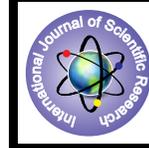


Relationship of Selected Physical, Physiological and Anthropometric Variables with Playing Ability Among Boys Mini National Volleyballers



Physical Education

KEYWORDS :

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ABSTRACT

The aim of the study was to determine the Relationship of selected physical, physiological and anthropometric variables with playing ability among boys mini national volleyballers. Volleyball is a game of applied athletics and it requires well proportionate physique and great amount of physical fitness level. To achieve the objectives of the study two Physical fitness variables, two physiological variables and two anthropometric variables were included as independent variables and playing ability as dependent variable, which was assessed through subjective rating, by three experts, during the mini national Volleyball tournaments and the average was taken as criterion score. Forty five male Volleyball players, who had participated the mini national tournament in 2013-2014 seasons, were selected as subjects. Person's product moment correlation (zero order) was used as a statistical tool to find out the result and it revealed that the physical fitness variables of speed, agility, physiological variables of resting pulse rate, respiratory rate and anthropometrics variables of height, weight, were having significant relationship with Volleyball performance.

Introduction

One of the goals of scientific research is to predict future events or results from present or past data. There are different types of prediction that we come across in our daily life, such as wealth-forecast, market-forecast, share market-forecast, election trends etcetera. These are based upon some known fact and so they are reliable prediction.

Research in the field of sports and games had proved that the future performance of an individual or team could be predicted through the analysis of certain variables, which are found to be the basis for total performance. Among many factors the following variables such as anthropometrical, physical, physiological and skill performance that decide the playing ability of an individual are more important.

Unlike many competitive team sports, volleyball doesn't feature any physical contact between opponents. Volleyball players remain on their own respective sides of the court with a tall net serving as a barrier between the two teams. This basic setup makes volleyball a unique game and influences the necessary traits required to be a good volleyball player.

Volleyball players tend to be long, lean athletes. Greater height allows players to play the ball above the net, executing spikes and performing blocks. Taller athletes also cover more court and have longer arms, allowing them to generate more power when striking the ball. Five feet is the minimum height for volleyball players, and while shorter athletes can excel in setting and passing roles, height is a physical trait common in most dominant volleyball players.

Sharkey (1975) observed that lack of proper physique may make it impossible for an athlete to reach to a high degree of success. In general the most predictive studies have been of high level performers at national and international levels. Theoretically, we would expect those who are most successful to have the appropriate structures commensurate with their performance task; therefore, examination of differences between these structures and tasks will increase our understanding of the important aspects of physique.

Anthropometry is the oldest type of body measurements used, dating back to the beginning of recorded history. The concepts of the ideals proportion varied over periods of time. For example, Polycletus fashioned Doryphorus, the spear thrower, as a fighter and an athlete, broad shouldered, thick set and square chest as the 'perfect man' (Clarke, 1976).

Different sports have distinct physical and physiological characteristics which contribute to the success of sports persons, in that particular sports discipline. The measurement of player's physiological characteristics has high lightened position specific attributes. The physiological efficiency of various organs is helpful in doing the activity with vigor and more enthusiasm. More and more training is helpful to be stronger physiological efficiency. The most important muscle that adapts to training is the heart. During exercise, it pumps blood containing oxygen, fluids and nutrients to the active muscles. Blood flow then drains the metabolic waste products away. The more blood pumped, the more oxygen is available to the exercising muscles. More and more the muscles train, they're better able to extract and use the oxygen to produce more work. The heart adapts to aerobic exercise over time so it can pump more blood per stroke. Physiological efficiency of various organs plays a vital role in the performance Volleyball (Jeyaraj & Gopinathan, 2014).

The Sports Skill is a unit. When it combines with other units into a pattern along with certain rules, the result is a sport or athletic game. These motor patterns have their fundamental skills or racial skills viz, running, walking, hanging etc. Efficient performance in these motor patterns depends on the underlying basic factors of movement such as strength, speed, power, agility, hand-eye-foot-eye-coordination, balance etc. When these fundamental skills are combined into various patterns and sequences along with the underlying basic elements, sports skills result. These are unique and specific for each game or physical activity.

Playing abilities or specific skills are very important aspect in every game and sports and play a vital role in the performance of individual. Skill is often defined as "knowledge or expertise, but in physical education it is the ability to perform certain activities or movements with control and consistency, to bring about a desired results." It takes a long time to acquire a skill because it involves a high level co-ordination and control. The game of volleyball comprises manifold of quick actions and reactions such as arm pass, fore arm pass, blocking, smashing and defending in the playing situation.

METHODOLOGY

Forty-five men Volleyball players during the year 2013-2014 were selected as subjects during the mini national Volleyball tournaments in 2013-2014 sessions. The subjects were tested for the physical fitness variables of speed (50 mts. dash), agility (4x10 mts. Shuttle run), physiological variables of resting pulse rate (Radial Pulse method), respiratory rate(Manuel Method) and anthropometrics variables of height(Stadiometre) and weight (Weighing Machine).

The dependent variable was playing ability which was assessed through subjective rating by three experts. The average of three experts was the individual criterion score.

Person's products moments correlation (zero order) was used to find out the relationship of selected anthropometrics and physical fitness variable with Basketball performance. The level of significance was set at 0.05. SPSS package was used for statistical analysis.

RESULTS & DISCUSSION

Table-1 Coefficients of Physical Fitness variables with Volleyball playing ability

Sl No	Variables	Co-efficient of Correlation
1	Speed and Playing Ability	0.39*
2	Agility and Playing Ability	0.89*

*Significant at .05 level (r 0.05 (43) =0.286)

Table 1– had shown the relationship of selected physical fitness variables with Volleyball playing ability. All the obtained correlation values were above the table value of 0.286. In this analysis speed and agility were significant relationship with playing ability. Among the physical fitness variables agility was found the highest relationship with Volleyball playing ability (r = 0.89). The other physical fitness variables of speed is 0.39 and also significant relationship with Volleyball playing ability.

Table-2 Coefficients of Physiological variables with Volleyball playing ability

Sl No	Variables	Co-efficient of Correlation
1	Resting Pulse Rate and Playing Ability	0.41*
2	Respiratory Rate and Playing Ability	0.30*

* Significant at .05 level (r 0.05 (43) =.286)

Table 2– had shown the relationship of selected physiological variables with Volleyball playing ability. All the obtained correlation values were above the table value of 0.286. In this analysis all the selected variables were significant relationship with playing ability. Among the physiological variables resting pulse rate was found the highest relationship with Volleyball playing ability (r = 0.41). The other physiological variables of respiratory rate is 0.30 and also significant relationship with Volleyball playing ability.

Table-3 Coefficients of Anthropometric variables with Volleyball playing ability

Sl No	Variables	Co-efficient of Correlation
1	Height and Playing Ability	0.81*
2	Weight and Playing Ability	0.37*

* Significant at .05 level (r 0.05 (43) =.286)

Table 3– had shown the relationship of selected anthropometric variables with Volleyball playing ability. All the obtained correlation values were above the table value of 0.286. In this analysis all the selected variables were significant relationship with playing ability. Among the anthropometric variables height was found the highest relationship with Volleyball playing ability (r = 0.81). The other anthropometric variable of weight is 0.37 and also significant relationship with Volleyball playing ability.

CONCLUSION

From the above results and discussions the following conclusions were drawn

- The selected physical fitness variables of speed and agility having significant relationship with Volleyball playing ability.
- In the selected physiological variables resting pulse rate and respiratory rate also having significant relationship with Volleyball playing ability.
- In the selected anthropometric variables height and weight also having significant relationship with Volleyball playing ability.

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