

INVESTIGATION OF SOMATOTYPE AND SERVING IN VOLLEYBALL

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Abstract

The purpose of the study was to compare the somatotype and serving performance among male college volleyball players. To achieve the purpose of the study, 36 volleyball players were selected from affiliated colleges of Manonmaniam Sundaranar University, Tirunelveli. The subjects were randomly selected and also, care was taken to include only those subjects who had to their credit, some distinguished performance at Intercollegiate and Interuniversity tournaments in the game of Volleyball. The age of the subjects were ranged from 20-25. The somatotype components such as endomorphy, mesomorphy and ectomorphy and serving were selected as dependent variables for this study. Somatotype components were tested by using Heath Carter's Anthropometric Procedure. Serving was tested by using repeated wall volley test. The collected data on selected criterion variables were statistically analyzed with one way analysis of variance (ANOVA) to find out the difference among the groups. Whenever F-ratio found to be significant, the Scheffe's test was used as post hoc test to find out the paired mean difference. In all cases 0.01 level of significant was fixed to test the hypothesis. It was concluded that, there was significant difference among the endomorphy, mesomorphy and ectomorphy volleyball players on serving ability.

Introduction

Volleyball and basketball are among the world's popular sports, played practically in every nation at varying levels of competence. Successful participation in these sports requires from each player a high level of technical and tactical skills and suitable anthropometric characteristics. All ball games require comprehensive abilities including physical, technical, mental, and tactical abilities. Among them, physical abilities of the players are more important as these have marked effects on the skill of players and the tactics of the teams because ball games require repeated maximum exertion such as dashing and jumping (Tsunawake, 2003). Such physical abilities are important for both volleyball and basketball players to achieve higher levels of performance.

To evaluate these physical abilities, the anthropometric measurements, parameters of the body composition such as the percent body fat (% FAT), fat-free mass (FFM) and somatotype components are often used. Studies on the physical characteristics of the human body to-date indicate that the morphological characteristics of athletes successful in a specific sport differ in somatic characteristics from the general population. Basketball and volleyball players are typically taller than the players of other games (Rahmawati et al., 2007). Basketball and volleyball require handling the ball above the head; therefore, having a greater height is an advantage in these sports (Kansal et al., 1986). Higher body mass however, is a hurdle for volleyball players in achieving good jumping height. Various researchers suggested that different body size, shape and proportions are beneficial in different physical activities (Bandyopadhyay, 2007).

Statement of the Problem

The purpose of the study was to compare the somatotype and skill performance among male college volleyball players.

Methodology

To achieve the purpose of the study, 36 volleyball players were selected from affiliated colleges of Manonmaniam Sundaranar University, Tirunelveli. The subjects were randomly selected and also, care was taken to include only those subjects who had to their credit, some distinguished performance at Intercollegiate and Interuniversity tournaments in the game of Volleyball. The age of the subjects were ranged from 20-25. The

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somotype components such as endomorphy, mesomorphy and ectomorphy and volleyball serving was selected as dependent variables for this study. Somotype components were tested by using Heath Carter's Anthropometric Procedure. Serving was tested by using repeated wall volley test. The collected data on selected criterion variables were statistically analyzed with one way analysis of variance (ANOVA) to find out the difference among the groups. Whenever F-ratio found to be significant, the Scheffe's test was used as post hoc test to find out the paired mean difference. In all cases 0.01 level of significant was fixed to test the hypothesis.

Analysis of data

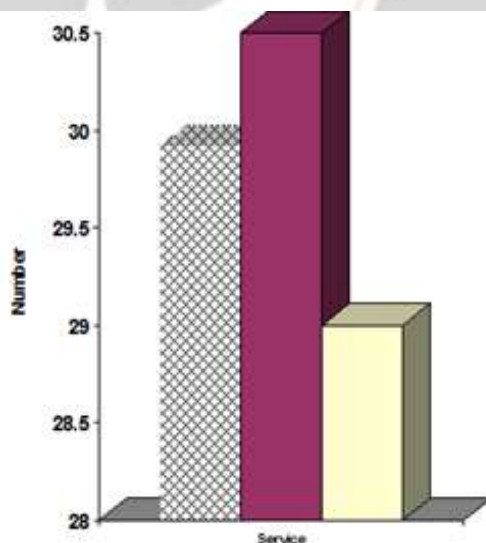
The influence of independent variables on each criterion variables were analyzed and presented in table I. Mean values on serving among the endomorphy, mesomorphy and ectomorphy volleyball players were graphically represented figure I.

TABLE I
SUMMARY OF MEAN AND ONE WAY ANOVA ON SERVICE AMONG ENDOMORPHY, MESOMORPHY AND ECTOMORPHY PLAYERS

Mean and SD			Source of Variance	Sum of Squares	df	Mean Squares	'F'- Ratio
Endomorphy	Mesomorphy	Ectomorphy					
29.92	30.50	29.00	Between	13.722	2	6.861	3.77*
3.94	2.11	2.59	Within	293.917	33	8.907	

(*significant at .05 level. Table value required for significance at .05 levels with df 2 and 33 is 3.28)

MEAN VALUES ON SERVICE AMONG THE ENDOMORPHY, MESOMORPHY AND ECTOMORPHY VOLLEYBALL PLAYERS



Discussion of Findings

The result of study indicates that there were a significant differences among the endomorphy, mesomorphy and ectomorphy volleyball players on service performance.

Similar findings were found in the studies on Malaysian male athletes (Nudri et al., 1996) and Turkish male athletes (Pelin et al., 2007) which reported that the height of volleyball players was greater when compared to other sports groups. Because the serving in volleyball require handling the ball above the head, having a greater height is an advantage in volleyball (Kansal et al., 1986).

Higher body mass however, is a hurdle for volleyball players in achieving good jumping height (Bandyopadhyay, 2007). Various researchers suggested that different body size, shape and proportions are beneficial in different physical activities (Kansal et al., 1986; Salalet et al., 2005).

Lower height of Indian volleyball players might be the one of the reason for their dismal performances at the international level (Morques and Marinho, 2009; Gabbett, 2008).

Several studies on the anthropometric characteristics and somatotype of basketball and volleyball players have been reported in literature (Fleck et al., 1985; Hakkinen, 1993; Hosler et al., 1978; Spence et al., 1980; Sallet et al., 2005; Apostolidis et al., 2003; Gualdi and Zaccagni, 2001; Pelin et al., 2009;) concluded the same findings.

It is inferred from the literature and from the result of the present study it was concluded that, somatotype characteristics influence the performance of serving in volleyball. Hence it also concluded that, somatotype characteristics should be considered properly while selecting and training the volleyball player.

Conclusion

There was significant difference among the endomorphy, mesomorphy and ectomorphy volleyball players on serving ability.

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