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Relationship Of Anthropometric Measurement With Performance Of Volleyball Players

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Abstract:

The main purpose of this study is to find out the relationship of anthropometric measurement with performance of volleyball players. The allied objectives of the study are given: 1) To find out the anthropometric measurement of volleyball players; 2) To evaluate the performance of volleyball players; 3) To find out the correlation of anthropometric measurement with performance of volleyball players. To conduct the study 25 male players were randomly selected in volleyball Association, Amravati. All the players at least represented Junior National level tournaments of volleyball. The age group of subject ranged between 12 to 14 years. All the variables measured in each athlete individually during rest hours with the help of standard scientific instruments and techniques. The anthropometric measurement and volleyball performance variable was selected for the present study. To find out the relationship between anthropometric measurements and volleyball performance, the descriptive statistics (i.e. Mean and Standard deviation) and correlation coefficient of Weight, Height, Arm length and Lower Leg length, Accuracy of Service, Wall Volleying and Medicine Ball Throw was taken and significance was set at 0.05 levels. Result: There was a positive relationship in between the anthropometric measurement with the performance of players.

Keywords: Anthropometric, Performance, Volleyball Players.

Introduction:

In the field of physical education one of the objective of testing and measuring is to place a proper person into a proper activity & thus to avoid miss-fit or far as possible, consequently to discuss what factor are needed for an activity is the purpose of activity analysis that is job analysis, where as to decide what factors are present in the individual is the purpose of personal analysis. Thus there is an attempts to find some type of relationship between the individual and the activity. The performance in different games and sports depend upon many dimensions and out of which bodily dimensions are there. These bodily or physical dimensions are also called as anthropometric measurement.

Anthropometry is that branch of anthropology which is concerned with taking of measurement of human body (Hanson and Bukire, 1974, p.258).

This definition has been confined to the kinds of measurements commonly used in associating physical performance with body build. Anthropometric measurements were the control concern of the first phase of the scientific era. Measurement which begin in 1860. Current interest in anthropometrical measurement focused on three areas, growth patterns & prediction of success in motor activities as well as assessment of obesity. Anthropometric measurement of physical status was expanded quite materially to include consideration of body type and the relations of physique do one health

Anthropometry means man and more addition, mentary means measurement. Training seems to effective, performance of an individual. The major role of physical performance is partly depended upon the physique and body composition of an individual. Montaque (1960) opinioned that body composition is a key to human physique. During adolescence, children of the same age group show variation in their growth status.

Measurement of body size includes such descriptive information as height, weight and surface area while measurement of body proportion describes the relationship between height and weight and among length width and circumference of various body segments. It has been founded that top athlete in some sports tends to have those proportion that bio-mechanically and the particular performance required.

Athlete for superior performance in any games is selected on the basis of his physical structure and body size, which has proved to appropriate for high performance in the given sports.

The oldest form of measurement knows as anthropometric, It is the measurement of human body parts. Anthropometry was of interest in ancient India and later in Egypt. Where the study was under taken to find one's part or component of the body that could be used as a common measure for all body parts. In many game and sports the physical structures especially the height, and arm length provided definite advantage (Kansal, 1996, p.22).

A Variety of factors are involved in actually attaining performance goals. There are number of important performance perquisites for good performance in sports. Like, aerobic capacity, the ability to use anaerobic reserves, good eyesight, speed, endurance, co-ordination, tactics, intelligence etc. But in short we can say that the co-relations of these factors are prime factor, which is responsible for better performance.

Environment plays an important role in the quality of athlete's performance. There are many things the athlete can do or adoptions he can make to prepare or unexpected. The athlete who trains at sea level is forces to make rather extensive physiological adjustments to compete successfully at higher attitudes. Training in cool climate does little to prepare the athlete to compete of extreme heat and humidity. Similarly sudden exposure to cold can have a drastic influence an athlete performance if they have an opportunity to acclimatize to the colder environment. Environmental factors include exposure to extreme of heat, cold, humidity and contest at altitude (Singh et. al., 2003, p.323).

Statement of Problem:

Relationship Of Anthropometric Measurement With Performance Of Volleyball Players

Purpose of Study:

1. To find out the anthropometric measurement of volleyball players.
2. To evaluate the performance of volleyball players.
3. To find out the correlation of anthropometric measurement with performance of volleyball players.

Methodology:

To conduct the study 25 male players were randomly selected in volleyball Association, Amravati. All the players at least represented Junior National level tournaments of volleyball. The age group of subject ranged between 12 to 14 years. All the variables measured in each athlete individually during rest hours with the help of standard scientific instruments and techniques as presented in Table -I.

Criterion Measure:

The anthropometric measurement and volleyball performance variable was selected for the present study.

Table –I: Selected variables their tests and unit of measurement

Sr. No.	Variable	Test/Equipments used	Unit
	Anthropometric Measurement		
1.	Weight	Weighing Machine	Kg
2.	Height	Stadiometer	cm
3.	Arm length	Steel Tape	cm
4.	Lower Leg length	Steel Tape	cm
	Performance		
	Performance	**SAI Volleyball Test**	
5.	Accuracy of Service test	Volleyball court, Net, 10 mini volleyballs	Number of correct services
6.	Wall Volleying Test	Training Wall, marking chalk, mini	Number of cycles
7.	Medicine Ball Throw Test	3 Medicine balls 1kg, tape, marking powdr	Meters

Analysis of Data:

To find out the relationship between anthropometric measurements and volleyball performance, the descriptive statistics (i.e. Mean and Standard deviation) and correlation coefficient of Weight, Height, Arm length and lower leg length, Accuracy of Service, Wall Volleying and Medicine Ball Throw was taken and significance was set at 0.05 levels. Mean scores and standard deviation of all selected variables are presented in Table - II.

Table – II: Mean and standard deviation of all selected variables

Variables	Weight	Height	Arm length	Lower Leg length	Accuracy of Service	Wall Volleying	Medicine Ball Throw
Mean	167.520	51.960	70.900	52.812	7.080	3.400	15.336
S.D.	4.797	5.287	5.913	4.084	1.552	0.707	0.658

The analysis of the data shows the results of the study of selected variables, weight, height, arm length, lower leg length, accuracy of service, wall volleying and medicine ball throw. The mean ± Standard deviation of weight in the test were (167.520 ± 4.797), height (51.960 ± 5.287), arm length (70.900 ± 5.913), Lower leg length (52.812 ± 4.084), accuracy of service (7.080 ± 1.552), wall volleying (3.400 ± 0.707), and medicine ball throw (15.336 ± 0.658) respectively.

Table – III: Relationship of Anthropometric measurements with performance of volleyball players

Sr. No.	Variable Correlated	Correlation Coefficient		
		Accuracy of Service test	Wall Volleying Test	Medicine Ball Throw Test
1	Height	0.587*	0.612*	0.575*
2	Weight	-0.033	-0.296	-0.030
3	Arm length	0.413*	0.547*	0.548*
4	Lower Leg length	0.371	0.373	0.402*

*Significant at .05 level of confidence r .05 (23) 0.396

An analysis as shown in table-III indicated that height is significantly correlated with Accuracy of Service test (r=0.587), Wall Volleying Test (r=0.612) and medicine ball throw test (r=0.575) were statistically significant as the value obtained were much higher than the tabulated value (0.396) required, to be significant at 0.05 level with 23 degree of freedom.

An analysis as shown in table-III indicated that weight is significantly not correlated with Accuracy of Service test (r=-0.033), Wall Volleying Test (r=-0.296) and medicine ball throw test (r=-0.030) were statistically not significant as the value obtained were less than the tabulated value (0.396) required, to be significant at 0.05 level with 23 degree of freedom.

An analysis as shown in table-III indicated that arm length is significantly correlated with Accuracy of Service test (r=0.413), Wall Volleying Test (r=0.547) and medicine ball throw test (r=0.548) were statistically significant as the value obtained were much higher than the tabulated value (0.396) required, to be significant at 0.05 level with 23 degree of freedom.

An analysis as shown in table-III indicated that lower leg length is significantly correlated with medicine ball throw test (r=0.402) were statistically significant as the value

obtained were much higher than the tabulated value (0.396) required, to be significant at 0.05 level with 23 degree of freedom.

An analysis as shown in table-III indicated that lower leg length is significantly not correlated with Accuracy of Service test (r=0.371) and Wall Volleying Test (r=0.0.373) were statistically not significant as the value obtained were less than the tabulated value (0.396) required, to be significant at 0.05 level with 23 degree of freedom.

Discussion on Finding

The findings on study revels that performance was substantially related to anthropometric measures of the volleyball players. This may be attributed to the following reasons from the correlation table, it was seen that height, arm length and lower leg length was substantially related with the performance. As the event volleyball is strength, endurance dominated event in this event a player has to cultivate specific arm length, the table also shows that height was also more effective in enhancing the performance of volleyball players.

Conclusion

On the basis of the result drawn with the mentioned methodology the following conclusion were soughed out:

There was a positive relationship in between the anthropometric measurement with the performance of players.

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