Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

Comparing of Selected Motor Fitness Parameters between offensive and defensive Volleyball Players

Dr. Ashish Pratap Singh

Associate Professor, Department of Physical Education, K.S. Saket P.G. College, Ayodhya, U.P.

Abstract:

Volleyball players were broadly classified into two, namely, offensive and defensive. Depending upon their positions, the requirements of strength and speed parameters of these players are bound to differ. In this study, the researcher was interested to scientifically find out whether there exists any difference on speed and strength of the offensive and defensive volleyball players. The obtained results reaveled that there was no significant difference in speed between volleyball offensive and defensive players and there was no significant difference in explosive strength between volleyball offensive and defensive players. The study proved that in volleyball while a attacker jumped with speed the defender also need to jump up and block the ball as such there was **no significant difference between these players**

Keywords—Speed , Strengt;Offensive; Defensive; Volleyball; Players

INTRODUCTION

Volleyball has developed into a highly competitive sport which requires a high level of physical, physiological and psychological fitness. The game at a high level of competition requires quicker sudden movements and fast reaction. Volleyball matches have no time limit and matches can last for several hours, if the teams are evenly matched. Successful play in volleyball is not the outcome of power alone but it is the product of the combined display of power and tactical abilities. Modern game of volleyball is characterized by accuracy, concentration, and cleverness.[i] Volleyball has changed beyond recognition in the past three decades from an unorganized sport into a highly competitive, requiring a high level of physical fitness, mental alertness, and mastery over techniques. “Volleyball has a great need for volitional qualities, with equal technical and tactical mastery the team whose players show

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

the greatest desire for victory will win. As of any game, the volleyball players were broadly classified into two, namely, offensive and defensive. Depending upon their positions, the requirements of strength and speed parameters of these players are bound to differ. the researcher was interested to scientifically find out whether there exists any differences on speed and strength of the offensive and defensive volleyball players.

Scientific research in the field of physical education and sports is required for a systematic development of physical education and sports. Throughout the world many different games have been played with a ball. In some games players use a part of the body to propel the ball while in other games players play with some equipment, such as racquet, bat and stick. Competition in all fields of life especially in the field of physical education and sports have increased so must that one can not excel in sports other without taking any advantage of his own physique. A person is said to be fit from activity only if his structure firms it. Endurance, strength, power, flexibility, agility and speed are important general physical fitness components needed for team games like volleyball, football, hockey, basketball and various other games. The study of physical fitness has an important and valuable place in modern society due to its close relationship to every individual. It is the most important objective of physical education and an essential requirement of human performance.

The individuals who are physically fit with proportional and developed body are considered healthy. He has adequate vascular strength for his need and this enables him to perform the activities with a high degree of motor proficiency. The physically fit individuals usually functions with maximum efficiency. The human body is a machine of wonder where complexity is capable of strong and forceful movement. This machine is made up of more than two hundred bones to which are attached more than six hundred muscles.[ii]

Strength

Strength helps the muscles to exert force an physical activity can be performed without strength. When strength is lesser other life functions are handicapped. The functioning

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

capacity of vital organs such as these of respiratory, circulatory and digestive systems depend upon the condition voluntary muscles. Strength in hands to pull push and to life objects. Strength in legs helps to carry body weight and to carry extra burdens. Muscular strength is reduced or last by in activity various phases of muscle length differentiated follows.

a. Isometric contractions in which the length of the muscles remains the same.
b. Concentric contraction which involves shortening of muscles and
c. In concentric contraction of which the length of the muscles increases while its tension may remains

Vertical jump

According to the Clarke, "Vertical jump is primarily a test of the ability of the body to develop power in relation to the weight of the individual himself. At present, it is generally accepted as a measure of explosive power". It has been found that the vertical jump can be used as a measure of many other factors, such as neuro-motor efficiency, dynamic strength and explosive energy. Mc cloy used the vertical jump.

Standing Broad Jump

It is the power or capacity to jump horizontal jump is used as a test measure the explosive power and leg strength which occupies a prominent place and plays a vital part in the daily activities of man. It is an essential factors for indulging in almost all game and sports". Jumping ability is one of the basic physical fitness components, which is required by every sports men and women. Jumping ability basically depends upon the lower body strength, explosive power, abilities ability

Speed

Agility is very important in sports involving quick changes in position of the body parts with fast starts and stop and quick changes in direction which are fundamental to good performance in practically all court games such as basketball, tennis, badminton and volleyball as well as in many field games such as football and baseball. Agility is mostly involved in football, basketball and hockey in game situations. These games are requiring high amount of agility.

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

METHODOLOGY

The selection of subjects, orientation of the subjects, research design, collection of data and statistical technique used are detailed.

Selection of the subject

To achieve this purpose of investigation 20 offensive volleyball players, who served as setters and spikers, and 20 defensive volleyball players who served as blockers and diggers were selected. The subjects were selected from different colleges affiliated to Dr Ram Manohar Lohia Avadh University, Faizabad who were participated at inter-collegiate level competitions. The subjects were in the age group of 18 to 22 years.

Selection of variable

The research scholars reviewed the variables scientific literature pertaining to the study from books, journals, periodicals, magazines and research papers, taking into consideration the importance of the variables. For this study the researcher selected the following variables:

a. Speed

b. Leg Explosive strength

Orientation of subjects

Prior to the test, procedures were explained in detail to the subjects to ensure proper understanding and co-operation so as to obtain reliable data from the subjects. Demonstrations were given in front of the subjects prior to the actual collection of data.

Research design

Totally forty college volleyball players – twenty offensive players and twenty defensive players who participated in inter-collegiate level tournaments were selected for this study. The selected subjects were tested to find out their ability in speed, and strength using standard tests. Comparisons were made between the scores and the differences were considered as

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

difference in their abilities. Statistical significance were determined through 't' test. In all cases 0.05 level was fixed.

RELIABILITY OF DATA

The reliability of data was ensured by establishing the instrument reliability, tester's competency and subject reliability

Instrument Reliability

Standardized equipments, stop watch, tape were used to measure the speed and leg strength of the subjects. The instruments were compared with standard ones and found reliable.

Tester's Competency

Reliability was established by the test-retest processes. Ten students were tested on selected variables. The repeated measurement of individuals on the same test is done to determine reliability. It is a univariate not a bivariate situation; it makes sense then to use a univariate statistics like the intra-class correlation coefficient.

The intraclass correlation coefficient obtained for test-retest data are presented in Table I.

Table I: Intra Class Correlation Coefficient of Test – Retest Scores

S.No	Variables	Coefficient of Correlation
1	Speed	0.87*
2	Leg Explosive Strength	0.82*

* Significant at 0.05 level

Subject's reliability

The intra-class correlation value of the above test and retest also indicated subject reliability as the same subjects were used under similar conditions by the same tester. The co-efficient of reliability were significant at 0.05 level for the above test under investigation.

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

COLLECTION OF DATA

A study was conducted to compare the speed and leg strength among offensive and defensive volleyball players. For this purpose the following procedure has been adopted

TEST ADMINISTRATION

50 meters dash to measure speed

Purpose

To measure the speed of the subject.

Facilities and Equipment

An area on a track or football field or play ground with a starting line, a 50 yard course and a finish line, two stop watches or a split second timer.

Procedures

After a short warm up period, the subject took a position behind the starting line. Best results were obtained when two subjects ran at the same time for competition. The starter used the command "Ready, Go". The latter was accompanied by a downward sweep of the arm as a signal to the timer. The subject ran across the finish line. One trial was permitted.[iii]

Instructions

The subject could take any position behind the starting line, as he wished. On the command, go, the subject was to run as fast as he could across the finish line. The subject should not slow up until he crossed the finish line. After crossing the finish line he could slow down gradually.

Scoring

The score was the elapsed time to the nearest tenth of a second between starting signal and the instant the student crossed the finish line.

Testing Personnel

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

One starter and two timers were used to administer this test. The timers recorded the scores. But testing was facilitated by the investigator with the assistance of the recorder.

Leg explosive strength – vertical jump

Purpose:-To measure the leg power.

Equipments:-A measuring tape and a smooth wall surface at least 12 feet from the floor are required.

Description:-The performer stood with one side towards a wall heels together kept on the floor, he reached upward as high as possible and made a mark on the wall. The performer then jumped as high as possible and made another mark at the peak height of their jumped and arched.

Score:-The score was the vertical distance between the reach and jump and reached marks recorded in centimeters

RESULTS AND DISCUSSIONS

Statistical comparisons based on the results between offensive and defensive volleyball players are presented in Table II

Table II:

Showing Mean, Mean Difference, Standard Deviation and Obtained 't' value between Offensive and Defensive Volleyball players on Speed

Group	Mean	MD	SD	SDM	't'
Offensive	7.11		0.18		
Defensive	7.05	0.06	0.25	0.07	0.88

Required table value for df 1,19 = 1.73

Not Significant

The results presented in Table II proved that the average speed of the offensive volleyball players was 7.11 seconds and the defensive players was 7.05 with mean difference of 0.06

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC)
Official Publication of Indian Mental Health & Research Centre

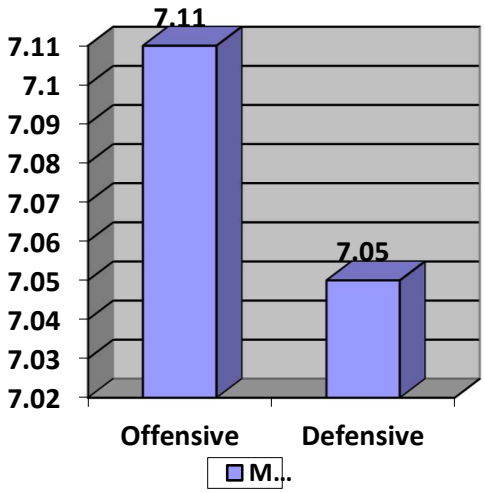
ISSN: 2582-2004
Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

seconds. The obtained 't' value of 0.88 proved to be insignificant at the obtained value was less than the required table value of 1.73 to be significant at 0.05 level. Hence, it was proved that there was no significant difference between offensive and defensive volleyball players in speed. The obtained mean values were presented through bar diagram for better understanding of the results in Figure 1

Figure 1:

Bar Diagram Showing Mean values on Speed of the Offensive and Defensive Volleyball Players



The statistical comparisons based on the results between offensive and defensive volleyball players are presented in Table III

Table III:

Showing Mean, Mean Difference, Standard Deviation and Obtained 't' value between Offensive and Defensive Volleyball players on Explosive strength

Group	Mean	MD	SD	SDM	't'
Offensive	55.3		7.79		
Defensive	58.6	3.3	9.98	3.27	1.01

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

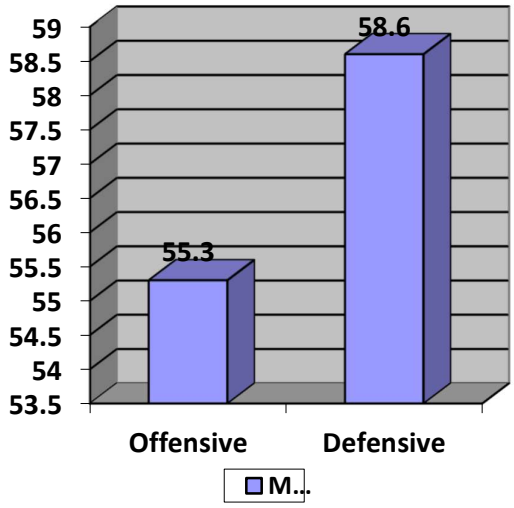
Required table value for df 1,19 = 1.73

Not Significant

The results presented in Table III proved that the average explosive strength of the offensive volleyball players was 55.30 and the defensive players was 58.60 with mean difference of 3.30. The obtained 't' value of 1.01 proved to be insignificant at the obtained value was less than the required table value of 1.73 to be significant at 0.05 level. Hence, it was proved that there was no significant difference between offensive and defensive volleyball players in explosive strength. The obtained mean values were presented through bar diagram for better understanding of the results in Figure 2.

Figure 2:

Bar Diagram Showing Mean values on Explosive strength of the Offensive and Defensive Volleyball Players



CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn: Both offensive and defensive players possess adequate speed and explosive power as assessed in this study. It was concluded that there was no significant difference in speed between offensive and defensive players in volleyball. It was

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019

Journal of Advance Research in Science and Social Science (JARSSC) **ISSN:** 2582-2004
Official Publication of Indian Mental Health & Research Centre Volume 02, Issue 02

DOI: 10.46523/jarssc.02.02.22
Multidisciplinary, Open Access
Impact Factor: 3.575

concluded that there was no significant difference in explosive power between offensive and defensive player in volleyball.

REFERENCE

[1] Charles A. Bucher, Foundation of Physical Education and Sports, (St. Louis: The C.V. Mosby Co. 1983), p. 20.

[2] Clarke, H.C. and Clarke, H.H., Advanced Statistics in Physical Education and Recreation (Englewood Cliffs, N.J: Prentice Hall Inc., 1977).

[3] Earl Zieger, Physical Education and Sports (Philadelphia: Lea and Febiger, 1983), p. 143.

[4] Howard C. Leiba, Physical Education Hand Book (Englewood Cliffs, N.J: Prentice Hall, Inc. 1959), p. 6.

[5] Irwin Resemstein, Bureau of Physical Education (New York: State Education Department).

[6] Leonard A. Larsen etal (eds) encyclopedia of Sports science and medicine, New York the Mc.millan company, Inc., 1987, p.413.

[7] Mathews, D.K. Measurement in Physical Education (3rd Edition, Philadelphia: W.B. Sagreles Co, 1968), p. 476.

[8] Men's Volleyball (London: Training and Education Associates Ltd., 1974), p. 72.

[9] The Volleyball Associatiion, Teach Yourself Volleyball Teach (London: The English University Press Ltd., 1969), p. 14

Received: 16.06.2019 **Accepted:** 30.07.2019 **Published**: 30.07.2019