



Comparison of selected anthropometric measurements between football and hockey players of Panjab University

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Abstract

The present study was undertaken to examine the differences in linear measurements between full back football and hockey players of Panjab University. This study was conducting on 60 football and hockey players with an aim to find out differences in certain linear anthropometric measurements between the fullback football (n=30) and fullback hockey (n=30). The data for the present study were collected in the inter college competition organized by Panjab University. Each player was tested for various anthropometric measurements necessary for estimation of body weight, height, sitting height and selected linear measurements of halfback footballers and hockey players. To analyse the difference in certain anthropometric measurements between two groups of football and hockey players were determined through 't' test. From the findings, it may be interpreted that fullbacks of hockey game possessed significantly lesser height, total arm length, leg length, upper leg length lower leg length & foot length as compared to halfbacks of football game. Further, the full backs of football game have depicted somewhat higher mean value for height, and lesser value for weight and sitting height in comparison to halfback of hockey game. But none of such mean differences were found to be significant. In case of body weight, sitting height and in linear measurements namely; foot breadth, there existed no significant differences between the fullback of football and hockey games.

Keywords: anthropometry, linear measurement

Introduction

Assessment of the human body is important to determine its relationship with risk of health problems such as overweight, growth failure, and eating disorders. Anthropometry is an important technique in the field of public health and nutrition. 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 since long (Hirata, 1979) [4].

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 science specialists. However, the role of anthropometry as a sports science is perhaps one of the most crucial in this regards. 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) [9].

The sports structure in India is fast changing because of the availability of increased facilities and sports environment. Awareness among the coaches and physical educationists towards the recent advances in sports sciences is growing rapidly. The role of an emerging scientific discipline known as sports anthropometry is of great significance. The Knowledge of this science equipments 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-relationship between each of these above

mentioned variables with the success in sports can be regarded as a proven fact today (Cureton *et al.*, 1951) [2]. The investigator in the underline study would like to compare the anthropometric variables i.e linear measurement between fullback players of football and hockey.

Methodology

To achieve the purpose of this study 60 football and hockey players i.e. halfback football (n=30), halfback hockey (n=30), who participated in the inter college completion organized by Panjab University were randomly selected and used as subjects in this study. Age group ranged from 18 to 25 years. Each athlete was tested for various anthropometric measurements necessary for estimation of body weight, height, sitting height and some selected linear measurements. A set of anthropometric measurements, which included body weight, height, sitting height, total arm length, leg length, upper leg length, lower leg length, foot length and foot length and foot breadth were taken into consideration for anthropometric measurements. Weighing wait, anthropometric rod and measuring tape were used for the measurements. To test the significance of mean difference between the football and hockey players, statistical technique of 't' test was applied.

Results and Discussion

Since the purpose of the study was to analyze the selected linear measurement of fullback players of football and hockey, these are explained with the help of different tables.

Table 1: Comparison of height, weight and sitting height between fullback players of football and hockey.

Variable	Footballers (n=30)			Hockey Players (n=30)			‘t’
	MEAN	S.D.	SEM	MEAN	S.D.	SEM	
Height (cm)	171.28	5.20	.95	168.44	4.26	.79	2.31*
Body Weight (Kg)	60.31	5.11	.93	61.28	3.01	.54	.89
Sitting Height (cm)	69.18	4.66	.85	69.78	6.58	1.20	.34

* Significant at .05 level ** Significant at .01 level

Table 1 depict the means, standard deviations and values of SEM for height, weight, sitting height of fullbacks players of football and hockey games. The mean value of height for fullbacks of hockey game was found to be 168.44 and for fullbacks of football game, it was computed to be 171.28, respectively. The t-value testing the significance of mean difference between the fullbacks of two games came out to be 2.31 which is significant at 0.05 levels of significance, for df 58. Hence, it may be interpreted that fullbacks of hockey game possessed significantly lesser height as compared to fullbacks of football game. Further, although the fullbacks of hockey game have depicted somewhat higher mean value for

body weight and sitting height in comparison to fullbacks of football. But none of such mean differences were found to be significant. So, it may be interpreted that in case of linear measurements namely; body weight and sifting height, there existed no significant differences among the fullbacks of football and hockey games. Hence, the Hypothesis that, “there would be no significant difference between fullback players of football and hockey in relation to selected linear measurements namely; height, weight, and sitting height,” is accepted only in case of weight and sitting height and stands rejected in case of height.

Table 2: Comparison of linear measurements between fullback players of football and hockey.

Variable	Footballers (n=30)			Hockey Players (n=30)			‘t’
	MEAN	S.D.	SEM	MEAN	S.D.	SEM	
Total Arm Length	74.67	3.04	.56	72.42	4.45	.81	2.66**
Leg Length	102.1	3.46	.63	98.66	5.17	.94	3.91**
Upper Leg Length	53.42	2.03	.37	51.67	2.56	.46	2.23*
Lower Leg Length	48.59	2.58	.47	46.99	4.03	.71	3.36**
Foot Length	25.60	1.57	.29	24.74	1.73	.32	2.01*
Foot Breadth	9.81	.52	.09	9.53	.97	.11	1.38

* Significant at .05 level ** Significant at .01 level

Table 4.12 depict the means, standard deviations and values of SEM for total arm length, leg length, upper leg length, lower leg length, foot length and foot breadth of fullbacks players of football and hockey games. The mean value of total arm length, leg length, upper leg length, lower leg length and foot length for fullbacks of hockey game was found to be 72.42, 98.66, 51.67, 46.99 and 24.74 and for fullbacks of football game, it was computed to be 74.67, 102.1, 53.42, 48.59 and 25.60, respectively. The t-value testing the significance of mean difference between the fullbacks of two games came out to be 2.66, 3.19, 2.23, 3.36 and 2.01 which is significant at 0.05 levels and .01 level of significance, for df 58. Hence, it may be interpreted, that fullbacks of hockey game possessed significantly lesser total arm length, leg length, upper leg length, lower leg length and foot length as compared to fullbacks of football game. Further, although the fullbacks of football game have depicted somewhat higher mean value for foot breadth in comparison to fullbacks of hockey game. But none of such mean differences were found to be significant. So, it may be interpreted that in case of linear measurements namely; foot breadth, there existed no significant differences among the fullbacks of football and hockey games. Hence, the hypothesis that, “there would be no significant difference between fullback players of football and hockey in relation to selected linear measurements namely; total arm length, leg length, upper leg length, lower leg length, foot length and foot breadth” is accepted only in case of foot breadth and stands rejected in case of total arm length, leg length, upper leg

length, lower leg length and foot length.

Discussion

Fullback players of football game were taller, lighter and possess greater value for total arm length, leg length, upper leg length, lower leg length, foot length and foot breadth and possess lesser value for sifting height than fullback of hockey game. There was significant difference established between the fullback players of football and hockey game in height, total arm length, leg length, upper leg length, lower leg length and foot length. However there was no significant difference in weight, sifting height and foot breadth. This indicates that fullbacks of football game have greater in height, total arm length, leg length, upper leg length, lower leg length and foot length but near about same in weight, sifting height and foot breadth than fullbacks of hockey game. In linear measurements, football players are taller in height it may be due to their larger leg length and foot length than their counterpart hockey players.

Conclusions

Fullback players of football game possess significantly greater value for height, total arm length leg length, upper leg length, lower leg length, and foot length than fullbacks of hockey game. However they do not differ significantly in weight, sitting height and foot breadth when compared with each other.

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