

Changes on Selected Physiological Variables with the Effect of Varied Aerobic Training Programme among Obese Women

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Abstract

In step aerobic exercises the heart rate increases substantially, but never reaches its maximum level. Aerobic exercises builds stamina for sports and it is also the most important form of exercise for health, since it increases the efficiency of heart, circulation and muscles. Obesity is usually defined in terms of excessive quantities of total body fat. It is a metabolic abnormality caused by excessive calorie intake. It refers to the condition of having excessive amount of total body fat i.e. above 20% for men and above 30% for women. Obesity leads to a) Diabetes b) Chronic heart diseases c) Deterioration of brain functions d) Acceleration of aging process and e) Deteriorated musculoskeletal system. For the purpose of the study total of thirty obese women who works in various places of Chennai were selected at random for this study. They belonged to the age group of 25 to 30 years. The subjects were assigned to three groups (Group A, B, and C) with each group comprising of ten subjects. The results of this study shows that the varied aerobic exercises, namely aerobic and step aerobic exercises significantly improved the Vital Capacity of the obese women where as there is no significant decrease in their Resting Heart Rate.

Keywords: Aerobic Exercises, Floor Exercises, Step Exercises and Obese women.

Introduction

Aerobic refers to a variety of exercises that stimulates heart and lung activity for a time period sufficiently long to produce beneficial changes in the body (Cooper, 1970). Aerobic is a system of exercises designed to promote the supply and use of oxygen in the body. The step aerobics, developed by Gin Miller is a trend that took the aerobics industry by storm. This extremely popular style involves stepping up and down from a platform 15 to 30 centimeters (6 to 12 inches) high while performing different step combinations.

Aerobic exercises builds stamina for sports and it is also the most important form of exercise for health, since it increases the efficiency of heart, lungs, circulation and muscles system. In step aerobic exercises the heart rate increases substantially, but never reaches its maximum level.

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Statement of the Problem

The purpose of the study was to assess the changes on selected physiological variables with the effect of varied aerobic training programme among obese women working in different places of Chennai.

Methodology

To achieve the purpose of the study a total of thirty obese women who works in various places of Chennai were selected at random for this study. They belonged to the age group of 25 to 30 years. The subjects were assigned to three groups (Group A, B, and C) with each group comprising of ten subjects. The training programme started with 5 minutes of warm-up exercise, which comprised flexibility exercises, involving a range of motion exercises to all joints of the upper and lower limbs and trunk. Each training session was supervised by the study investigators. Group A was exposed to selected floor aerobic exercises namely, Marching, Touch Out, Step Touch, Double Step Touch, Grapevine, Cross Over Step, Jump on the Spot, Ham Curl, Front Kick, Knee and Arm Lift. Group B was exposed to step aerobics exercises namely, 'V' Step, Leg Curl, Toe Tap, Front Kick, Slice, 90 Degree Turn, Side Kick, 'V' Step with Flexed Knees, Straddle Down, Trunk twist with Extended and Arms. Group C served as control group and was restricted from participating in the training programme. To assess the effect, 12 weeks varied aerobic training programme, was given. Dependent variables such as Vital Capacity and Resting Heart Rate were chosen for this study. During the first two week subjects exercised for 40 minutes at 50% to 55% of age-predicted HRmax ($HR_{max} = 220 - \text{age}$). The intensity of training was then increased by 5% every 2 weeks. The duration was also increased 10 minutes per session every 12 week so the subjects exercised for 70 min at 80% of HRmax by the end of the training period. Participants cooled down for 5 minutes as they performed the active full range of motion exercises of all joints of the upper limbs, lower limbs, and trunk after the aerobic exercises. The experimental design used in this study is pre test, post test randomized group design. The data were analyzed by using Analysis of Covariance (ANCOVA) as recommended by Clarke and Clarke (1972). In all the cases 0.05 level was fixed as level of significance which was considered as appropriate.

Table-I
Computation of Analysis of Covariance of Pre and Post Test Scores on
Vital Capacity

Source of variance	Df	SSx	SSy	SSxy	MSy.x	SDy.x	F-ratio
Between sets	2	0.5	3.3	1.6	0.8	0.2	18.90*
Within sets	26	3.1	3.2	1.1	0.042		

Table-II
Computation of Analysis of Covariance of Pre and Post Test Scores on
Resting Heart Rate

Source of variance	Df	SSx	SSy	SSxy	MSy.x	SDy.x	F-ratio
Between sets	2	2.1	2.6	1.7	0.8	0.8	1.2
Within sets	26	125.4	86.1	18.6	0.7		

Results

The obtained results on vital capacity and resting heart rate were statistically analysed using Analysis of Covariance (ANCOVA) and are presented in Table I& II. The obtained F-ratio of 18.90 for vital capacity was significantly higher than the required table value of 3.37 at 0.05 level of significance. Hence, it proved that the aerobic training intervention increase vital capacity of the subjects. The obtained F-ratio of 1.2 for resting heart rate was less than the required table value of 3.37 at 0.05 level of significance. Hence it has no significant difference.

Conclusions

The results of this study shows that the varied aerobic exercises, namely aerobic and step aerobic exercises significantly improved the Vital Capacity of the obese women where as there was no changes in their Resting Heart Rate.

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