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Correlation of anthropometric measurements and volleyball players service accuracy ability

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Abstract
The performance divergence has confined the researcher to reveal the basic performance traits. The total make up of athletes does not rely on one or two components; there may be many factors that collectively contribute to the performance standard. Purpose: The purpose of the study was to know the correlation of anthropometric measurements and volleyball player's service accuracy ability. Methodology: To achieve the purpose of the study data was collected from 80 (eighty) volleyball players who have represented their university volleyball teams in the intervarsity tournament. Variables considered for this study was Height, weight, Leg length, Arm length, Fore arm length, Fore arm circumference, Upper arm girth, Chest girth, Thigh girth, and Calf girth and playing ability variable Service accuracy. Data was collected by using standardized method. Results: Data collected was treated with the product moment correlation statistical technique, the results showed that there was a significant relationship between the selected anthropometric measurements and the volley ballplayers service accuracy ability.

Keywords: service accuracy, volleyball, anthropometric measurements

1. Introduction
Volleyball is a sport played by two teams on a playing court divided by a net. There are different versions available for specific circumstances in order to offer the versatility of the game to everyone. The object of the game is to send the ball over the net in order to ground it on the opponent's court, and to prevent the same effort by the opponent. The team has three hits for returning the ball (in addition to the block contact). The ball is put in play with a service: hit by the server over the net to the opponents. The rally continues until the ball is grounded on the playing court, goes "out" or a team fails to return it properly. 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.
Volleyball service is a skill commonly described as the first element of the defense, essential in preventing a team from siding out. Since the introduction of the rally point system by the F.I.V.B. in 1998, the service has become an even more important skill in the game. Basically, a good service in combination with an efficient defensive strategy neutralizes the opponent's opportunity of creating a point. On the other hand, a mistake while serving leads to an error and consequently to a point, not just to a side-out as it used to be with the traditional scoring system.
Anthropometry is the science of measuring human body and its parts. It is used us an aid to the study of human evaluation and variation. The study of human physical measurements is deal by another science anthropometry, which has wide application as one of the essential parameters constituting the selective diagnostics of any game or sport. The study of "Body Type" has a significant place in the field of sports. Anthropometric techniques are used to measure the absolute and relative variability in size and shape of the human body. In modern volleyball measurement, evaluation analysis and interpretation of player's team performance are very important in scientific training and development of top class team. Match analysis and tests are the most important means to obtain data and subjective information on the performance of players and team during the match. Scouting has become a tool used by every coach to prepare their team for the competition.
The purpose of the study was to know the correlation of anthropometric measurements with service accuracy Ability of Inter University Volleyball men players.

2. Methodology
To achieve the purpose of the study the data was collected from eighty volleyball men players, who participated in the Inter University volleyball tournament.

2.1 Selection of Variables
For this study Anthropometric measurements such as Height, weight, Leg length, Arm length, Fore arm length, Fore arm circumference, Upper arm girth, Chestgirth, Thighgirth, and Calf girth and playing ability variable Service accuracy were selected. Data pertaining to anthropometric measurements were collected by The height was measured with an stadiometer, The weight was measured with an weighing machine, and other anthropometric measurements was with gullick tape, and standardized tests were used for Service accuracy ability.

3. Results
The data collected from the subjects were treated with Product Moment Correlation to know the correlation of anthropometric measurements and volleyball players service accuracy ability by using Statistical package for social

sciences 20th version and results are presented in the following tables.

To establish the correlation between the selected anthropometric measurements and service accuracy of inter university men volleyball players Pearson moment correlation (r) was computed and data pertaining to this, has been presented in table-1.

Table 1: correlation between the selected anthropometric measurements and service accuracy of inter university men volleyball players.

Variables	Correlation co-efficient
Service accuracy and height.	.846
Service accuracy and weight.	.565
Service accuracy and leg length.	.685
Service accuracy and arm length.	.681
Service accuracy and fore arm length.	.718
Service accuracy and Fore arm circumference	.447
Service accuracy and Upper arm girth.	.452
Service accuracy and Chest girth.	.536
Service accuracy and Thigh girth	.324
Service accuracy and Calf girth	.317

Significance at the 0.05 level

The above table indicates the serving accuracy significantly related to Height (r=.846), weight (r=.565), Leg length (r=.685), Arm length (r=681), Fore arm length (r=718), Fore arm circumference (r=.447), Upper arm girth (r=452), Chest girth (.536), Thigh girth (r=.324), and Calf girth (r=317). Therefore, it is evident that Height, weight, Leg length, Arm length, fore arm length, fore arm circumference, Upper arm girth, Chest girth, Thigh girth, and Calf girth contributed to serving accuracy.

4. Conclusions

Within the limitation of the study, the Anthropometric Measurements Height, weight, Leg length, Arm length, fore arm length, fore arm circumference, Upper arm girth, Chest girth, Thigh girth, and Calf girth, are significantly related to volley ball player service accuracy ability. Athletic success is multi factorial and that anthropometric attributes are not only and definitive factor in athletic performance. Despite this, in a sport such as volleyball, several elements in the in anthropometric profile such as Height, weight, Leg length, Arm length, Fore arm length, Fore arm circumference, Upper arm girth, Chest girth, Thigh girth and Calf girth all can influence competitive success.

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