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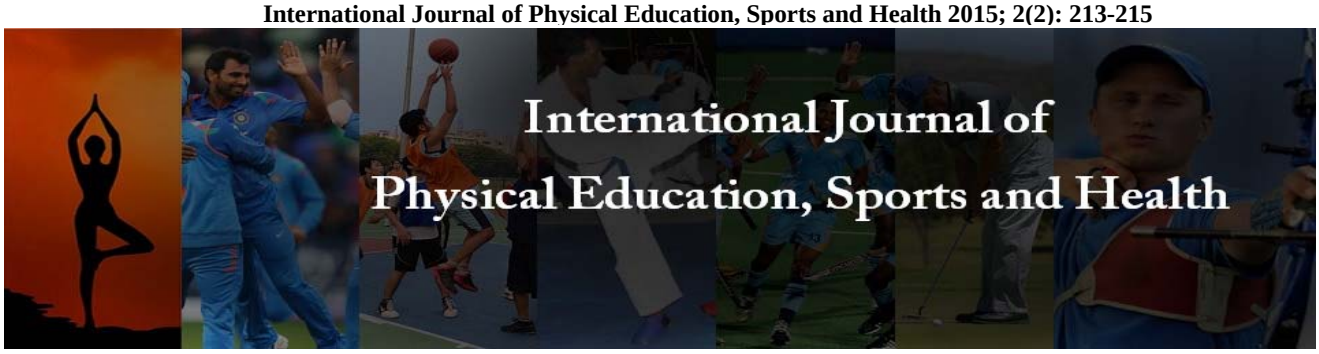

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A compression of aerobic and anaerobic capacity in defenders and attackers in male football player

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Abstract
The main purpose of the current study is to find out the compression of aerobic and anaerobic of defenders and attackers in male football players. To conduct the study, 15 defenders and 15 attackers of different teams which had participated in inter-college football championship in C.D.L.U, Sirsa (Haryana) were chosen of age between 20-26 years as sample. Cooper's 12-minute run/walk was used for measuring aerobic capacity and 50 meters dash was used for measuring anaerobic capacity. Result shows that defenders and attackers have no significant difference in aerobic and anaerobic capacity.

Keywords: Aerobic, Anaerobic, Football, Professionalism

Introduction
Football is a family of team sports that involve, to varying degrees, kicking a ball to score a goal. Unqualified, the word football is understood to refer to whichever form of football is the most popular in the regional context in which the word appears. Sports commonly called 'football' in certain places include: association football (known as soccer in some countries); gridiron football (specifically American football or Canadian football); Australian Rules football; rugby football (either rugby league or rugby union); and Gaelic football. These different variations of football are known as football codes.

Various forms of football can be identified in history, often as popular peasant games. Contemporary codes of football can be traced back to the codification of these games at English public schools during the nineteenth century. The expanse of the British Empire allowed these rules of football to spread to areas of British influence outside of the directly controlled Empire, though by the end of the nineteenth century, distinct regional codes were already developing: Gaelic football, for example, deliberately incorporated the rules of local traditional football games in order to maintain their heritage. In 1888, The Football League was founded in England, becoming the first of many professional football competitions. During the twentieth century, several of the various kinds of football grew to become some of the most popular team sports in the world.

Aerobic capacity describes the functional capacity of the cardiorespiratory system, (the heart, lungs and blood vessels). Aerobic capacity refers to the maximum amount of oxygen consumed by the body during intense exercises, in a given time frame. It is a function both of cardiorespiratory performance and the maximum ability to remove and utilize oxygen from circulating blood. To measure maximal aerobic capacity, an exercise physiologist or physician will perform a VO_2 max test, in which a subject will undergo progressively more strenuous exercise on a treadmill, from an easy walk through to exhaustion. The individual is typically connected to a respirometer to measure oxygen consumption, and the speed is increased incrementally over a fixed duration of time. The higher the measured cardiorespiratory endurance level, the more oxygen has been transported to and used by exercising muscles, and the higher the level of intensity at which the individual can exercise. More simply put, the higher the aerobic capacity, the higher the level of aerobic fitness. The Cooper and multi-stage fitness tests can also be used to assess functional aerobic capacity for particular jobs or activities.

The degree to which aerobic capacity can be improved by exercise varies vary widely in the human population: while the average response to training is an approximately 17% increase in VO_2max, in any population there are "high responders" who may as much as double their

Capacity, and "low responders" who will see little or no benefit from training. Studies indicate that approximately 10% of otherwise healthy individuals cannot improve their aerobic capacity with exercise at all. The degree of an individual's responsiveness is highly heritable, suggesting that this trait is genetically determined.

Anaerobic metabolism, or anaerobic energy expenditure, is a natural part of whole-body metabolic energy expenditure. Fast twitch muscle (as compared to slow twitch muscle) operates using anaerobic metabolic systems, such that any recruitment of fast twitch muscle fibers leads to increased anaerobic energy expenditure. Intense exercise lasting upwards of about four minutes (e.g., a mile race) may still have a considerable anaerobic energy expenditure component. High-intensity interval training, although based on aerobic exercises like running, cycling and rowing, effectively becomes anaerobic when performed in excess of 90% maximum heart rate. Anaerobic energy expenditure is difficult to accurately quantify, although several reasonable methods to estimate the anaerobic component to exercise are available.

In contrast, aerobic exercise includes lower intensity activities performed for longer periods of time. Activities such as walking, long slow runs, rowing, and cycling require a great deal of oxygen to generate the energy needed for prolonged exercise (i.e., aerobic energy expenditure). In sports which require repeated short bursts of exercise however, the anaerobic system enables muscles to recover for the next burst. Therefore training for many sports demands is that both energy producing systems be developed.

Statement of Problem

A Compression of Aerobic and Anaerobic capacity in Defenders and Attackers in Male Football Player

Methodology

Selection of Subjects

To conduct the study, 15 defenders and 15 attackers of different teams which had participated in inter-college football championship in C.D.L.U, Sirsa (Haryana) were chosen of age between 20-26 years as sample.

Collection of Data

The data were collected by administering the specific tests and by taking specific measurements on different days. Test pertaining to Body composition were conducted in the Research laboratory and hostels. Test for aerobic capacity and anaerobic capacity were conducted in the university track. The raw data pertaining to tests are given in appendices. Time for taking test was from morning 6AM to 8AM. The Coefficient of correlation of Aerobic Ability (12 min run/walk) and Anaerobic Ability (50 meter) is 0.883 ad 0.906 respectively.

Administration of Test

Aerobic Capacity

The university track was used to conduct the test. The track was divided into 20 zones of 20 meters each and lines were marked. A stopwatch was used to operate the time. The subjects were asked to run for a period of 12th minutes continuously. At the end of 11th minute a long whistle was blown, so that the subjects could understand only one minute is left and could perform their best. At the end of the 12th minute the final whistle was blown and the subjects were asked to stop were they were. The research scholar measured distance from the nearest last zone line crossed by the athlete to the exact spot at where the player stopped. This distance was added to the total number of Laps and Zones ran by the subjects and entered into the score sheet.

Anaerobic Capacity

The university track was used to conduct the test. A straight was chosen where the 50 meters distance was marked. The stopwatch was used to calculate the time. At a time, two subjects were tested on clapper voice. Time taken is up to cover the finishing line. The time scored in seconds.

Statistical Procedure

To compare the aerobic capacity and anaerobic capacity of defenders and attackers in football 'T' test was used to test the hypothesis. The level of significance for the 'T' test was 0.05.

Result

Table 1: Compression of Aerobic in Defenders and Attackers in Male Football Player

Variable	Mean		't' value
	Attackers	Defenders	
Aerobic Capacity	3173	3162	0.04

Tabulated value is 1.686 at 0.05 level of significance

An examination of Table No.1 reveals that there is no significant difference in the Aerobic ability between Attackers and Defenders, as the mean score of aerobic capacity in attackers is 3173 and in defenders is 3162. And't' value is 0.04 which is less than tabulated value is 1.686 at 0.05 level of significance.

Table 2: Compression of Anaerobic in Defenders and Attackers in Male Football Player

Variable	Mean		't' value
	Attackers	Defenders	
Aerobic Capacity	6.52	6.54	0.08

Tabulated value is 1.686 at 0.05 level of significance

An examination of Table No.2 reveals that there is no significant difference in the Anaerobic ability between Attackers and Defenders, as the mean score of anaerobic capacity in attackers is 6.52 and in defenders is 6.54. And't' value is 0.08 which is less than tabulated value is 1.686 at 0.05 level of significance.

Conclusion

On the basis of the findings of the study the following conclusions were drawn:

- Attackers and Defenders have no significant difference in Aerobic ability.
- Attackers and Defenders have no significant difference in anaerobic ability.

References

1. Barry L Johnson, Jack K Nelson. Practical Measurement for Evaluation in Physical Education, 3rd Ed (Delhi, sarjeet publications,) 1982, 143.
2. https://en.wikipedia.org/wiki/Anaerobic_exercise
3. Narayan Meneon VA. Unpublished Master Degree Thesis L.N.C.P.E, Gwalior 1992, 38-40.
4. https://en.wikipedia.org/wiki/Aerobic_exercise
5. Clive Gifferd Football the ultimate guide to the beautiful game, King fischer publications, 2002.
6. https://en.wikipedia.org/wiki/Football
7. Donald K Mathew, Edward L Fox. The physiological Basis of Physical Education and Athletics.