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A COMPARATIVE STUDY OF SKINFOLD MEASUREMENTS AND BODY COMPOSITION

VARIABLES OF BASKETBALL AND HAND BALL FEMALE PLAYERS

ABSTRACT The purpose of the present study was to compare the skinfold measurement and body composition variables of Basketball and hand ball female players. Competition causes players to react both physically and mentally in a manner which can affect their performance negatively or positively. Present study was designed to reveal the comparison of above stated variables. A total number of subject for the present study were 50 out of which 25 from basketball and 25 from hand ball female players who had participated atleast at inter collegiate level of Maa Shakumbhari University, Saharaanpur in the age group of 19 to 25. The Lange's skin fold caliper was used to measure the skin fold and the weight of the subjects were measured with the help of portable actuated weighing machine. For the purpose of the study, the mean value, standard deviations and 't' test were applied to analyze data. On the basis of the analysis of data hand ball female players found better mean values of triceps, thigh skin fold, body density, fat weight, percentage of fat and lean body mass than basket ball female players but there was no significant difference found in biceps and calf skin fold between basket ball and hand ball female players.

Keywords: Biceps, Triceps, Thigh, Calf skin fold, Body density, Fat percentage and Lean body mass.

INTRODUCTION Sports are usually governed by a set of rules or customs, which serve to ensure fair competition, and allow consistent adjudication of winner. Winning can be determined by physical events such as scoring goals or crossing a line first, or by the determination of judges who are scoring elements of the sporting performance including objective or subjective measures such as technical performance or artistic impression. Kinanthropometry is the study of human body measurement for use in anthropological classification and comparison. Kinanthropometry is defined as the study of human size, shape, proportion, composition, maturation, and gross function, in order to understand growth, exercise, performance, and nutrition. (Ross et all. 1980). Kinanthropometry is an unknown word for many people except thoses inside the field of sport science. Describing the ethymology of the ord Kinanthropometry can help illustrate simply what you are going to about. However if you have to say just few sentences about the general scope of it. Some problems will arise immediately it is a science. The skinfold estimation methods are based on a skinfold test, also known as a pinch test, whereby a pinch of skin is precisely measured by calipers at several standardized points on the body to determine the subcutaneous fat laver thickness. (Sarrfa, A; Garcia-Llop, LA; Moreno, LA; Fleta, J; Morellon, MP; Bueno, M (1998).

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Basketball is fast, exciting game played by two teams of five players' who many pass, throw, roll, and dribble the ball. The object of the game is to score point by throwing the ball into the opposing team's basket. Basketball which originated from America and has been must popular in that country has how become a game of international repute. Sodhi (1980) studied the top-ranking Indian national basketball and found that with the increasing standard of the participants the average stature was greater. The top class teams in the word have a greater average height than the teams of lower standard. A significant correlation was seen between the stature and performance in the competition. The value of correlation was very high with the field basket scores. Thus the greater the stature of a basketball, the better will be his performance. Basketball is one of the world's most popular and widely viewed sports. The National Basketball Association (NBA) is the most popular and widely considered to be the height level of professional basketball in the world and NBA players are the world's best paid sportsmen, by average annual salary per player. Handball continued to flourish in Scandinvia and Germany, and men's feld handball was showcased at the 1936 Summer Olympics in Berlin. After that, it would however take until the 1972 Summer Olympics in Munich before men's handball became a part of the Olympics, and women's handball wasn't added until the 1976 Summer Olympics in Montreal. Competition causes players to react both physically and mentally in a manner which can performance negatively or affect their positively. Present study was designed to reveal the comparison of skin fold measurement and body composition variables of basketball and handball female players.

METHODOLOGY

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To achieve the purpose of the study 50 female players (25 basketball & 25 handball female players) in the age group of 19 to 25 were selected randomlv as subiects. The participation of the players was at least at inter collegiate level of Maa Shakumbhari University. Saharanpur. The sources of the data for the present study were basketball and handball female players. The basketball and handball female players who had participated at least at Inter Collegiate tournament were selected as sources of the data. The research scholar conducted the tests on the respective subjects with the help of physical education teachers and concerned coaches. The Lange's skinfold caliper was used to measure the skinfold and the weight of the subjects were measured with the help of portable actuated weighing machine. For the present study, the mean value, standard deviation, 't' test were applied to analyze the data, different steps in 't' test were used and the final conclusions were drawn and it was also compared with the significant value at .05 & 0.01 level. The utilization of mean values, standard deviation and 't' test were made according to the requirement of the present study as per the statistical technique.

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RESULTS AND DISCUSSION

The finding of various parameters are discussed as under. Skin fold Measurements and Body Composition. The details for comparative mean value and SD values of Basketball and Handball female players were tabulated and values of 't' test with various steps value were also presented from Table no-1 & 2.

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TABLE NO 1
COMPARISON OF SKIN FOLD MEASUREMENT OF
RASKETRALL AND HANDRALL FEMALE PLAYERS

Variables	Basketball		Handball			
	Mean	S.D	Mean	S.D	SED	T-ratio
Biceps Skinfold	4.41	.33	4.26	0.37	.089	1.64*
Triceps Skinfold	5.19	.22	5.05	0.28	.067	1.98*
Thigh Skinfold	7.20	.81	6.52	1.08	.236	2.88**
Calf Skinfold	9.55	.32	9.33	0.39	111	1.92*
*Significant at 0.05 levels						

** Significant at 0.01 level

Table no. 1 (Row-1) reveals that the mean scores of $4.41 \pm .33$ of basketball player are better than the mean score $4.26 \pm .37$ of handball players on biceps of basketball and handball female players. The t-ratio is 1.64. It is no significant difference at 0.05 levels. Hence it proves that there was no significant difference between Basketball and Handball female players in Skinfold variable of biceps. Furthermore the mean value shown that Basketball were biceps in comparison of Handball female players. Table no. 1 (Row-II) reveals that the mean scores of $5.19 \pm .22$ of basketball player are better than the mean score $5.05 \pm .28$ of handball players on triceps of basketball and handball female players. The t-raio is 1.98. It is significant at 0.05 levels. Hence it proves that there was significant difference between basketball and handball in skinfold variable of triceps. Furthermore the mean value shows that Basketball were triceps in comparison of Handball. The hypothesis was rejected. Table no. 1 (Row-III) shows that the Mean scores of $7.20 \pm .81$ of basketball player are better than the mean score 6.52 ± 1.08 of handball players on thigh of basketball and handball female players. The t-ratio is 2.88. It is significant difference at 0.01 levels. Hence it proves that there was significant difference between basketball and Handball female players in Skinfold variable of thigh. Table no. 1

(Row-IV) reveal that the mean scores of 9.55 \pm .32 of basketball player are better than the mean score 9.33 \pm .39 of handball players on calf of basketball and handball female players. The t-ratio is 1.92. It is no significant difference at 0.05 levels. Hence it proves that there was no significant difference between basketball and Handball female players in Skinfold variable of calf.

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TABLE No 2
COMPARISON OF BODY COMPOSITION VARIABLES OF
BASKETBALL AND HANDBALL FEMALE PLAYERS

Variables	Basketball		Handba	all		
	Mean	S.D	Mean	S.D	SED	T-ratio
Body density	1.214	0.114	1.181	0.101	0.02	1.97*
Fat weight	8.031	1.75	7.516	1.798	.029	2.50**
Percent fat	14.93	1.587	14.81	1.625	.030	2.92**
Lean body	52.49	2.631	53.41	3.653	.028	3.77**
mass						
*Significant at 0.05 levels						

** Significant at 0.05 levels

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Table No. 2 (Row-I) shows that the mean scores of 1.214 ± 0.114 of basketball player are better than the mean score 1.181 ± 0.101 of handball players on body density of basketball and handball female players. The tratio is 1.97. It is significant difference at 0.05 levels. Hence it proves that there was significant difference between Basketball and Handball female players in Body Composition variable of body density. Table No. 2 (Row-II) shows that the mean scores of 8.031 ± 1.765 of basketball player are better than the mean score 7.516 ± 1.798 of handball lavers on fat weight of basketball and handball female players. The t-ratio is 2.50. It is significant difference at 0.01 levels. Hence it proves that there was significant difference between Basketball and Handball female players in Body Composition variable of fat weight. Table no. 2 (Row-III) revels that the mean scores of 14.93 \pm 1.587 of basketball players are better than the mean score 1 4.81 ± 1.62 of handball

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players on percent fat of basketball and handball female players. The t-ratio is 2.92. It is significant difference at 0.01 levels. Hence it proves that there was significant difference between basketball and Handball female players in Body Composition variable of percent fat. Table No. 2 (Row-IV) shows that the mean scores of 52.49 ± 2.631 of basketball player are better than the mean score 53.41 ± 3.653 of handball players on lean body of basketball and handball female players. The t-ratio is 3.77. It is significant difference at 0.01 levels. Hence it proves that there was no significant difference between Basketball and handball female players in Body composition variable of lean body.

CONCLUSION

On the basis of the analysis of data handball female players found with better mean values of triceps, thigh skinfold, body density, fat weight, percentage fat and lean body mass than basketball female players but there was no significant difference in biceps and calf skinfold between basketball and handball female players.

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