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COMPARE SELECTED SPEED PARAMETERS BETWEEN OFFENSIVE AND DEFENSIVE VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to compare selected speed parameters of offensive and defensive volleyball players. 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 in Andhra Pradesh, who were participated at inter-collegiate level competitions. The subjects were in the age group of 18 to 22 years. Totally forty college volleyball players The selected subjects were tested to find out their ability in speed, using standard tests. Comparisons were made between the scores and the differences were considered as difference in their abilities. Statistical significance were determined through 't' test. In all cases 0.05 level was fixed.

Key Words: - Offensive and defensive volleyball players, speed parameters.

INTRODUCTION

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 equipments such as racquet, bat and stick.

Competition in all fields of life especially in the field of physical education and sports have increased so much that one cannot 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.

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.

Flishman studies of the speed of movement is highly specific to areas of the body. An individual with fast arm movements may have slow leg movements. In fact this specificity extends even to the type at task and the direction of movements.

Running speed can be discussed in terms of two factors, the rate of acceleration and velocity. The first factor if related to how fast a person can accelerate such as change of speed of football player or the acceleration of a sprinter. This factor is the most important consideration in speed for distances up to about 20 yards and is very important in court and field games and short races.

GAME OF VOLLEYBALL

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.

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 the greatest desire for victory will win.

Volleyball is characterized mainly by its dynamic work of broken intensity. There are periods of significant muscular activity in alteration with periods of relative relaxation intensity of work. During the time of play, the intensity of play oscillates from moderate to maximum. The time playing approaches three hours during

which intensity increases to a points where, pulse rate reaches 200 beats / min and weight loss goes upto 2.5 to 3 Kgs.

In every tactical move in volleyball, one depends on team work and the individual skills, good passing, setting, spiking, jumping, controlling the ball, participation and speed to the ball and keeping the eyes on the ball. Tactics will succeed only through individual fundamental skills and with players thinking as a team.

Every player must know the requirements of his position and skills and he fits in with other members of the team, especially with those most closely connected with him. So player must possess the skills of the game and is physically fit to execute the same. If any of the above is lacking he is not a complete player.

REASONS FOR SELECTION OF THE STUDY

As of any game, the volleyball players were broadly classified into two, namely, offensive and defensive. Depending upon their positions, the requirements of **speed** parameters of these players are bound to differ. In this study, the researcher was interested to scientifically find out whether there exist any differences on **speed** of the offensive and defensive volleyball players.

STATEMENT OF THE PROBLEM

The purpose of the study is to compare selected speed parameters between offensive and defensive volleyball players.

HYPOTHESIS

It was hypothesized that there would be significant difference between offensive and defensive volleyball players on speed of the volleyball players. .

SIGNIFICANCE OF THE STUDY

1. The study was significant in making an attempt to find out the status of speed of offensive and defensive volleyball players.
2. This study may help the coaches, physical educators to select players for offensive and defensive positions in volleyball.

3. It may improve co-ordination and perfect rhythm in a particular pattern of movement which were a part of the game.
4. The study may help the coaches to design different training to improve speed of the volleyball players.

DELIMITATIONS

1. This study was conducted only on 20 offensive players and 20 defensive players.
2. For the purpose of the study, volleyball players who used the skills of block and dig were considered as defensive players.
3. For the purpose of the study, volleyball players who used the skills of set and spike were considered as offensive players.
4. The subjects selected were within the age between 18-22

LIMITATIONS

1. The physiological factors such as diet and nutritive practice were not taken into consideration.
2. The investigator did not consider humidity temperature and other environmental conditions.
3. Regular activities and day to day affairs such as sleeping, studying etceteras of the subjects were not taken into consideration.

METHODOLOGY

The purpose of the study was to compare selected speed parameters of offensive and defensive volleyball players. The selection of subjects, orientation of the subjects, research design, collection of data and statistical technique used are detailed in this Study.

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 in Andhra Pradesh, who were participated at inter-collegiate level competitions. The subjects were in the age group of 18 to 22 years.

SELECTION OF VARIABLES

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:

1. Speed

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, using standard tests. Comparisons were made between the scores and the differences were considered as 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 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 intraclass 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* |

* Significant at 0.05 level

SUBJECTS RELIABILITY

The intraclass 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.

COLLECTION OF DATA

A study was conducted to compare the speed among offensive and defensive volleyball players. For this purpose the research scholar followed the following procedure.

TEST ADMINISTRATION

1. 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.

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.

STATISTICAL PROCEDURE

To find out the mean from ungrouped data, the formula explained by Clarke and Clarke was used.

$$M = \frac{\sum X}{N}$$

Where N = Total Number of scores
 $\sum X$ = Summation of raw scores

The standard deviation was calculated directly from raw scores by the formula given by Clarke and Clarke.

$$SD = \sqrt{\frac{\sum X^2}{N-1}}$$

Where SD = Standard deviation.
 $\sum X^2$ = Sum of squared deviation from the mean
 N = Total number of subjects.

To compute the standard error of the mean the following formula suggested by Clarke and Clarke was used:

$$\sigma_{DM} = \sqrt{M_1^2 + M_2^2}$$

where σ_{DM} = Standard Error of the Difference between the means
 M_1^2 = Square of standard error of the mean1
 M_2^2 = Square of standard error of the mean2

The standard error of the mean was calculated by the formulae stated by Clarke and Clarke.

$$SE = \frac{SD}{\sqrt{N}}$$

Where SE = Standard Error of the mean
 SD = Standard Deviation

\sqrt{N} = Root of total number of scores

The 't' ratio of mean was found by the formula given by Clarke and Clarke.

't' = $DM / \sigma DM$

where DM = Difference between means

σDM = Standard Error of the difference between means.

RESULTS AND DISCUSSIONS

RESULTS

The 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 | 0.06 | 0.18 | 0.07 | 0.88 |
| Defensive | 7.05 | | 0.25 | | |

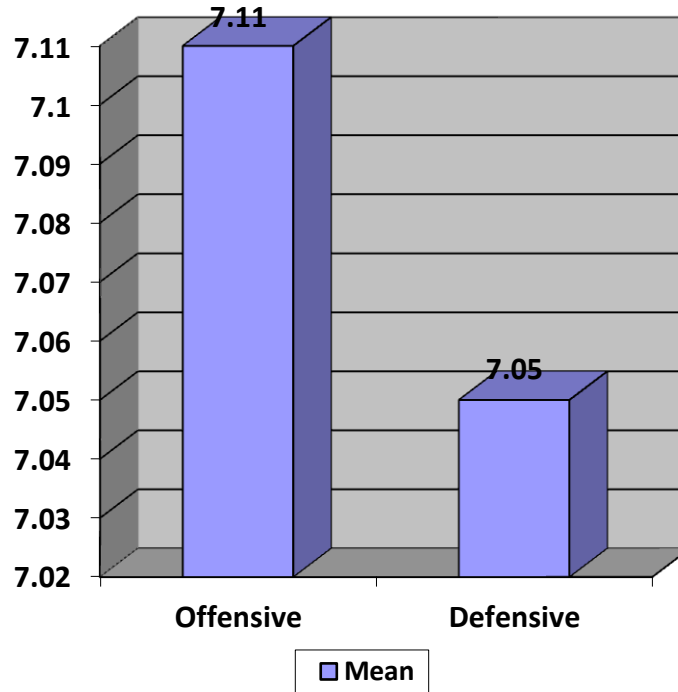
Required table value for df 1,19 = 1.73

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 were 7.05 with mean difference of 0.06 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.

DISCUSSIONS ON FINDINGS

As of any game, the volleyball players were broadly classified into two, namely, offensive and defensive. Depending upon their positions, the requirements of 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 of the offensive and defensive volleyball players.

The obtained results presented in Table II proved that there was no significant difference in speed 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.

CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn:

1. Both offensive and defensive players possess adequate speed as assessed in this study.
2. It was concluded that there was no significant difference in speed between offensive and defensive players in volleyball.

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