

## **Relationship of Flexibility and Strength to Playing Ability in Female Volley Ball**

**LT. Bhawana Timal**  
**Asst prof. Smt Sharda Johari NPG Degree College**  
**KASGANJ**

### **Abstract**

The purpose of the study is to determine the relationship of Flexibility and Strength to the playing ability in female volley ball. The subjects were 24 female volleyball players of LNIPE, Gwalior. Who had participated at least inter-collegiate level. The age of subject were ranging between 18 to 24 yrs. The following flexibility and strength measures i.e. wrist flexibility, Ankle flexibility and trunk flexibility and shoulder flexibility, Arm strength, leg strength, abdominal strength, grip strength were choosen as criterion measure for this study to test the hypothesis. The measurement were taken with the help of Dynamometer, goniometer and other variables i.e. Arm strength and abdominal strength were measured with correctly executed pull ups and bent knee sit ups and recorded in kg, degree centimeter and second respectively. The product moment method of finding out correlation was applied for analysis with in the limitations of the study. The finding reveals that there is significant relationship of leg strength, Arm strength, abdominal strength and shoulder flexibility to playing ability in volley ball except grip strength, wrist and ankle flexibility were as trunk flexibility showed negative but insignificant correlation with playing ability in female volley ball.

### **Introduction**

Sport is very vital sector of public activity in almost every country. All government, regardless of their ideologies appear to be committed to betterment lagged behind in this context, and for the past three decades, effort have been made to develop suitable infrastructure to improve upon prevailing standard of performance in international sport.

These days coaches and Physical Education Teachers are experimenting an ways and means to find out the best, the easiest and most economical methods of training for the sportsman in terms of time spend and to get maximum benefit out of it. In the complete training of the sportsman, systematic development of several areas is to be emphasized and for this one must have the knowledge of the relevant physical and motor fitness qualities to be possessed and developed by their sportsman along with technical and tactical knowledge.

The game of volleyball requires a conditioning regime which develops, flexibility, muscle strength, power and agility, all of which must be integrated to achieve the optimum skill performance from each player. If we analyze the skill of an volleyball player it has been seen that he must be good in offensive as well as the defensive aspect of the game. The Primary requisite for good volley ballar is powerful spiking, good strength in shoulder and arm muscles apart from this he should posses, agility and flexibility. Strength and quickness combined with flexibility and the main components of specific fitness required in volleyball. Therefore, through the present study an attempt has been made to scientifically establish the relationship of selected strength and flexibility measures to the performance in volleyball.

### **Objective**

The objective of the study was to determine the relationship of flexibility and strength to playing ability in female volleyball.

### **Methodology**

Twenty four female volleyball players of the LNPE who had at least participated at inter collegiate level, were selected as subject for the study. The age of the subjects were ranging between 18-24 yrs. Arm strength, abdominal strength, leg strength, grip strength, wrist flexibility, ankle flexibility and trunk flexibility and shoulder flexibility were choosen as criterion measure for this study to test the hypothesis. To establish the relationship between independent variable i.e. Arm strength, wrist flexibility ankle flexibility, trunk flexibility, shoulder flexibility and dependant variable i.e. playing ability in females volleyball, product moment method of finding out correlation was employed. The data on selected variable were recorded with the help of standard procedure.

### Result

The statistical analysis of data an arm strength, abdominal strength, leg strength, grip strength, wrist flexibility, ankle flexibility, trunk flexibility collected from 24 volleyball players of LNIPE, GWP is presented below :

**Table 1**

**Relationship of Arm strength, Abdominal strength, leg strength and grip strength to playing ability female in volleyball.**

Variable	Coefficient of Correlation 'r'
Arm strength and volleyball playing ability	0.56 <sup>a</sup>
Abdominal strength and volleyball playing ability	0.51 <sup>a</sup>
Leg strength and volleyball playing ability	0.88 <sup>a</sup>
Grip strength (RH) and volleyball playing ability	0.14 <sup>b</sup>
Grip strength (LH) and volleyball playing ability	0.16 <sup>b</sup>

<sup>a</sup> Significant at 0.05 level of confidence.

<sup>b</sup> not significant at 0.05 level of confidence.

The value of 'r' required to be significant at 0.05 level of confidence with 22 degree (N-2) of freedom was 0.404.

An examination of Table 1 clearly reveals that the Arm strength, abdominal strength and leg strength contributes significantly to playing ability in female volleyball with leg strength dominating the other two. Since the correlated value of 'r' between Arm strength, Abdominal strength and leg strength are 0.56, 0.51 and 0.88 respectively, which are significantly higher then the tabulated value required to be significant at 0.05 level of confidence on the other hand lend Grip strength does not show any significant relationship with volleyball playing ability as the obtained values of correlations i.e. 0.14 and 0.16 are much less then the table value of 0.404.

**Table 2**

**Relationship of wrist flexibility, Ankle flexibility, Trunk flexibility and shoulder flexibility to playing ability in female volleyball.**

Variable	Coefficient of Correlation 'r'
Wrist flexibility and volleyball playing ability	0.05 <sup>b</sup>
Ankle flexibility (right foot) and volleyball playing ability	0.18 <sup>b</sup>
Ankle flexibility (Left foot) and volleyball playing ability	0.05 <sup>b</sup>
Trunk flexibility and volleyball playing ability	- 0.21 <sup>b</sup>
Shoulder flexibility and volleyball playing ability	0.70 <sup>a</sup>

<sup>a</sup> Significant at 0.05 level of confidence.

<sup>b</sup> not significant at 0.05 level of confidence.

The value of 'r' with 22 (N - 2) degree of freedom was 0.404.

An examination of Table 2 clearly reveals that out of the selected flexibility measures i.e. wrist flexibility, Ankle flexibility, Trunk flexibility and shoulder flexibility. Only shoulder flexibility is significantly related to playing ability in volleyball as the value of calculated 'r' is 0.70 which is higher than tabulated of 0.404.

## **Conclusions**

With in the limitations of the study the following conclusion may be drawn :

1. Arm strength, Abdominal strength and leg strength were significant related to playing ability in volleyball.
2. Shoulder flexibility contributed significantly to playing ability in volleyball.
3. Grip strength did not correlate significantly to playing ability in volleyball.
4. Wrist and Ankle flexibility had insignificant relationship to playing ability in volleyball.
5. Trunk flexibility showed negative but insignificant relationship to playing ability in volleyball.

## **Conclusions**

1. Johnson, Dr. Barry, and Nelson, Jack. K. Practical Measurement for Evaluation in Physical Education, Delhi; Surjeet Publication, 1982.
2. Singh, Hardayal. Sports training general theory and methods. Patiala; Netaji Subhash National Institute of sport, 1982.
3. Smith, Timothy Physical Consideration for volleyball. Athletic Journal 62 (January 1982) : 44.
4. Uppal, A. K. and Singh, Rajendra. Effect of Eight week participation in physical education and conditioning programmers of flexibility of women student, SNIPES Journal (April 1983) : 42.
5. Philips Allen D. and Hornak James E., Measurement and Evaluation in physical education, New York : John Wiley and sons, 1976 : 239.
6. H.S. Sodhi, Sport anthropometry, P.112.

