTH

Table-1 presents the results of basketball and handball players with regard to the variable anthropometric Characteristics. The descriptive statistics shows the Mean and SD values of basketball players on the sub-variable leg length as 95.90 and 3.61 respectively. However, handball players had Mean and SD values as 95.50 and 3.80 respectively. The Mean Difference and Standard Error Difference of Mean were 0.40 and 1.17 respectively. The 't'-value 0.341 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the

mean values of both the groups, it has been observed that basketball players have demonstrated better leg length than the handball players.

UPPER LEG LENGTH

The descriptive statistics shows the Mean and SD values of basketball players on the sub-variable upper leg length as 44.40 and 1.95 respectively. However, handball players had Mean and SD values as 44.05 and 1.46 respectively. The Mean Difference and Standard Error Difference of Mean were 0.35 and 0.54 respectively. The 't'-value 0.640 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that basketball players have demonstrated better upper leg length than the handball players.

LOWER LEG LENGTH

The Mean and SD values of basketball players on the sub-variable lower leg length as 51.50 and 3.70 respectively. However, handball players had Mean and SD values as 51.45 and 3.76 respectively. The Mean Difference and Standard Error Difference of Mean were 0.05 and 1.18 respectively. The 't'-value 0.04 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that basketball players have demonstrated better lower leg length than the handball players.

ARM LENGTH

The Mean and SD values of basketball players on the sub-variable arm length as 76.00 and 4.09 respectively. However, handball players had Mean and SD values as 75.65 and 4.25 respectively. The Mean Difference and Standard Error Difference of Mean were 0.35 and 1.32 respectively. The 't'-value 0.265 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that basketball players have demonstrated better arm length than the handball players.

UPPER ARM LENGTH

The Mean and SD values of basketball players on the sub-variable upper arm length as 29.95 and 1.35 respectively. However, handball players had Mean and SD values as 29.97 and 1.23 respectively. The Mean Difference and Standard Error Difference of Mean were 0.02 and

0.41 respectively. The 't'-value 0.235 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that handball players have demonstrated better upper arm length than the basketball players.

LOWER ARM LENGTH

The Mean and SD values of basketball players on the sub-variable lower arm length as 45.70 and 2.84 respectively. However, handball players had Mean and SD values as 45.35 and 2.97 respectively. The Mean Difference and Standard Error Difference of Mean were 0.66 and 0.35 respectively. The 't'-value 0.380 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that have basketball players demonstrated better lower arm length than the handball players.

CALF GIRTH

The Mean and SD values of basketball players on the sub-variable calf girth as 36.35 and 3.77 respectively. However, handball players had Mean and SD values as 36.10 and 3.85 respectively. The Mean Difference and Standard Error Difference of Mean were 0.25 and 1.20 respectively. The 't'-value 0.207 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that basketball players have demonstrated better calf girth than the handball players.

THIGH GIRTH

The Mean and SD values of basketball players on the sub-variable thigh girth as 89.10 and 7.67 respectively. However, handball players had Mean and SD values as 89.20 and 7.48 respectively. The Mean Difference and Standard Error Difference of Mean were 0.10 and 2.39 respectively. The 't'-value 0.0417 as shown in the table above was found statistically insignificant ($P > .05$). But while comparing the mean values of both the groups, it has been observed that handball players have demonstrated better thigh girth than the basketball players.

CONCLUSION

It is concluded from the above findings that Insignificant differences between basketball and handball players in all the anthropometric characteristics.

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