



COMPARATIVE ANALYSIS OF SELECTED KINANTHROPOMETRIC VARIABLES BETWEEN VARSITY LEVEL HANBALL AND VOLLEYBALL WOMEN PLAYERS

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Abstract

The purpose of the study was to compare selected kinanthropometric variables between varsity level handball and volleyball women players. Thirty varsity level Handball and Volleyball Women players each were selected randomly for the study. The subjects were measured on weight by weighing machine, height by stadiometer, arm length, thigh girth, calf by Lufkin anthropometric tape. The collected data was analyzed using independent 't' test to find out the significant difference between handball and volleyball players. The result of the study showed that volleyball players have greater weight, height and arm length than handball players. However, there was no difference in other variables.

Keywords: Handball, Volleyball, Kinanthropometric variables.

INTRODUCTION

Kinanthropometry is a 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 activity including recreational activity as well as highly specialized sports performance. Kinanthropometry is a scientific specialization closely allied to physical education, sports science, sports medicine, human biology, auxology, physical anthropology, gerontology, ergometry, and several medical disciplines (Eston & Reilly, 2008). Physical characteristics and body composition have been known to be fundamental to excellence in athletic performance (Mathur & Salokun, 1985). The top performance in sports is achieved if an athlete possesses the basic anthropometric characteristics suitable for the event. Therefore, the athletes in a particular sport must possess such typical characteristics which are of advantage to their performance. Body composition also makes an important contribution to an individual's level of physical fitness for performance, particularly in such sports that require one to carry one's body weight over a distance, which is facilitated by a large proportion of active tissue (muscle) in relation to a small proportion of fat tissue (Jain, 2004). Handball is the second fastest game in the world. Handball players require good speed and agility and a whole lot of other physical attributes. Body size and composition are some of the factors that make a successful handball

player.

Volleyball is a complex game of simple skills. Optimal physique is apparently an advantage to volleyball performance. Only when a volleyball team is collectively equipped with all the ideal anthropometric characteristics can the team win the dominance in a game (Chen, 2005).

OBJECTIVES OF THE STUDY

The main objective of the study was to compare the selected kinanthropometric variables between varsity level handball and volleyball women players.

METHODOLOGY

The subjects were selected from various colleges affiliated to Bharathidasan University, Tiruchirappalli. A total of sixty (n=60) varsity level handball and volleyball women players were randomly selected for the present study (handball-30), (volleyball-30). The age of the players ranged from 17 to 21. The players who are having experience in playing these games for at least four years were selected as subjects for the present study. Kinanthropometric variables selected for the study are height, weight, arm length, thigh girth and calf girth.

STATISTICAL TECHNIQUES

The 't' test was used to find out the significant difference between handball and volleyball players on selected Kinanthropometric variables. Level of significance was set at 0.05 level.

RESULT AND DISCUSSION**Table I.****SUMMARY OF MEAN, STANDARD DEVIATION AND INDEPENDENT 'T' TEST FOR VARSITY LEVEL HANDBALL AND VOLLEYBALL WOMEN PLAYERS ON WEIGHT**

Group	Mean	Standard Deviation(+)	't' value
Handball (n=30)	51.43	6.179	2.928*
Volleyball (n=30)	56.33	6.769	

*Significant at 0.05 level

From the table I mean values obtained for varsity level Handball and Volleyball women players were 51.43 & 56.33 respectively and 't' test value was 2.928. Since the obtained 't' test value of 2.928 was

greater than the table value 2.001 with df 58 at 0.05 level of confidence, it was concluded that the varsity level Handball and Volleyball women players had significant difference in the performance of weight.

Table II.**SUMMARY OF MEAN, STANDARD DEVIATION AND INDEPENDENT 'T' TEST FOR VARSITY LEVEL HANDBALL AND VOLLEYBALL WOMEN PLAYERS ON HEIGHT**

Group	Mean	Standard Deviation(+)	't' value
Handball (n=30)	1.54	.032	5.960*
Volleyball (n=30)	1.61	.048	

*Significant at 0.05 level

From the table II mean values obtained for varsity level Handball and Volleyball women players were 1.54 & 1.61 respectively and 't' test value was 5.960. Since the obtained 't' test value of 5.960 is greater

than the table value 2.001 with df 58 at 0.05 level of confidence, it was concluded that the varsity level Handball and Volleyball women players had significant difference in the performance of height.

Table III.**SUMMARY OF MEAN, STANDARD DEVIATION AND INDEPENDENT 'T' TEST FOR VARSITY LEVEL HANDBALL AND VOLLEYBALL WOMEN PLAYERS ON ARM LENGTH**

Group	Mean	Standard Deviation(+)	't' value
Handball (n=30)	71.46	3.29	2.626*
Volleyball (n=30)	73.71	3.33	

*Significant at 0.05 level

From the table III mean values obtained for varsity level Handball and Volleyball women players were 71.46 & 73.71 respectively and 't' test value was 2.626. Since the obtained 't' test value of 2.626 was

greater than the table value 2.001 with df 58 at 0.05 level of confidence, it was concluded that the varsity level Handball and Volleyball women players had significant difference in the performance of arm length.

Table IV.**SUMMARY OF MEAN, STANDARD DEVIATION AND INDEPENDENT 'T' TEST FOR VARSITY LEVEL HANDBALL AND VOLLEYBALL WOMEN PLAYERS ON THIGH GIRTH**

Group	Mean	Standard Deviation(+)	't' value
Handball (n=30)	51.92	4.90	1.328
Volleyball (n=30)	50.28	4.65	

*Significant at 0.05 level

From the table IV mean values obtained for varsity level Handball and Volleyball women players were 51.92 & 50.28 respectively and 't' test value was 1.328. Since the obtained 't' test value of 1.328 was less

than the table value 2.001 with df 58 at 0.05 level of confidence, it was concluded that the varsity level Handball and Volleyball women players had no significant difference in the performance of thigh girth.

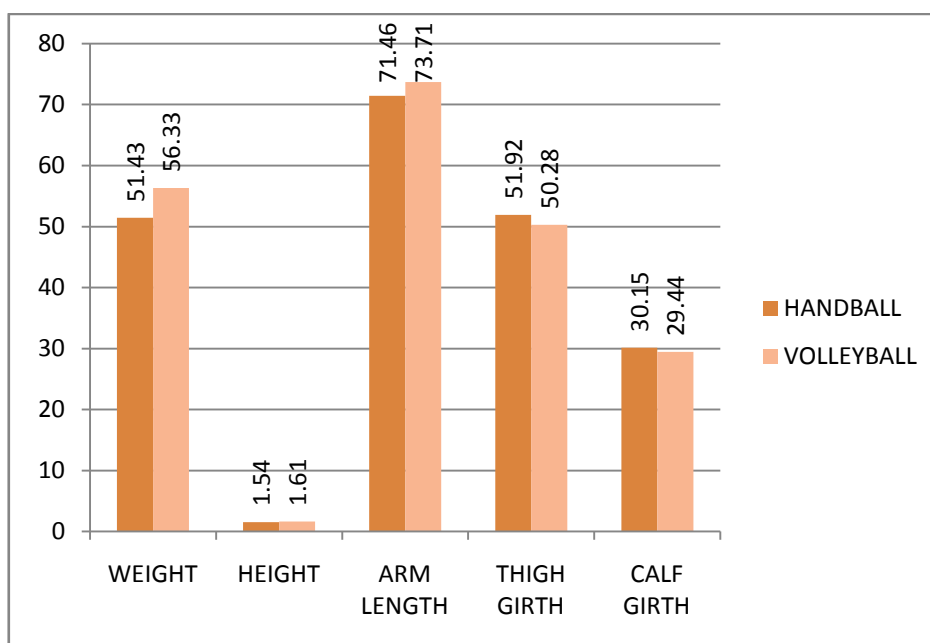
Table V.
SUMMARY OF MEAN, STANDARD DEVIATION AND INDEPENDENT ‘T’ TEST FOR VARSITY LEVEL HANDBALL AND VOLLEYBALL WOMEN PLAYERS ON CALF GIRTH

Group	Mean	Standard Deviation(±)	‘t’ value
Handball (n=30)	30.15	2.34	1.178
Volleyball (n=30)	29.44	2.36	

*Significant at 0.05 level

From the table V mean values obtained for varsity level Handball and Volleyball women players were 30.15&29.44 respectively and ‘t’ test value was 1.178. Since the obtained ‘t’ test value of 1.178 was less

than the table value 2.001 with df 58 at 0.05 level of confidence, it was concluded that the varsity level Handball and Volleyball women players had no significant difference in the performance of calf girth.



DICUSSION ON FINDINGS

The most recent studies related to team sports report a complexity of physical characteristics inherent to their practitioners, and one of the most important are kinanthropometric variables. In this study five such kinanthropometric variables were compared using ‘t’ test between varsity level handball and volleyball women players. In nature these two games have a lot of aerial play which involves jumping, blocking, attacking, throwing and shooting which make these kinanthropometry characteristics mandatory. It has been substantiated by the findings of Dhilipkumar(1984) in his study of comparison of selected motor components and anthropometric variables. The results of this study showed that there is a difference in weight, height, and arm length between the players of thse two games with volleyball players having better weight, height and arm length. Generally, practitioners of sport disciplines that require jumping and throwing with the upper limbs are taller, heavier and larger (Bayios et al., 2006;Drinkwater et al., 2007; Withers et al., 1997; Ziv and Lidor, 2009). However it was found that there was no difference in thigh girth and calf girth between varsity level volleyball and handball women players may be because of their

trained status.

CONCLUSION

1. The Handball and Volleyball women players of varsity level differ in weight and the Volleyball players were found to have better weight than Handball players.
2. The Handball and Volleyball women players of varsity level differ in height and the Volleyball players were found to have better height than the Handball players.
3. The Handball and Volleyball women players of varsity level differ in arm length and the Volleyball players were found to have better arm length than the Handball players.
4. However there was no difference in the other variables namely thigh girth and calf girth between varsity level Handball and Volleyball women players.

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