A role of selected anthropometric variables and volleyball performance

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Abstract

In recent years that there is a trend that more teams adopt the technique, tactics and physical performance in volleyball players. The skills like higher attack, powerful jumping-serve, attack from the back row and aggressive blocking are now widely used by volleyball players. All these bring forward greater demand for specific fitness and physique of volleyball players.Objective:The objective of the study was to know a role of anthropometric variables in volleyball playing ability. Procedure :to achieve the purpose of the study data was collected from 80 volleyball players who have represented their university volleyball teams in the inter University tournament. Variables considered for this study was Fore arm circumference, Upper arm girth, Chest girth ,Thigh girth, Calf girth., and Performance Variables such as Service accuracy, Spiking, Over Head pass, and Under hand pass . Data was collected by using standardised method. Findings : Data collected was treated with the product moment correlation statistical technique, the results showed that there is a significant relationship between Fore arm circumference, Upper arm girth, Chest girth, Thigh girth, Calf girth. and the volleyball playing ability.

Keywords: anthropometric,volleyball, performance

Introduction

Anthropometric variables have been tested in sports to determine how training methods are affecting the athlete's ability to perform. The evaluation of performance is very essential, changes of rules in the game of volleyball has further raised the level of various demands, anthropometric measurements and other areas. More mistakes by a player can cause a defeat to the team. Hence to have better quality and quantity of technique it is essential to have fine and correct movements to perform various techniques. Sports such as volleyball, anthropometric assessment is particularly important, as study of absolute size is an important element for analysis of athletic success.

It has also shown in recent years that there is a trend that more teams adopt the technique, tactics and physical performance in volleyball players. The skills like higher attack, powerful jumping-serve, attack from the back row and aggressive blocking are now widely used by volleyball players. All these bring forward greater demand for specific fitness and physique of volleyball players

In volleyball, technical and tactical skills, anthropometric characteristics and individual physical performance capacities are most important factors that contribute to the success of a team in competitions. Optimal physique is apparently an advantage to volleyball performance. Only when a volleyball team is collectively equipped with the entire ideal anthropometric characteristics can the team win the dominance in a game

Objective of the study

The main objective of the study was to find out the a role of selected anthropometric variables in volleyball performance of Inter University men volleyball players.

Procedure

To achieve the purpose of the study the data was collected from eighty volleyball men players, who participated in the Inter University volleyball tournament, were selected as subjects for this study. For this study Anthropometric measurements such as forearm circumference, Upper arm girth, Chest girth, Thigh girth, Calf girth. and Performance Variables such as Service accuracy, Spiking, Over Head pass, and Under hand pass were selected. Anthropometric variables Data was collected by using anthropometric rod and performance variables data was collected by using standard volleyball skills tests.

Findings

The data collected was analysed by using product -moment correlation technique and findings are presented in the following tables**.**

TABLE – 1

Shows the relationship between service accuracy and the selected anthropometric variables

Sl. No.	Variables	Correlation coefficient
1.	Service accuracy and fore arm circumference.	.447**
2.	Service accuracy and upper arm girth.	.452**
3.	Service accuracy and chest girth.	.536**

4.	Service accuracy and thigh girth	.324**
5.	Service accuracy and calf girth.	.317**

** Significance at the 0.01 level (2-tailed).

The above table number 1 indicate the serving accuracy significantly related to Fore arm circumference = .447, Upper arm girth = .452, Chest girth = .536, Thigh girth = .324, Calf girth = .317. Therefore, it is evident that fore arm circumference, upper arm girth, chest girth, thigh girth and calf girth contributed to serving accuracy.

TABLE – 2

Shows the relationship between Spiking ability and the selected anthropometric variables

Sl. No.	Variables	Correlation coefficient
1.	Spiking ability and fore arm circumference.	.420**
2.	Spiking ability and upper arm girth.	.425**
3.	Spiking ability and chest girth.	.444**
4.	Spiking ability and thigh girth	.226*
5.	Spiking ability and calf girth.	.284**

** Significance at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The above table number 2 indicate the Spiking ability significantly related to Fore arm circumference = .420, Upper arm girth = .425, Chest girth = .444, Thigh girth = .226, Calf girth = .285. Therefore, it is evident that fore arm circumference, upper arm girth, chest girth, thigh girth and calf girth contributed to Spiking ability.

TABLE – 3

Shows the relationship between Over head pass and the selected anthropometric variables

Sl. No.	Variables	Correlation coefficient
1.	Over head pass and fore arm circumference.	.412**
2.	Over head pass and upper arm girth.	.380**
3.	Over head pass and chest girth.	.532**
4.	Over head pass and thigh girth	.270*
5.	Over head pass and calf girth.	.312**

** Significance at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (1-tailed)

The above table number 3 indicate the Over head passing ability is significantly related to Fore arm circumference = .412, Upper arm girth = .380, Chest girth = .532, Thigh girth = .270, Calf girth = .312. Therefore, it is evident that, fore arm circumference, upper arm girth, chest girth, thigh girth and calf girth contributed to Over head passing ability.

TABLE – 4

Shows the relationship between Underhand pass and the selected anthropometric variables

Sl. No.	Variables	Correlation coefficient
1.	Under hand pass and fore arm circumference.	.375**
2.	Under hand pass and upper arm girth.	.336**
3.	Under hand pass and chest girth.	.439**

4.	Under hand pass and thigh girth	.254*
5.	Under hand pass and calf girth.	.296**

** Significance at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (1-tailed).

The above table number 4 indicate the under hand passing ability is significantly related to Fore arm circumference =.375, Upper arm girth = .336, Chest girth = .439, Thigh girth = .254, Calf girth = .296. Therefore, it is evident that fore arm circumference, upper arm girth, chest girth, thigh girth and calf girth contributed to under hand passing ability.

Conclusions

With in the limitation of the study, the selected anthropometric variable forearm circumference, upper arm girth, Chest girth, Thigh girth, calf girth, are significantly related to volley ball playing ability. It is established that body build plays an important role in achievements in many sport since it provides a basis for the formation and improvement of movement techniques, specific physical performance. Volleyball sport has high requirements in both anthropometric characteristics of the players. Therefore, talent identification lays much importance on them. Despite this, in a sport such as volleyball, several elements in the in anthropometric profile such as forearm circumference, upper arm girth, Chest girth, Thigh girth, calf girth all can influence competitive success.

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