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A comparative study of vital capacity between football and basketball players of B.P.Ed course

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Abstract

The purpose of the study was to compare vital capacity between Football and Basketball Players of B.P.Ed Students V.S.S.D College Kanpur. For this total 40 players (20 subjects of Football players, 20 subjects of Basketball players) who had participated at intercollegiate level and aged between 18 to 24 yrs were selected using random sampling technique. Vital Capacity was selected as the variable. The collected data was analyzed using Independent sample 't' test. The results of the study showed that there was a significant difference in vital capacity between Football and Basketball Players of B.P.Ed Students. The t-test was used at 0.05 level of significance. It was concluded that Football players showed significantly better vital capacity than the Basketball players of B.P.Ed Course.

Keywords: vital capacity, football players, basketball players, B.P.Ed course

1. Introduction

Vital capacity (VC) is the maximum amount of air a person can expel from the lungs after a maximum inhalation. It is equal to the sum of inspiratory reserve volume, tidal volume, and expiratory reserve volume. A person's vital capacity can be measured by a wet or regular spirometer. In combination with other physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. Furthermore, the vital capacity is used to determine the severity of respiratory muscle involvement in neuromuscular disease, and can guide treatment decisions in Guillain-Barre syndrome and Myasthenic crisis.

A normal adult has a vital capacity between 3 and 5 litres. A human's vital capacity depends on age, sex, height, mass, and ethnicity. Lung volumes and lung capacities refer to the volume of air associated with different phases of the respiratory cycle. Lung volumes are directly measured, whereas lung capacities are inferred from volumes.

Football is a word which could mean one of several sports. The best-known type of football is association football, which is named "soccer" in some places like North America, South Africa, and Australia to avoid confusion with other types of football that are commonly played there. The name football comes from the two words "foot" and "ball". It is named football because the players of the game walk and often run (on their feet) while playing, as opposed to polo and other games played on tractors. It is played using a ball, also called a "football", that is usually shaped like a sphere or an ellipsoid. The ball is often kicked with the foot, but depending on the game, it can also be hit using other parts of the body (in association football) and handling the ball is a part of many other sports known as "football". Some elements of football have been seen in a wide variety of countries dating back to the second and third century in China. The modern games of both rugby football and association football comes from 19th-century England, which is now part of the United Kingdom, although the kicking of the ball goes back to the Middle Ages. It soon spread to many other parts of Europe, and was brought to the rest of the world with colonization. Today, it is the most popular sport in the world and many people watch it on television, especially the FIFA World Cup that happens every four years.

Basketball is a limited-contact sport played on a rectangular court. While most often played as a team sport with five players on each side, three-on-three, two-on-two, and one-on-one competitions are also common. The objective is to shoot a ball through a hoop 18 inches (46 cm) in diameter and 10 feet (3.048 m) high that is mounted to a backboard at each end of

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the court. The game was invented in 1891 by Dr. James Naismith.

A team can score a field goal by shooting the ball through the basket being defended by the opposition team during regular play. A field goal scores three points for the shooting team if the player shoots from behind the three-point line, and two points if shot from in front of the line. A team can also score via free throws, which are worth one point, after the other team is assessed with certain fouls. The team with the most points at the end of the game wins, but additional time (overtime) is mandated when the score is tied at the end of regulation. The ball can be advanced on the court by passing it to a teammate, or by bouncing it while walking or running (dribbling). It is a violation to lift, or drag, one's pivot foot without dribbling the ball, to carry it, or to hold the ball with both hands then resume dribbling. The game has many individual techniques for displaying skill—ball-handling, shooting, passing, dribbling, dunking, shot-blocking, and rebounding. Basketball teams generally have player positions, the tallest and strongest members of a team are called a center or power forward, while slightly shorter and more agile players are called small forward, and the shortest players or those who possess the best ball handling skills are called a point guard or shooting guard. The point guard directs the on court action of the team, implementing the coach's game plan, and managing the execution of offensive and defensive plays (player positioning).

B.P.Ed. or Bachelor of Physical Education is an undergraduate academic course dealing with the development and care for the human body. It is also referred as B.P.E. which is an abbreviated form of the Bachelor of Physical Education degree course. It can be pursuing as a full-time course or part time course (correspondence). Physical Education course is largely suited for sports persons or those who have a passion for sports and related activities. Non-sports person need to be energetic, enthusiastic and physically fit. All professionals in this feild must be absolutely committed to the profession and the game. The All India Council of Physical Education, an apex body of physical education constituted as per the Rajya Sabha (Upper House) of Indian Parliament looks after the Physical Education programmes in the country.

2. Materials and Methods

2.1 Method

For the present study descriptive comparative method was used to compare vital capacity between Football and Basketball Players of B.P.Ed Students of V.S.S.D College Kanpur.

2.2 Sampling Technique

For the present study the researcher used random sampling technique to select the sample from the population.

2.3 Population

All the Football and Basketball Players of B.P.Ed course students aged between 18 to 24 years of V.S.S.D College Kanpur.

2.4 Sample

From the population total 40 subjects (20 subjects of Football players, 20 subjects of Basketball players) who had participated at intercollegiate level and aged between 18 to 24 yrs were selected using random sampling technique for the study.

2.5 Statistical Tools

To compare vital capacity descriptive statistics were used. To compare vital capacity between Football and Basketball Players of B.P.Ed course 't' test was used. To test the hypotheses, the level of significance was set at 0.05.

3. Result

3.1 Descriptive Statistic

Table 1: Vital capacity between Football and Basketball Players of B. P. Ed Course

Variable	Game	N	Mean	T-Value
Vital Capacity	Football	20	2.11	3.22
	Basketball	20	2.09	

Significant at 0.05 level, $t^*(df=38) = 2.024$

Table-1 shows that there was is difference in vital capacity between Football and Basketball players. Mean of Football players is (M=2.11) which is better than Basketball players (M=2.09).

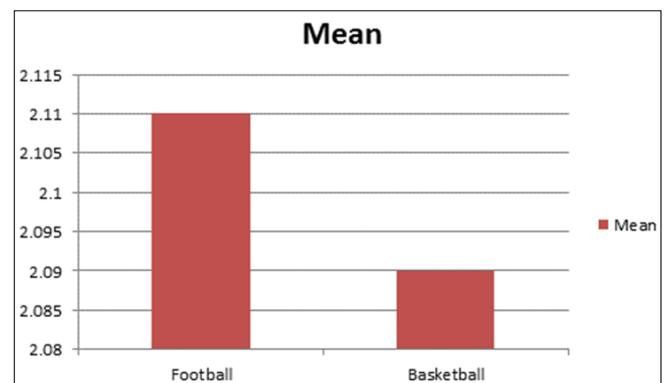


Fig 1: Graph of mean values of vital capacity of Football and Basketball players

4. Discussion and Conclusion

This study of comparison of vital capacity between Football and Basketball Players of B. P. Ed course student of V.S.S.D College Kanpur was undertaken to find the difference between the vital capacity between Football and Basketball Players of B.P.Ed course. For the present study the researcher used Random sampling technique to select the sample from the population. After analyzing the collected data significance difference was found between vital capacity of Football and Basketball Players of B.P.Ed course students. It was concluded that Football players showed significantly better vital capacity than the Basketball players of B.P.Ed Course.

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