



## **Relationship among standing height leg explosive power and shoulder strength on volley ball male players volleyball spiking accuracy**

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### **Abstract**

The purpose of the study is to find out the relationship among standing height, leg explosive power and shoulder strength on volleyball male players volley ball spiking ability of the university level players. To achieve the purpose of the study fifteen male volleyball players from kuvempu University were selected to take part in the study. The following criterion variables spiking ability and independent variables standing height, explosive power and shoulder strength were considered in the study. The selected variables were assessed by using standard testing procedures. The selected variables like standing height were measured by using wall mounted scale leg explosive power by vertical jump and shoulder strength by medicine ball throw. The volleyball players spiking accuracy was measured by the trials spiked by the attackers in the special court markings in the spiking zones. In order to study the relationship between the criterion and determinant variables and the inter relationship between determinant variables were computed, using the method of Pearson's product moment correlation. The level of significance was accepted at  $p < 0.05$ .

**Keywords:** standing height, explosive power, shoulder strength, spiking accuracy

### **Introduction**

The Word 'Sport' comes from the old French word called Desport which means "Leisure", but this word has changed its connotation with the passing time. Now sports are no longer believed to be practiced only in leisure time. Today they are one of the major parameters to judge a country's development and growth and are fast becoming great career options for the future generations.

Change is perhaps the only unchanged thing in the world. Today we live in space age and technological gigantism and the impact of advanced scientific technology is seen on every set up. These prodigious social changes have a definite impact on various programs which have opened new vistas undreamed by human beings a few years ago. Competition is natural activity which is inevitable in human life and every educational set up should permit and assist with the preparation of individual for "battle of life". Change and challenges are twin laws of nature as they affect every aspect of human life. Changes are taking place all around and because of these changes new challenges present themselves. Man is constantly trying to meet these challenges and excel his previous performance every time.

Sports by their very nature are enjoyable, challenging, absorbing and require a certain amount of skill and physical conditions. In the order of human values conquest in field of sports hold a unique place. It is a combination of success, victory, triumph and domination of some over other team mates and friends. The sublimity of competition lies in the loser's acclaim for the winners, which along with the friendly and shake acknowledge both defeat and triumph.

Volleyball which is an excellent around team sport has been widely accepted as a highly competitive as well as a

recreational game throughout the world. It is now recognized as one of the most breath taking and dramatic sport of the Olympics both from the players and spectators view point. There are many sports which a person can choose from one such sport is volleyball which is a very popular modern indoor and outdoor game with fast and quick action.

The skill of spiking in volleyball is a very valuable weapon for any team. Most teams gain a majority of their points on successful spikes. The spike takes very little time to travel from the attackers hand to the floor therefore there is little time for defensive team to relocate its players on the court in strategic position before the ball is contacted on the spike. The relationship between morphological variables and sports performance is the object of study of anthropometry and is an important element to be analyzed. Studies have pointed out the importance of physical characteristics for different sports such as volleyball and basketball. Successful sporting performance at elite levels of competition often depends heavily on the explosive leg power of the athletes involved. In many individual sports such as track and field events, gymnastics and diving the ability to use high levels of strength as quickly and as explosively as Research possible is essential to perform at elite levels. During the game, muscle strength is required, because each player performs such dynamic movements as kicks, headers, tackling, and sprinting. So, power, endurance and muscle strength are needed to compete in the game the relationship between muscle strength and performance in the field is a subject of controversy in many research fields dealing with muscle power. Data has been produced for many elite individual and team sport athletes for physical and physiological characteristics, including standing vertical jump scores, related to specific sports performance.

Greater the general quality of speed, strength, power, endurance, flexibility and agility the more quickly will be the specific skill he learned and once learned the better will be the performance Subjects and Variables The purpose of the study is to find out the relationship among body height, explosive power and shoulder strength on spiking ability of the university level players.

**Purpose of the study**

The purpose of the study is to find out the relationship among standing height, leg explosive power and shoulder strength on volleyball male players volley ball spiking ability of the university level players

**Methodology**

To achieve the purpose of the study the data was collected from fifteen male volleyball players from Kuvempu University, who participated in the Interuniversity volleyball tournament.

**Selection of Variables**

The selected variables were assessed by using standard testing procedures. The selected variables like standing height were measured by using wall mounted scale, explosive power by vertical jump and shoulder strength by medicine ball throw. The spiking accuracy was measured by the below following procedures .Explosive Power Test The performer dips his finger in chalk powder and stands sidewise against the wall, keeping the arm raised completely above the head keeping the fingers straight. Then he jumps as high as possible and touches the wall. The reading shall be noted by keeping eyes as level with the chalk mark on the graduated marking. Standing testers score is subtracted from the jumping reach. Shoulder Strength Test (Overhead forward medicine ball throw) To evaluate the explosive strength of the shoulder, 2kg Medicine ball and measuring tape was used. The subject stands behind the starting line (Parallel stance with feet comfortably a part), holding 2 kg medicine ball with both hands and he then reforms a medicine ball overhead forward throw to cover maximum distance. Out of three trials the

**Table 2:** Correlation Coefficient Values on standing Height leg Explosive Power Shoulder Strength and volleyball male players volley ball spiking accuracy

| Variables           | Spiking | Standing Height | Leg Explosive Power | Shoulder Strength |
|---------------------|---------|-----------------|---------------------|-------------------|
| Spiking             |         |                 |                     |                   |
| Standing Height     | .831**  |                 |                     |                   |
| Leg Explosive Power | .920**  | .717**          |                     |                   |
| Shoulder Strength   | .771**  | .572*           | .627*               |                   |

\*Significant at .05 levels is .641

**Results**

The correlation coefficient of spiking accuracy with standing height, leg explosive power and shoulder strength was significant at 0.05 levels, since the obtained value of .831, .920 and .771 respectively was greater than the required value of 0.641 for 13 degrees of freedom. The results of the study indicate that the selected variables were highly correlated with volleyball male players spiking accuracy.

**Conclusion**

From the results obtained after analyzing the data, it was

average of the best two distances were recorded in meters. Spikes for Accuracy Test a standard volleyball court was utilized for the purpose of assessing the accuracy of the spike. One half of the court is marked with specific zones each subject will be given two sets of three attempts each for cross court attack and straight zone attack respectively. The subjects toss the ball to a setter who positions himself at the extreme line and sets the ball in accordance to the liking of the concern attackers. The subjects were asked to spike the ball cross court during the first three trials and spike straight during the next three trials. Points will be recorded in accordance to the zone in which the ball lands and also on the specific attack zones (cross court zones and straight zones). The scoring is the sum of the scores which the target values of total 6 trials.

**Statistical Technique**

In order to study the relationship between the criterion and determinant variables and the inter relationship between determinant variables were computed, using the method of Pearson’s product moment correlation. The level of significance was accepted at  $p < 0.05$ .

**Analysis of the Data**

The mean and standard deviation values among the criterion and the selected independent variables were presented in table-I

**Table 1:** Mean, Standard Deviation of standing Height leg Explosive Power Shoulder Strength and volleyball male players volley ball spiking accuracy among volleyball male Players

| Variables         | number | mean   | Standard deviation |
|-------------------|--------|--------|--------------------|
| Standing height   | 15     | 181.06 | 7.03               |
| Explosive power   | 15     | 66.33  | 10.16              |
| Shoulder strength | 15     | 13.95  | 1.63               |
| Spiking accuracy  | 15     | 83.05  | 5.99               |

The correlation coefficient values on standing height, explosive power and strength endurance on playing ability of volleyball male players were presented in table-2.

concluded that height, shoulder strength, explosive power have a significant relationship with spiking accuracy among volleyball male players.

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