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## Relationship between structural and functional ability of Volleyball Players

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### Abstract

The aim of the study was find out the relationship between structural and functional ability of volleyball players. For the purpose of the study twenty (20) subjects were selected randomly from different colleges of the Institute of Professional Studies, Gwalior, (M.P.) all the subjects were state level players who have participated in various state level Volleyball competitions. The age group of the subjects ranged between 18 to 28 years. The test use in this study for the collection of data volleyball playing ability Modified Brady Wall Valley Test were selected because they were found to be most reliable and have been used very often in the professional of physical education and sports. Under this test following criteria were measured standing height, weight, Arm Ratio, Speed, Strength, Endurance and playing ability of the subjects. The data pertaining to standing height, weight, for arm and Upper Arm Ratio and Strength was collected in the indoor stadium of Institute of Professional Studies, Gwalior (M.P.). To find out the relationship of selected structural and functional variables to the Volleyball playing ability single Shot research design was applied. To find out the relationship of selected structural and functional variable, the Karl Pearson product moment Correlation was use to test the hypothesis and level of significant was set at 0.05. Within the limitations of the present study it is concluded that there is no significance relationship exist between two structural variables i.e. Weight and for and Upper Arm ratio with Volleyball playing ability.

**Keywords:** Relationship among structural, functional abilities

### Introduction

Physical activity is an inherent trait of human being. It develops its own in a natural way. It becomes all the way imperative to identity the nature and the degree of this natural talent and nature modify and refine it to get the cherished outcome. The children perform a lot of activities such as running Jumping, Throwing, Catching, Kicking, Striking etc. these activities are known as natural or universal skills because they seem common to all the people all over the globe irrespective of geographical, regional, national or racial barriers. These natural abilities ultimately develop into more and more complex and specific sports' skills. The acquisition, modification and perfection of these skills due to the increased capabilities of the individual that come with grow and development. The extent or the degree of these natural traits differs from person.

This skill combines together and develops into complex forms of highly specific movement obtained through rigorous and strenuous practice and special training. They lay foundations for the fundamental skill and the ultimate complex sports technique. Modern sports are the outcome of long and concerted efforts through improvement, modification and refinement of this simplest form over the ages.

Competition is a product of modern times. It is a challenge which motivate, stimulates and inspire the individual to run faster, jump higher and through farther and to strive to do better than before and to exhibit greater strength, endurance and skill to dominate others. In the modern world of sports, the competition attach greater significant to winning as the philosophy of participation in the field of games and sports has undergone a notable change.

Volleyball which is an excellent all-around team sports has been widely accepted as highly competitive as well as a recreational games, throughout the world. It is now recognized as one of the most breath tacking and dramatic sports of the Olympics both of the players and spectators

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view of point. The game provide the vide opportunity for the development of the strength, speed, endurance, agility, neuromuscular skill and co-ordination of all part of the part body by the various action involved in it. Such as Running, Jumping, Bending, starching and other movement which call for balance and poise. As a sports volleyball has immense recreational and carry over value and thus it meet all the requirement of all excellence form of physical activity.

The said concept seems to be very much applied in the games of volleyball where lot of importance is given on the selection of the players based on the structural and functional measures. One of the recent trend in the game of Volleyball is the emphasis on “block “and in relation to that selecting the players above tow meter average height which further necessaries on the part of the spikers to have the similar physical characteristics as well as tremendous amount of jumping ability to outclass the blockers in the actual games situations.

Sally Tester and Charles Franzein are of the opinion that power and strength of leg muscles. Abdominal and back muscles and muscles of the arm and shoulder griddle play vital role in the performance of the Volleyball players.

Besides strength and power, quickness combined with ability and flexibility is the main components of specific fitness required in Volleyball. The development of these components should be related to the specific conditions of the game as they play an important role in achieving significant results in various techniques of offence and defense.

**Methodology**

For the purpose of the study twenty (20) subjects were selected randomly from different colleges of the Institute of Professional Studies, Gwalior, (M.P.) all the subjects were state level players who have participated in various state level Volleyball competitions. The age group of the subjects ranged between 18 to 28 years. The test use in this study for the collection of data volleyball playing ability Modified Brady Wall Valley Test were selected because they were found to be most reliable and have been used very often in the professional of physical education and sports. Under this test following criteria were measured standing height, weight, Arm Ratio, Speed, Strength, Endurance and playing ability of the subjects. The data pertaining to standing height, weight, for arm and Upper Arm Ratio and Strength was collected in the indoor stadium of Institute of Professional Studies, Gwalior (M.P.). Speed and Endurance test were conducted on the ground of the Institute of Professional Studies, Gwalior (M.P.). To ensure that data collected were reliable, there are two trails were given to each subjects. To find out the relationship of selected structural and functional variables to the Volleyball playing ability single Shot research design was applied. To find out the relationship of selected structural and functional variable, the Karl Pearson product moment Correlation was use to test the hypothesis and level of significant was set at 0.05.

**Analysis of data and results of the study**

In order to determine the relationship between structural and functional ability of Volleyball players, Karl Pearson’s product moment correlation method was used and the variable such as standing Height, Weight, Arm ratio, Speed, Strength and Endurance was considered as independent variables, whereas the Brady Wall Valley test was considered as dependent variables.

**Table 1:** Descriptive analysis of structural variable of male Volleyball Players

S. No.	Descriptive statistics	Height	Weight	Arm Ratio
1	Mean	168	63.00	1.29
2	Standard deviation	8.08	3.74	0.15
3	Minimum	154	52	1.14
4	Maximum	181.00	67	1.83
5	Range	27.00	15.00	0.69

Table no. 1 indicate that descriptive analysis of height of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 168, 808, 154.0, 181.00 and 27.00 respectively. Above table also indicate descriptive analysis of weight for male Volleyball players where mean, standard deviation, minimum, maximum, range and values of weight factors are 63, 3.74, 52, 67 and 15 respectively. Above table also indicate descriptive analysis of force arm and upper Arm Ratio for male Volleyball players where mean, standard deviation, minimum, maximum, range 1.29, 0.15, 1.14, 1.83, and 0.69 respectively.

**Table 2:** Descriptive analysis of structural variable of male Volleyball Players

S. No.	Descriptive statistics	Height
1	Mean	27
2	Standard deviation	2.24
3	Minimum	23
4	Maximum	31
5	Range	8

Table no. 2 indicate descriptive analysis of playing ability of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 27, 2. 24, 23, 31, 8 respectively

**Table 3:** Descriptive analysis of functional variable of male Volleyball Players

S. No.	Descriptive statistics	Speed	Strength	Endurance
1	Mean	7.22	7.25	2.04
2	Standard deviation	0.85	2.35	0.20
3	Minimum	6.40	4.00	1.26
4	Maximum	9.30	12.00	2.37
5	Range	2.90	8.00	1.11

Table no. 3 indicate descriptive analysis of Speed (50 meter Dash) of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 7.22, 0.85, 6.40, 9.30 and 2.90 respectively

Above table indicate descriptive analysis of Strength (Pull Ups) of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 7.25, 2.35, 4.00, 12.00 and 8.00 respectively.

Above table indicate descriptive analysis of Endurance (600 meter) of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 2.04, 0.20, 1.26, 2.37 and 1.11 respectively.

**Table 4:** Relationship of structural variables to playing ability to male Volleyball Players

S. No.	Variables	Correlation Coefficient
1	Height and playing ability	0.53
2	Weight and playing ability	0.16
3	Fore Arm and Upper Arm Ratio and Playing ability	-0.16

Significant at 0.05 level of significance  $r_{0.05r(18)} = .444$

Table no. 4 revealed significance relationship between height and playing ability ( $r=-0.53$ ) and no significant relationship between weight and playing ability ( $r=0.16$ ), Arm ratio and playing ability ( $r=-0.16$ ).

**Table 5:** Relationship of functional variables to playing ability to male Volleyball Players

S. No.	Variables	Correlation Coefficient
1	Speed playing ability	-0.44
2	Strength and playing ability	0.29
3	Endurance and playing ability	-0.97

Significant at 0.05 level of significance  $r_{0.05(18)} = .444$

Table no. 5 revealed significance relationship between Speed and playing ability ( $r=-0.44$ ) and no significant relationship between strength and playing ability ( $r=0.29$ ) and Endurance playing ability ( $r=-0.97$ ).

### Discussion of Finding

It is found that there is no significance relationship exist between two structural variables i.e. Weight and for and Upper Arm ratio with Volleyball playing ability. There may be so many rezones for it but one of the main reason for it is variation in body structure of selected subjects and in in case of height there is significant relationship exist with Volleyball playing ability as we all know that height is one of the key factor for a good Volleyball player. I.e. it is found significantly correlated with Volleyball playing ability.

Finding of this study also show that none of selected functional variable is correlated with Volleyball playing ability. Their might a significant role played by these functional variables in performance in Volleyball playing but here it's not show. It may be due to sampling error or wrong selection of test.

### Conclusion

One the basis of this study following conclusion may be made that

1. Only one structural variable i.e. height found significantly correlated with volleyball playing ability whereas remaining structural variables was not found significantly correlated with Volleyball playing ability.
2. None of functional variable is found significantly correlated with Volleyball playing ability.

### Recommendations

In the light of the conclusion, following recommendation is made

1. That a similar study may be undertaken on different age groups.
2. That a similar study may be conducted with different structural variables.
3. That a similar study may be conducted with different functional variables.
4. That a similar study may be undertaken on women of different age groups.

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