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BMI response to the influence of aerobic training on Overweight women

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Abstract

The purpose of the study was designed to find out the influence of aerobic training on BMI of overweight women. To achieve the purpose of the study, forty college overweight women were randomly selected from PSGR Krishnammal College for Women, Coimbatore. Their age ranged from 18 to 24 years. They were divided into two equal groups. The groups consist of 20 each and named experimental group and control group. The investigator did not made any attempt to equate the group. The experimental group was given aerobic training 3days per week for a period of eight weeks and control group was not given any treatment. BMI was assessed by height and weight, the collected data on physical fitness parameters was analyzed by using 't' test at 0.05 level of confidence. The result of the present study explored that the BMI significantly improved due to the influence of aerobic training on BMI of overweight women.

Keywords: aerobic training, body mass index, college women, obese

Introduction

Overweight or obese is a public health problem in the India and as well as all the world's industrialized countries. According to the World Health Organization, obesity is one of the most common public health problems in both developed and developing countries. In developing countries like India, obesity is attributed by several factors like increasing urbanization, use of mechanized transport, increasing availability of processed and fast foods, increased television viewing, adoption of less physically active lifestyles and consumption of more "energy-dense, nutrient-poor" diets. WHO, (2003) [3], Misra, (2010) Stasiulis *et al.* has investigated that two months of aerobic activity three times a week for 60 minutes have desirable effects on body composition and blood lipid profiles in young women. The researchers found that aerobic exercise reduces fat mass and decreased body weight that followed. One of the current public health problems is being over-weight due to the urban lifestyle. Although being over-weight may be a risk factor to develop chronic diseases as diabetes mellitus, hypertension, and some cancers, globally the frequency of obesity is rapidly growing with the closer relationship with sedentary life and poor nutrition habits. Body Mass Index (BMI) is a measurement of being over-weight to detect the extent.

Classification of obesity, according to The World Health Organization, BMI range between 25 and 29.9 referred as overweight and BMI range 30 or greater than 30 as obesity. Aerobic physical exercise is known to be good for weight loss because it uses bigger calories and helps to increase metabolism and help the body burn calories faster. Aerobic exercise is an effective way to lose fat if it is done regularly. American College of Sports Medicine (2012) recommends aerobic physical 3-5 times a week for 20-60 minutes with medium intensity is useful to maintain health fitness. Aerobic training is characterized by the execution of cyclic exercises that carried out with large muscle groups contracting at mild to moderate intensities for a long period of time (Belay *et al.*, 2013) [9]. Aerobic dance is held in groups lead by an instructor and accompanied with musical rhythm for the duration fixed. It has a constant intensity and is a dynamic combination of aerobic activity such as walking, marching, dancing, jogging and jumping exercise, put together in choreographed sequences (Nieman, 1993) [10].

Methodology

To achieve the purpose of the study, forty overweight women were randomly selected from

PSGR Krishnammal College for Women, Coimbatore. Their age ranged from 18 to 24 years. They were divided into two equals groups, consist of 20 each and named control group and experimental group. The investigator did not made any attempt to equate the group. The control group was not given any treatment and the experimental group was given aerobic training 3days per week for a period of eight weeks.

Research design

Body mass Index was assessed by weight (in kilograms)/ (height (in metres))² and the unit of measurement was

inkg/m², the experimental group was given rhythmic exercise 3days per week for a period of eight weeks.

Training programme

The training program was lasted for 45 minutes per session in a day, 5 days in a week for a period of eight weeks duration. These 45 minutes included 5 minutes warm up and 5 minutes warm down remaining 35 minutes allotted for training programme. The training load was increased from the maximum working capacity of the subjects during the pilot study.

Table 1: Computation of 't'- ratio between pre and posttest means of experimental and control group on BMI (Scores in Seconds)

Group	Mean	Standard deviation	Mean difference	Standard error of mean	t- ratio
Pre test	26.66	1.42	0.12	0.013	8.71*
Post test	26.54	1.44			
Pre test	26.86	1.40	0-.004	0.002	-1.83
Post test	26.86	1.40			

Insignificant at .05 level of confidence (2.09)

Table I reveals that the computation of 't' ratio between mean of pre and post-test of BMI of College women. The mean values of pre and posttest of experimental and control group were 26.66, 26.54, 26.86 and 26.86 respectively. Since, the obtained 't' ratio of experimental and control group were 8.71*and1.83. Hence the required table value 2.09, for the degree of freedom 1 and 29 at .05 level of significance. The results clearly indicated that the BMI of the experimental group improved significant due to the influence of aerobic training when compared to control group.

The following bar diagram shows the mean values of pre-test and post-test on BMI of experimental group and control group.

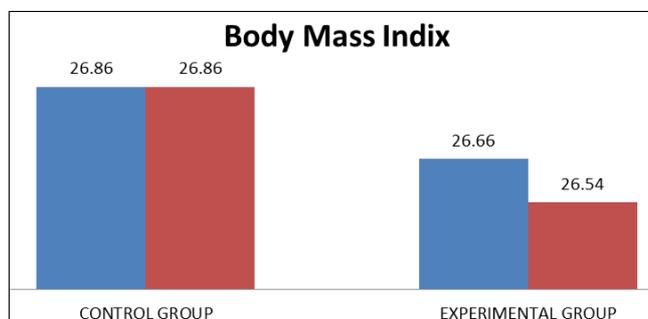


Fig 1: Bar diagram shows the mean values of pre and posttest on BMI of control and experimental groups

Discussion on findings

The study experimented that the BMI response to the influence of aerobic training on college women. The result of the present study indicated that the aerobic training program reduced the Body mass index. The findings of the present study had similarity with the findings of the investigator referred in this study.

In the study of Rice *et al.*, (1999) [4] demonstrated that weight loss induced by a combination of diet and aerobic resistance exercise program had effects on lowering fasting, and oral glucose challenge insulin values and these effects are greater than those of the program including diet *al. one.* (Alejandro *et al.*, 2001) [7] Studied the relationship between indicators of lung with maximum oxygen consumption have pointed slightly. If the body's ability to get and deliver oxygen to the muscles be more the body can do more exercise and physical activity before reaching the fatigue (Toni *et al.*, 2002) [6], Siroos *et al.* (2012) [12] suggested that aerobic exercise cause

increase in pulmonary indices (FVC, FEV1), Vo₂max and decrease in BMI body fat distribution in two gropes and it shown that with decrease in body fat it cause decrease in Vo₂ max and effect on FVC, FEV1. On base result of previous studies and this one we can say that aerobic exercise one of the best training in which effect on pulmonary indices and body fat distribution. Our study findings are consistent with the finding of Nicklas BJ *et al.* who recommended 30 minutes of activity most days a week to treat obesity. Mezghanni *et al.* (2012) [11] showed a reduction of body composition, lipid profile, and insulin resistance in young obese women in Africa after 12 weeks of aerobic intervention. Mezghanni also reported the reduction is increased with the intensity of the exercise. Yavari *et al.* (2012) [12] reported that aerobic training also give a significant reduction in body fat percentage if given alone or combined with resistance training in patients with type 2 diabetes. According to research, Aerobics exercise reduces fat mass in women, in losing weight and reducing body fat it is recommended to exercise regularly. Zileli *et al.* (2017) applied 8 weeks, 5 days a week, 75 minutes exercise training with 75% exercise intensity according to Karvonen formula to obese and overweight women. As a result of the measurements, waist circumference value was 96.50 ± 8.82 cm before exercise, 93.80 ± 7.80 cm after exercise and there was a statistically significant difference in waist circumference. A significant decrease in waist circumference was reported in the literature (Irving *et al.*, 2008; Martins *et al.*, 2010; Ryan *et al.*, 2014) [14, 15, 16]. Shenbagavalli *et al.*, (2008) [17] the aerobic training helped the subjects to decrease the weight and BMI. It is thus concluded that mild aerobic training can be adopted by obese men to decrease the magnitude of obesity.

Conclusions

1. Based on the results of the study it was concluded that the eight weeks of aerobic training have been significantly reduced Body mass Index of overweight women.
2. From the findings of the present study it is postulated that the aerobic training is suitable mode to bring out the desirable changes over body mass index of college overweight women.

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