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A study of cardio-respiratory endurance of athletes and non-athletes

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Abstract

This paper represents "A Study of Cardio-Respiratory Endurance of Athletes and Non-Athletes". The purpose of this study was to find out the cardio-respiratory endurance of athletes and non-athletes. Total Sixty (60) subjects were selected for the collection of data which include thirty (30) as athletes and thirty (30) as non-athletes from Govt. Degree College Akhnoor, University of Jammu by employing simple Random sampling method and the age group of subjects was ranged between 18-25 years. Twelve Minutes Run-Walk Test was used and the purpose was to measure Cardio Respiratory Endurance. In this Equipments were Football field, stopwatch, whistle, score sheet, pencil and clapper, etc. The data was analyzed by using the 't' test to find out the significant difference among the athletes and non athletes. The findings of this study showed there is significant difference of cardio respiratory endurance component between athletes and non-athletes. Athletes are having more cardio respiratory endurance than non-athletes.

Keywords: Cardio-respiratory endurance, athletes

Introduction

Cardiorespiratory endurance is the ability to exercise your entire body for a long time without stopping. It requires a strong heart, healthy lungs, and clear blood vessels to supply your large muscles with oxygen. Examples of activities that require good cardiorespiratory endurance are distance running, swimming, and cross-country skiing. Cardiorespiratory endurance is sometimes referred to by other names, including cardiovascular fitness, cardiovascular endurance, and cardiorespiratory fitness. The term aerobic capacity is also used to describe good cardiorespiratory function, but it is not exactly the same as cardiorespiratory endurance.

The first word in the term is cardiorespiratory because two vital systems are involved. Your cardiovascular system is made up of your heart, blood vessels, and blood. Your respiratory system is made up of your lungs and the air passages that bring air, including oxygen, to your lungs from outside of your body. In your lungs, oxygen enters your blood, and carbon dioxide is eliminated. Your cardiovascular and respiratory systems work together to bring your muscle cells and other body cells the materials they need and to rid the cells of waste. Together, the two systems help you function both effectively (with the most benefits possible) and efficiently (with the least effort). The second word in the term cardiorespiratory endurance refers to the ability to sustain effort. Together, then, these two words-cardiorespiratory and endurance-refer to the ability to sustain effort, which hinges on fitness of the cardiovascular (cardio) and respiratory systems.

Doing regular physical activity can help you look better by controlling your weight, building your muscles, and helping you develop good posture. Regular physical activity also produces changes in your body's organs, such as making your heart muscle stronger and your blood vessels healthier. These changes improve your cardiorespiratory endurance and wellness and reduce your risk of hypokinetic diseases, especially heart disease and diabetes. Physical activity provides benefits for both your cardiovascular and respiratory systems. In this lesson, you'll learn how each part of these systems benefits and how all the parts work together to promote optimal functioning and good health.

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Methodology

As every research demands a systematic method and procedure likewise this chapter adopts the following procedures including information regarding research design, source of data, sampling method, selection of subjects, collection of data, criterion Measures etc. A research become successful accompanied and supported by some reliable and authentic data. The statistical analysis of the gathered data provides a well-knit picture of a complete and successful hypothesis as pre-selected by the researcher. The chapter had been divided into the following headings:

Sources of data

The Subjects were selected from Govt. Degree College Akhnoor, University of Jammu.

Selection of subjects

Sixty (60) subjects were selected for the collection of data which include thirty (30) as athletes and thirty (30) as non-athletes from Govt. Degree College Akhnoor, University of Jammu.

Sampling method

The subjects were selected by using simple random sampling.

Selection of variable

Cardio Respiratory Endurance (Twelve Minutes Run-Walk Test):

Purpose: To measures Cardio Respiratory Endurance.

Equipments: Football field, stopwatch, whistle, score sheet, pencil and clapper, etc.

Procedure: For this test a foot ball field was prepared with marking at every ten meters for 200m. The subjects were asked to stand on the starting position and were given

instructions to cover as much distance as possible by running, jogging or walking, if running throughout the twelve minutes period was not possible. They were instructed to continue till the final whistle was blown and to stop before. With the starting whistle they started and at the end of twelve minutes the whistle was blown. The number of minutes left was announced to the subjects every minute, and the subjects jogged with moving forward the final whistle. When the signal to stop was given, they immediately stopped their running.

Scoring: The subject was concerned covered the distance was recorded. The score in meter was determined by multiplying the number of complete laps (200 meters) completed, plus the number of segments of five meters of an incomplete lap plus the number of meters stopped off between a particular segments.

Collection of the data

The data was collected on cardio respiratory endurance for two groups respectively. After that collected data was put in Microsoft excel to develop master chart and then ‘t’ test was used for this statistical treatment.

Statistical analysis and interpretation of data

The purpose of this study was to find out the cardio-respiratory endurance of athletes and non-athletes. Sixty (60) subjects were selected in which thirty (30) from athletes and thirty (30) from non-athletes and were analyzed by using the ‘t’ test to find out the significant difference among the athletes and non athletes of Govt. Degree College Akhnoor, University of Jammu.

Level of Significance

To test the hypothesis, the level of significant was set at 0.05 level of confidence which was considered adequate and reliable for the purpose of this study.

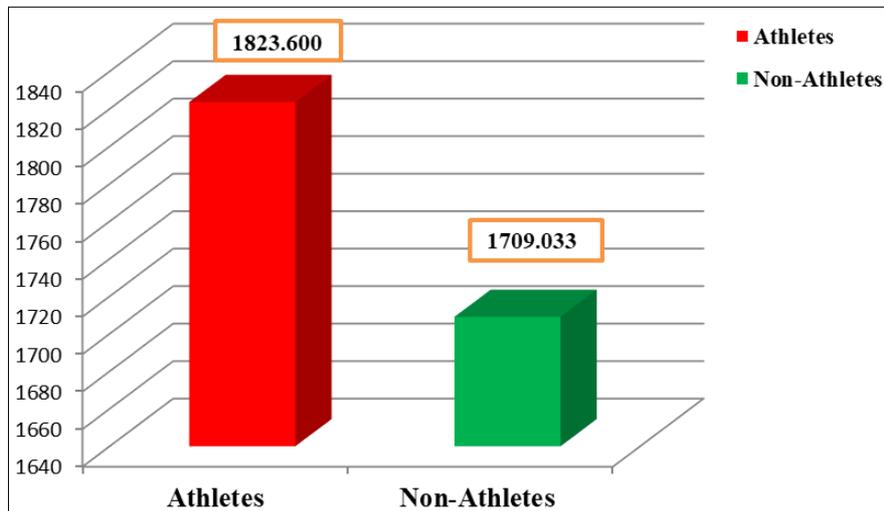
Table 1: Showing comparison between athletes and non-athletes in cardio respiratory endurance

Group	Mean	SD	SE	MD	OT	DF	TT
Athletes	1823.600	195.708	37.438	114.567	3.060	58	2.00
Non-athletes	1709.033	61.203					

*Level of Significance = 0.05, Tabulated ‘t’ 0.05 (58) = 2.00

Table No. 4 reveals that there is difference between means of athletes and non-athletes because mean of athletes is 1823.600 which is greater than the mean of non-athletes which is 1709.033 and therefore mean difference is 114.567 to check the significant difference between athletes and non-athletes data is again analyzed by applying ‘t’ test. Before applying’ test, standard deviation is calculated between

athletes and non-athletes which is 195.708 and 61.203 respectively and then the calculated value of ‘t’ is found as 3.060, is greater than tabulated ‘t’ which is 2.00 at 0.05 level of significance. This shows mean of athletes are having more cardio respiratory endurance than non-athletes. Hence the hypothesis which was giving by the researcher is accepted. This is presented graphically in graph.



Graph 1: Mean of cardio respiratory endurance between athletes and non-athletes

Findings

Table reveals that there is difference between means of athletes and non-athletes because mean of athletes is 1823.600 which is greater than the mean of non-athletes which is 1709.033 and calculated value of 't' is found as 3.060, is greater than tabulated 't' which is 2.00 at 0.05 level of significance. This shows mean of athletes are having more cardio respiratory endurance than non-athletes.

Conclusion

Within the limitations of the study and from statistical analysis the following conclusion was drawn.

There is significant difference of cardio respiratory endurance component between athletes and non-athletes. Athletes are having more cardio respiratory endurance than non-athletes. Research suggests that by engaging in regular exercise and physical activity that improves the cardiovascular system, the individuals can reduce many risk factors associated with coronary heart diseases. This is especially true for young people. There is strong evidence that the onset and rapid development of coronary heart diseases begin during youth, and may eventually become irreversible. Aerobic activities are incorporated throughout the physical education curriculum in order to improve this component. These activities include walking, jogging, running, jumping rope, distance swims, stationary bicycling, aerobic dance, step aerobics, basket ball, hand ball, touch football or any other activities which utilize the large muscles of the legs and elevate the heart rate.

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