Comparison of Kinanthropometric Measurements and Co-Ordination Abilities between Different Sports

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Abstract

The aim of the research was to assess the kinanthropometric measurements and coordination skills of handball and volleyball players. In the Lucknow district, twelve male handball players and twelve male volleyball players took part in the study. Four anthropometric variables and four coordinative skills were selected for this inquiry once the data required for comparing the abovementioned anthropometric factors and coordinative abilities was obtained. The results of the Independent t-test, which was used to assess if there was a significant difference between the two groups' anthropometric variables and coordinate abilities, showed that there was no significant difference between the anthropometric variables and coordinate abilities of volleyball and handball players.

INTRODUCTION

Throughout competition, volleyball players frequently execute a variety of sprints, hops, and high-intensity court motions, making it an extremely dynamic sport. Physical performance and anthropometric factors have a major role in the successful execution of these movement patterns. Anthropometric analyses of handball players have often revealed that a somewhat large body mass is necessary for one-on-one play and that height is crucial for throwing and blocking. There was no difference in bulk between the two groups, but the better youth players as determined by selection were taller than "nonelected" kids. It follows that any correlation between the stature and heft of handball players and their performance is, at best, unclear. Since handball is a physically demanding activity, performance is said to be influenced by power, strength, speed, and endurance. In competitive athletics, the total player quality can be determined by comparing individual player quality within a team (e.g., starters vs. non-starters) or by comparing the ranking of the various teams in a tournament. Combining these factors results in increased sensitivity and, thus, an improved assessment of the general caliber of players in sports competitions. This study aimed to evaluate volleyball and handball players' kinanthropometric measures and coordination skills. The study's hypothesis was that volleyball and handball players would differ significantly in their anthropometric measurements and in their coordination abilities.

METHODOLOGY

Twelve male volleyball players and twelve male handball players, ages ranging from 18 to 24, were selected as research participants from their respective match practice groups in the Gwalior district. The anthropometric measurements and coordination abilities utilised in the study are displayed in Table 1.

Table 1

Selected Variables	Test	Criterion measures
Coordination Abilities	Orientation ability	Numbered Medicine Ball run test
	Differentiation ability	backward Medicine Ball throw test
	Reaction ability	Ball reaction exercise test
	Balance ability	long nose test
Anthropometric Measurements	Standing Height	Wall scale
	Weight	weighing machine
	Thigh girth	Gulic tape
	Calf girth	gulic tape

Kinnthropometric measurements and the coordinative ability tests suggested by Peter Hirtz were used to collect the data. All of the subjects were reviewed and shown before the exam started, giving students plenty of practice opportunities to get comfortable with the format. A complete warm-up preceded the acquisition of the data. The anthropometric measures and coordination of volleyball and handball players were evaluated using an independent t test. A significance level of 0.05 was established.

FINDING

Table 2
Volleyball and Handball Players Kinanthropometric Measurements

Variables	Volleyball			Handball			
	Mean	**S.D.**	**σDM**	**Mean**	**S.D.**	**σDM**	**t-test**
1. Height	165.83	4.77	1.40	160.91	4.10	1.18	1.23
2. Weight	64.41	4.34	1.31	64.58	7.40	2.13	.768
3. Thigh Girth	44.41	20.3	5.63	53.66	3.96	1.14	.563
4. Calf Girth	36.33	2.13	.63	37.25	2.66	.76	.368

$t_{0.05}(22) = 2.07$

Table 1 shows that there was no significant difference in standing height between volleyball and handball players since the calculated value (1.23) was less than the tabulated value (2.07) at the 0.05 level of significance. Players who played handball and volleyball did not significantly vary in terms of total body weight since the calculated value (.768) was lower than the tabulated value (2.07). There was no discernible difference in thigh circumference between handball and volleyball players at the 0.05 level of significance since the calculated value (.563) was less than the tabulated value (2.07). The calculated value (.368) between the handball and volleyball players' calf girths was less than the tabulated value (2.07), indicating no statistically significant difference.

Table 3
Volleyball and Handball Players Coordinative Abilities

Variables	Volleyball			Handball			t-test
	Mean	S.D.	σDM	Mean	S.D.	σDM	
1. Balance Ability	9.49	1.03	.29	9.86	1.44	.41	1.42
2. Differentiation Ability	9.46	3.12	.90	11.36	3.40	.96	1.58
3. Reaction Ability	.59	.25	7.25	.95	.37	.10	.683
4. Orientation Ability	7.42	.51	.14	7.21	.57	.16	.063

$t_{0.05}$ (22) = 2.07

Table 3 shows that there was no significant difference in Balance Ability between Volleyball and Handball players since the calculated value (1.42) was less than the tabulated value (2.07) at the 0.05 level of significance. There was no discernible difference in the Differentiation Ability of volleyball and handball players since the calculated value (1.58) was less than the tabulated value (2.07) at the 0.05 level of significance. There was no discernible difference in Reaction Ability between volleyball and handball players at the 0.05 level of significance since the calculated value (.683) was less than the tabular value (2.07). There was no discernible difference in Orientation Ability between volleyball and handball players at the 0.05 level of significance since the calculated value (.063) was less than the tabular value (2.07).

CONCLUSION

When comparing volleyball and handball players, all anthropometric metrics show no discernible differences. Apart from their preferred games of handball and volleyball, the subjects engaged in a range of activities. The subjects engaged in general activities for approximately three hours and volleyball or handball for approximately one hour. The negligible results must have been caused by the professional physical education students' exercise regimen. The data analysis showed no statistically significant differences between volleyball and handball players in any of the coordinative ability traits that were examined.This may be due to the fact that the selected subjects were physical education specialists who participated in a variety of activities for a significant portion of the day but just a small portion in the selected sports. Players of handball and volleyball who competed in other sports had to have offset the effects of the sports, leaving a statistically negligible difference. The information indicates that there is no statistically significant variation in anthropometric characteristics between handball and volleyball players. The main idea of the inquiry was therefore confirmed. The study's findings also show that there is no discernible difference between handball and volleyball players in the chosen coordination skills.

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