



Effect of Aerobic Training with Individualized Heart Rate Based Intensity on Body Mass Index and Cardio Respiratory Fitness among Obese College Men

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Abstract: The purpose of the study was to find out the effect of aerobic training with individualized heart rate based intensity on body mass index and cardio respiratory fitness among obese college men. For the purpose of the study 100 obese individuals, who were students of colleges were selected as subjects. They were treated as obese based on their BMI scores and divided in to two equal groups on BMI and cardio respiratory fitness scorers. All the subjects were assessed through PAR-Q (Physical Activity Readiness Questionnaire) before the selection. The experimental group underwent 12 weeks of aerobic training with individualized heart rate based intensity, four days in a week with a individualized target training zone of 60 % to of 70% their heart rate reserve for 45 minutes a day. The control group was not exposed to any experimental treatment. The training intensity was monitored through heart rate monitor. At the end of the 12 weeks both the experimental and control group were tested on their BMI and cardio respiratory fitness. Only the post test scores of the subjects on BMI and Cardio respiratory fitness were compared through t' ratio. It was concluded that the aerobic training with individualized heart rate based intensity showed a significant reduction in body mass index and significant improvement on cardio respiratory fitness among obese College men.

Keywords: Aerobic, Fitness, BMI.

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INTRODUCTION

Fitness is a blend of traits that enable an individual to perform well in energetic physical activities. Fitness is the capacity to carry out reasonably well, various forms of physical activity, without being disproportionately tired.

Cardio training is an activity that increases heart rate and respiration while using big muscle groups continually and regularly. Cardio workouts would involve walking, running and aerobics exercises. Workouts should cause moderate sweating. Need a minimum of 20 minutes of continued elevated pulse to get the best results at least 3 times a week. Cardio workouts will burn fat.

Weight loss comes from burning more calories than you take in. Even an athlete can see no specific weight loss if he / she get great benefits

from a cardio workout. According to Allyn and Bacon [1] Cardio respiratory endurance is considered to be a key component of health related physical fitness. The individual that has achieved a high measure of cardio respiratory endurance is generally capable of performing 30 to 60 minutes of vigorous exercise without under fatigue.

Body mass index (BMI) is a statistical measure of the weight of a person scaled according to height. $BMI = \text{weight in kg} / \text{height in m}^2$.

Based on the Karvonen formula the individuals target heart rate may be designed for exercise. Step-1: Find out the resting heart rate of the individuals. Step-2: (Finding the Maximum Heart Rate):- $220 - \text{AGE}$. Step-3: (Finding the Heart Rate Reserve):- $\text{Maximum Heart Rate} - \text{Resting Heart Rate}$. Step-4: (Finding the Target Heart Rate of 70%

Heart Rate Reserve Method Intensity). Heart Rate Reserve X 0.70 + Resting Heart Rate. Step-5: (Finding the Target Heart Rate Of 60% Heart Rate Reserve Method Intensity). Heart Rate Reserve X 0.60 + Resting Heart Rate. Cardio Vascular Aerobic Training Zone = 60 % training intensity to 70% training intensity.

Purpose of the Study

The purpose of the study was to find out the effect of aerobic training with individualized heart rate based intensity on body mass index and cardio respiratory fitness among obese college men.

Hypothesis

It was hypothesized that the aerobic training with individualized heart rate based intensity would have significant body mass index and improvement on cardio respiratory fitness among obese college men [2].

METHODOLOGY

For the purpose of the study 100 obese individuals, who were students of college colleges affiliated to Bharathair University, Chennai were selected as subjects. They were between 18 and 25 years of age. They were treated as obese based on their BMI scores. All the subjects were assessed through PAR-Q (Physical Activity Readiness Questionnaire) before the selection. The subjects who passed the PAR-Q were selected as subjects for the study.

The height and weight of all the subjects were measured before the study to find out the BMI of the individuals. The experimental group underwent 12 weeks of aerobic training with individualized heart rate based intensity, four days in a week with a individualized target training zone of 60 % to of 70% their heart rate reserve for 45 minutes a day. The control group was not exposed to any experimental treatment. The training intensity was monitored through heart rate monitor. At the end of the 12 weeks both the experimental and control group were tested on their BMI and cardio respiratory fitness. Only the post test scores of the subjects on BMI and Cardio respiratory fitness were compared through t'ratio. It was concluded that the aerobic training with individualized heart rate based intensity showed a significant reduction in body mass index and significant improvement on cardio respiratory fitness among obese college men. Only the post test scores of the subjects on BMI and Cardio respiratory fitness were compared through t'ratio [3, 4].

RESULTS OF THE STUDY

Table-I: Posttest mean scores, difference between mean, SD and obtained t value on BMI

Groups	Mean	Mean difference	SD	Obtained t value
Experimental	22.7	3.7	1.19	15.3
Control	26.4		1.75	

Required t value at .05 level = 1.984

The obtained t ratio between experimental and control groups on BMI was 15.3, which was greater than the required table value of 1.984. It

shows that there was a significant reduction in the body mass index of the experimental group [5, 6].

Table-II: Posttest mean scores, difference between mean, SD and obtained t value of cardio respiratory fitness

Groups	Mean	Mean difference	SD	Obtained t value
Experimental	1311.6	10	5.96	20.2
Control	1301.6		6.29	

Required t value at .05 level = 1.984

The obtained t ratio between experimental and control groups on cardio respiratory fitness was

20.2, which was greater than the required table value of 1.984. It shows that here was a

CONCLUSION

1. It was concluded that the aerobic training with individualized heart rate based intensity showed a significant reduction in the body mass index among the obese college men.
2. It was also concluded that the aerobic training with individualized heart rate based intensity showed a significant improvement on cardio respiratory fitness among obese college men.

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