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## Analysis of cardio respiratory endurance among physical education students

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### Abstract

Explosive power is the most obvious characteristics of a successful athlete. The most powerful athlete, of course, is those who have exceptional speed and strength. Running, Jumping, Throwing are the inborn activities of motor movements throughout the life though physically all human beings look alike the ability and the skill in doing or performing a thing will vary from individual.

Specific or task-oriented fitness is a person's ability to perform in a specific activity with a reasonable efficiency.

Cardio respiratory endurance is the ability to perform large-muscle, whole-body exercise at moderate to high intensities for extended periods of time. Numerous terms have been used to denote this component of physical fitness, including aerobic fitness and aerobic capacity. These terms are essentially synonymous with cardio respiratory endurance, which is the term used in this report. Forms of exercise that depend on cardio respiratory endurance include vigorous distance running, swimming, and cycling. This fitness component also affects a person's ability to perform, without undue fatigue, less intense, sustained whole-body activities, such as brisk walking, stair climbing, and home chores. People with good levels of cardio respiratory endurance can perform large muscle, whole-body exercise at high intensity for at least moderate durations before experiencing fatigue, and they can comfortably perform light- to moderate-intensity exercise for extended periods (Saltin, 1973).

The purpose of the study was to find out the analysis of cardio respiratory endurance among physical education students. For this purpose, One hundred physical education students were randomly selected from Alagappa University College of Physical Education, Karaikudi, Tamil Nadu. The age of the subjects ranged from 18 to 27 years respectively. The experimental design used in this study was random group design.

The Hard-ward step test was selected as a criterion variable to measure the cardio respiratory endurance. To achieve this purpose "F" ratio was used as a statistical technique.

Cardio - respiratory endurance exercise helps the body become more efficient and better able to cope with physical challenges.

The Study based on the result among the physical education student. There is a significant difference in cardio respiratory endurance.

The researcher concluded that due to the regular training. The students study in physical education college were fit enough related to the variable cardio respiratory endurance.

**Keywords:** Cardio respiratory endurance, fitness, physical education, hard-ward step

### 1. Introduction

Sports and games have become a scientific discipline in nature as it finds its root in human anatomy and psychology, sports biomechanics, sports medicine, sports psychology, exercise psychology, sports sociology and health education etc. Elite players are being prepared on the scientific principle to explore and realize the lofty and ever-towering possibilities.

Explosive power is the most obvious characteristics of a successful athlete. The most powerful athlete, of course, is those who have exceptional speed and strength. Running, Jumping, Throwing are the inborn activities of motor movements throughout the life though physically all human beings look alike the ability and the skill in doing or performing a thing will vary from individual. It is easy to achieve good results when the right man is put in the right event. Generally athletic types of body will be more apt for jumping events.

Physical fitness is one's richest possession. It cannot be purchased. It has to be earned through a daily routine of physical exercises. Dr. A.K. Uppal remarks.

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Physical fitness is a means to share greater responsibility without undue stress, fatigue and help in the quality of health and well-being. Physical education activities and programs are rendering valuable service to the man in improving their health and life style.

**1.1 Specific Fitness**

Specific or task-oriented fitness is a person’s ability to perform in a specific activity with a reasonable efficiency. For example sports or military service Specific training prepares athletes to perform well in their sports.

**1.2 Cardio Respiratory Endurance**

Cardio respiratory endurance is the ability to perform large-muscle, whole-body exercise at moderate to high intensities for extended periods of time. Numerous terms have been used to denote this component of physical fitness, including aerobic fitness and aerobic capacity. These terms are essentially synonymous with cardio respiratory endurance, which is the term used in this report. Forms of exercise that depend on cardio respiratory endurance include vigorous distance running, swimming, and cycling. This fitness component also affects a person’s ability to perform, without undue fatigue, less intense, sustained whole-body activities, such as brisk walking, stair climbing, and home chores. People with good levels of cardio respiratory endurance can perform large-muscle, whole-body exercise at high intensity for at least moderate durations before experiencing fatigue, and they can comfortably perform light- to moderate-intensity exercise for extended periods.

Cardio – respiratory endurance exercise helps the body become more efficient and better able to with physical challenges. It also lowers risk for many chronic diseases. Maintaining or increasing the heart’s own blood and oxygen

supply increasing the heart muscle’s function, so it pumps more blood per beat. This improved function keeps the heart rate lower both at rest and during exercise.

**2. Materials and Methods**

The purpose of the study was to find out the analysis of cardio respiratory endurance among physical education students. For this purpose, One hundred physical education students were randomly selected from Alagappa University College of Physical Education, Karaikudi, Tamil Nadu. The age of the subjects ranged from 18 to 27 years respectively.

**2.1 Section of Variables**

Cardio Respiratory Endurance  
Hard – Ward step test was used

**2.1.1 Scoring:** The Fitness Index score is determined by the following equations. For Example, if the total test time was 300 seconds (if completed the whole 5 minutes), and the number of heart beats between 1-1.5 minutes was 90, between 2-2.5 it was 80 and between 3-3.5 it was 70, then the long form Fitness Index score would be:  $(100 \times 300) / (240 \times 2) = 62.5$ . Note: you are using the total number of heart beats in the 30 second period, not the rate (beats per minute) during that time.

**2.1.2 Fitness Index** (short form) =  $(100 \times \text{test duration in seconds}) / (5 \times \text{pulse count between 1 and 1.5 minutes})$

**2.1.3 Fitness Index** (long form) =  $(100 \times \text{test duration in seconds}) / (2 \times \text{sum of heart beats in the recovery periods})$ .

Rating	Fitness (long form)	index
Excellent	> 96	
Good	83-96	
Average	68-82	
low average	54-67	
Poor	< 54	
Norms from : Fox et al.1973		

**Table 1:** Computation of Analysis of Variance for Physical Education Students on Cardio Respiratory Endurance Unit – Pulse Rate in counts)

groups	Mean	Sum of Variance	Sum of square	MS	DF	F- Ratio
Cardio Respiratory Endurance	80.38	WG	6.29	6.2909	99	2.4940*
		BG	15.69	15.69		

\* Required F ratio is 3.09 df 99

The table 1 shows that the analysis variance test mean of cardio respiratory endurance was 80.38 for physical education students. The obtained “F” ratio value of cardio respiratory endurance are 2.494, which is lesser than the table value of 3.09 with df 99 required for insignificance at 0.05 level.

**3. Result and Discussion**

Based on the result of the Study, there is an in- significant difference in cardio respiratory endurance. Due to the mean value of the group was fall on average.

The researcher concluded that due to the regular training. The students study in physical education college were fit enough related to the variable cardio respiratory endurance.

**4. Conclusions**

It was concluded that there is no significant difference among

the physical education students in cardio respiratory endurance.

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