COMPARISON OF SELECTED ANTHROPOMETRICS VARIABLES OF INDIAN BASKETBALL PLAYERS

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INTRODUCTION

Basketball which originated as an indoor activity in America, infect, known as an American game, is basically a game of speed, strength and accuracy. Since its inception in 1891, it has not only developed from a slow moving game into a fast one, but has also become a game of high interest and joy to the players and spectators alike. In modern basketball, a player is required to continuously be on the move over certain period of time (40 min.), varying his pace from slow to fast or medium and vice-versa, and many times jumping, hopping and changing directions in movements. This puts a great deal of demand in terms of physical efforts on the part of each player. To really enjoy the game of basketball, one need to develop proficiency in the skills of ball handling, shooting for goals and defending against opponents play. The human physiques differ in thousand ways. It can be analyzed by studying the size, shape and form of an individual. The inter group comparison are made to understand the physical peculiarities of different populations. From such body measurement, it is also possible to estimate the distribution of fat and their development, bone and muscle development. It is essential to collect the data on anthropometrical and other responses of participants to general task and during the participation in different games/sports. Particular type of body size, shape and proportions are important pre-requisite for successful participation in many sports. Tanner (1964) had shown that those who were best in the world in 1960 Olympics have different events in which they competed. The quality of performance is related to the various basic traits such as maturation, body size, shape, proportion, composition and physique.

MATERIAL AND METHODS:

Participants: For the purpose of this study, ninety male basketball players of different universities and states who have participated in basketball championship of various levels were selected as subjects. They were divided into three groups such as beginners who have participated at college / district level competitions, the intermediate were those who have participated in interuniversity / state level competitions and advanced were those who have participated in All India Interuniversity / national level competitions.
Anthropometrics Variable: The selected anthropometrics variables were upper arm length, forearm length, sitting height, leg length, stature and percentage of fat.
Statistical Techniques: One-way analysis of variance (ANOVA) was employed to check the variability of selected groups. Post-hoc test Least Significant Difference was used to find out the significant difference between the means of various groups. In order to test the hypothesis, level of significance was set at 0.05

RESULTS

In order to compare the subjects belonging to different groups on selected anthropometrics variables, One-Way Analysis of Variance was used. The level of significance was 0.05.

TABLE 1

MEANS OF SELECTED ANTHROPOMETRICS VARIABLES OF BASKETBALL PLAYERS (N = 90):

S. No.	Anthropometrics Variable (unit)	Means of Basketball Players		
		Beginners (N= 30)	Intermediate (N= 30)	Advanced (N= 30)
1	Upper Arm Length (cms.)	30.53	29.17	31.72
2	Fore Arm Length (cms.)	47.83	47.72	49.47
3	Sitting Height (cms.)	86.42	85.33	88.23
4	Leg Length (cms.)	93.20	91.75	93.67
5	Stature (cms.)	179.62	177.08	181.90
6	Percentage of Fat	16.93	16.73	18.82

The subjects of selected groups were compared on selected anthropometrics variables. The results of analysis of variance are presented in Table 2.

TABLE 2

ANALYSIS OF VARIANCE OF SELECTED ANTHROPOMETRICS VARIABLES OF THE INDIAN BASKETBALL PLAYERS:

S. No.	Variable (unit)	Source of Variance	Df	SSb	SSw	F-ratio
1	Upper Arm Length (cms.)	B	2	97.71	48.85	4.41*
		W	87	962.98	11.07	
2	Forearm Length (cms.)	B	2	57.44	28.72	2.02
		W	87	1239.98	14.25	
3	Sitting Height (cms.)	B	2	128.84	64.42	4.55*
		W	87	1233.08	14.17	
4	Leg Length (cms.)	B	2	59.94	29.97	1.83
		W	87	1427.34	16.41	
5	Stature (cms.)	B	2	348.32	174.16	3.01
		W	87	5031.58	57.83	
6	Percentage of fat	B	2	79.27	39.64	2.13
		W	87	1622.48	18.65	

B = Between the Groups and W = Within the Groups.
* The required value of F-ratio at 0.05 levels is 3.10.

As shown in Table 2, the subjects of selected groups differed significantly only on two anthropometrics variables i.e. upper arm length and sitting height. The other anthropometrics variables like forearm length, leg length, stature and percentage of fat do not yield significant values of F-ratio at the selected level.

Since the values of F-ratios in case of upper arm length and sitting height of the subjects were found significant, therefore, the data were further subjected to the post-hoc test; the results are presented in Table 3.

TABLE 3:
MEAN DIFFERENCES OF ANTHROPOMETRICS VARIABLES OF THE INDIAN BASKETBALL PLAYERS:

S. No.	Variable (unit)	Means (cms.)			Mean Diff.
		Beginners	**Intermediate**	**Advanced**	
1	Upper Arm Length (cms.)	30.53	29.17		1. 36
		30.53		31.72	1.19
			29.17	31.72	2.55*
2	Sitting Height (cms.)	86.42	85.33		1.09
		86.42		88.23	1.81
			85.33	88.23	2.90*

* Significant at 0.05 level.

As exhibited in Table 3 that the comparison of means of upper arm length of the subjects of intermediate and advanced groups has shown the significant difference at the selected level of 0.05. The required value of critical difference was 1.70 only.

The comparison of the subjects of the intermediate and advanced groups also exhibited the significant difference in the means of sitting height. The required value of critical difference was 1.92 only.

Discussion of Findings:
As shown by the results in Table 3 that in case of upper arm length, the mean difference value between advanced and intermediate groups found significant at 0.05 level i.e. the upper arm length of the subjects of advanced group was more than the subject of the intermediate group. Also in case of sitting height, the mean difference value between advanced and intermediate groups found significant at 0.05 level i.e. the subjects of advanced group's sitting height was more than the subjects of intermediate group.

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