



Influence of 12 Weeks Aerobic Training on Selected Health Related Physical Fitness Variables of Overweight Men

K. Jayachandran

Director of Physical Education, Arulmurugan College of Engineering and Technology, Karur, Tamilnadu, India.

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Abstract

The purpose of this study was to determinate the Influence of 12 weeks aerobic training on selected health related physical fitness variables of over weight men. The selected variables are muscular strength, muscular endurance, cardio respiratory endurance and body composition. For this study 30 over weight men in the age group of 18 to 22 years were selected from department of arts and science in Annamalai University. The subjects were divided into two groups namely control group and experimental group. The experimental group was given aerobic training for a period of 12 weeks in morning session for three days in a week but the control group is not allowed to participate in aerobic training. The collected data were statistically analyzed by using analysis of covariance (ANCOVA). This study supports the value of an additional aerobic training for the improvement of health related physical fitness in the management of obesity in men including prevention of weight gain.

Keywords: Aerobic Training, Health Related Physical Fitness.

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Introduction

Obesity is defined simply as an excess amount of adipose tissue. The terms adipose and obesity both have their origins in Latin. Adipose stems from adeps, meaning fat, while obesity comes from the lation obesus' which in turn is a contraction of two lation words, ob and edere, meaning to devour of eat away. At the most basic level, obesity is a disease of imbalance. Energy (in the form of calories) that is coming into the body outweighs the energy that is expended. Obesity is considered as an emerging problem in public health in India. The last three decades have witnessed an alarming increase in obesity rates in the world countries. It is the main reason for health problem due to more calories intake and lack of physical activity, occurring in school children. It can lead to serious depressing consequences for the physical and mental health. The adolescent has been most intake of caloric and lack of physical activities such as movies, talking in the phone working, in the computer, sitting reading for a longtime in same position and more home work from school etc. After returning from a school the leisure time has been eating for snacks and oil food.

The major problems associated with our society utilized is for carry all the extra strokes, high blood pressure, cardiovascular diseases, hypertension, obesity, diabetics, and chronic respiratory diseases. Excess body

weight and blocky fat are like to cause coronary heart disease risk factor such as the blood pressure, total cholesterol, and lipoprotein ratios in children and adolescents (Vivian , Heyward, Dale and Wagner 2004). The most widely body fat can be directly measured however, the required methods are expensive, time consuming. Jherefore, they are generally suitable for methods aerobic and yoga exercises practice. A more practical alternative, body mass index (BMI) has been normally accepted as an indicator of underweight, overweight and obesity in adults. Aerobic exercise is an exercise of choice for fat loss. Aerobic exercise is repetitive and rhythmic. For maximum weight loss benefit it must be performed non stop for 30 or more minutes. Walking, jogging, biking, swimming, rowing and aerobic dancing (if continuous) are examples for aerobic exercise. Tennis, bowling, golf, lifting weights, and competitive sports are not aerobic because they involve in stopping and starting. It need not be executed with speed. Duration of the training period, at least 30 minutes of nonstop aerobic exercise each day, will maximize your weight loss.

Methodology

The purpose of this study was to determinate the influence of aerobic training on health related physical fitness variables of over weight men. The selected variables are muscular strength, muscular endurance, cardio respiratory endurance and body composition. For this study 30 obese men in the age group of 18 to 22 years were selected from department of arts and science in Annamalai University. They

Correspondence

K.Jayachandran,
E-mail:vetri.nilavan80@gmail.com, Ph. +9199447 58131

participated in this research voluntarily and cheerfully without any compulsion. The selected dependent variables muscular strength, muscular endurance, cardio respiratory endurance, and body composition were assessed by using standardized test items and equipments such as dynamometer, sit-ups test, 12 minutes run/walk and skin fold caliper. The training programme were scheduled for one session a day, each session lasted between 45 minutes and an hour, approximately excluding warming up and relaxation in morning session. During the training period, the experimental group underwent their

respective aerobic training programme three days per week (alternate days) for twelve weeks. The group-2 acted as control, which did not undergo any special training programme. The training sessions were held every other day, so that the body could rest. The data collected from the two groups on the health related physical fitness variables were used for the statistical analysis to find out whether or not there was any significant difference between the two groups by the analysis of covariance (ANCOVA) method. The level of significance was fixed at- 0.05 level of confidence.

Results

Table I. Computation of Analysis of Covariance on Muscular Strength Endurance

	EXP G	CON G	Source of Variance	Sum of Squares	Df	Mean Squares	F-Ratio
Pre test mean	34.22	33.98	Between	0.102	1	0.102	1.01
			Within	2.825	28	0.101	
Post test mean	39.28	34.14	Between	2.128	1	2.128	6.90*
			Within	8.625	28	0.308	
Ad Post test mean	39.44	34.10	Between	6.221	1	6.221	14.235*
			Within	0.437	27	0.437	

(The required table value for significant at 0.05 level of confidence with df 1 and 28 and 1 and 27 were 4. 20 and 4. 21 respectively)

Table-1 shows that the adjusted post test means on muscular strength endurance of aerobic training group and control group are 39.44 and 34.10 respectively. The obtained F ratio of 14.235 for adjusted post-test mean is more than table value of 4.21 for df 1 and 27 require for

significance at 0.05 level of confidence on muscular strength endurance. The result of the study shows that there was significant difference between the adjusted post test mean of aerobic training group and control group on muscular strength endurance.

Figure I. The adjusted post-test mean value of experimental group and control group on muscular strength endurance

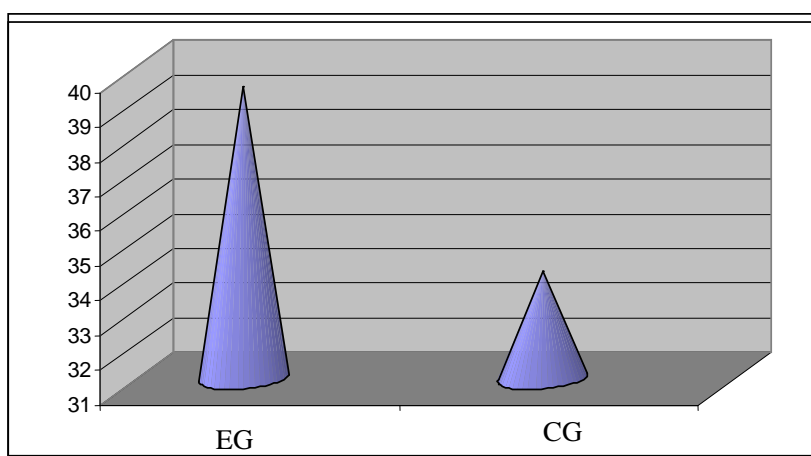


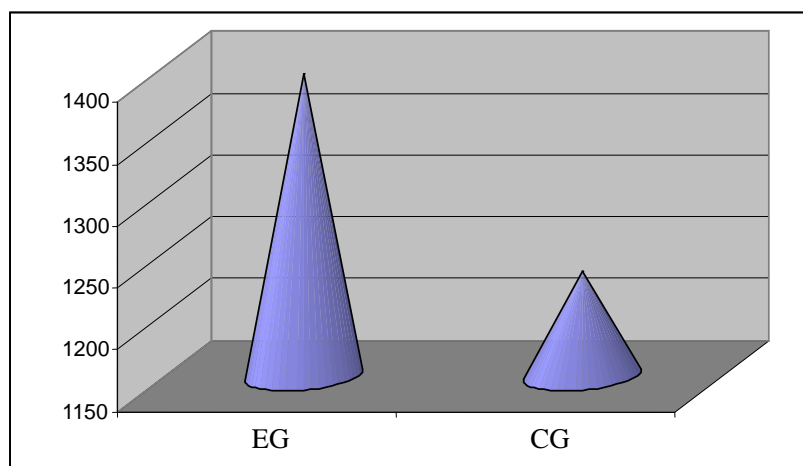
Table II. Computation of Analysis of Covariance on Cardio Respiratory Endurance

	EXP G	CON G	Source of Variance	Sum of Squares	Df	Mean Squares	F-Ratio
Pre test mean	1240.10	1231.40	Between	5603.37	1	5603.37	2.495
			Within	62893.30	28	2246.19	
Post test mean	1410.50	1235.50	Between	86403.37	1	86403.37	55.16*
			Within	42293.30	28	1566.42	
Ad Post test mean	1395.10	1235.10	Between	42292.60	1	42292.60	9.18*
			Within	124403.00	27	4607.55	

(The required table value for significant at 0.05 level of confidence with df 1 and 28 and 1 and 27 were 4. 20 and 4. 21 respectively)

Table II shows that the adjusted post test means on cardio respiratory endurance of aerobic training group and control group are 1395.10 and 1235.10 respectively. The obtained F ratio of 9.18 for adjusted post-test mean is more than table value of 4.21 for df 1 and 27 require for significance at 0.05 level of confidence on cardio respiratory endurance. The result of the study shows that

there was significant difference between the adjusted post test mean of aerobic training group and control group on cardio respiratory endurance. The adjusted post-test mean value of experimental group and control group on cardio respiratory endurance are graphically represented in figure II.

Figure II. The adjusted post-test mean value of experimental group and control group on cardio respiratory endurance**Table III.** Computation of Analysis of Covariance on Body Mass Index

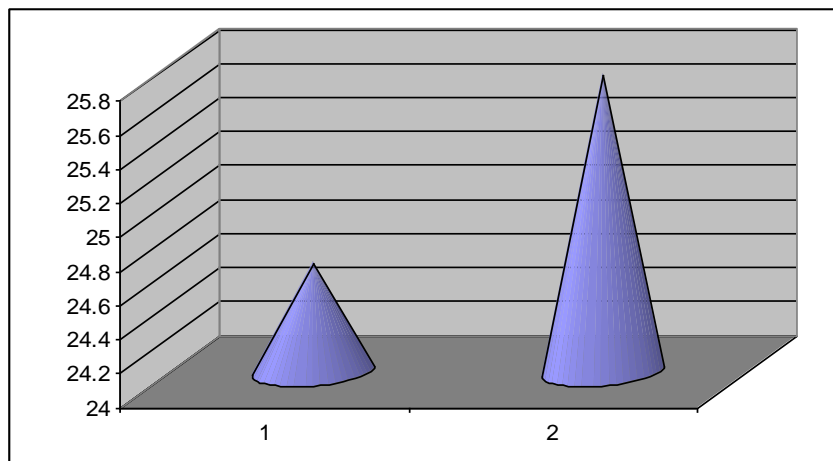
	EXP G	CON G	Source of Variance	Sum of Squares	Df	Mean Squares	F-Ratio
Pre test mean	25.53	25.72	Between	0.36	1	0.36	0.29
			Within	47.82	28	1.26	
Post test mean	24.58	25.81	Between	15.31	1	15.31	15.31*
			Within	37.92	28	1.00	
Ad Post test mean	24.64	25.75	Between	12.03	1	12.03	33.42*
			Within	13.36	27	0.36	

(The required table value for significant at 0.05 level of confidence with df 1 and 28 and 1 and 27 were 4. 20 and 4. 21 respectively)

Table III shows that the adjusted post test means on body mass index of aerobic training group and control group are 24.64 and 25.75 respectively. The obtained F ratio of 33.42 for adjusted post-test mean is more than table value of 4.21 for df 1 and 27 require for significance at 0.05 level of confidence on cardio

respiratory endurance. The result of the study shows that there was significant difference between the adjusted post test mean of aerobic training group and control group on body mass index. The adjusted post-test mean value of experimental group and control group on body mass index are graphically represented in figure III.

Figure III. The adjusted post-test mean value of experimental group and control group on body mass index



Discussion on Finding

Overweight and obesity prevalence of children and men have risen dramatically over recent decades. The results of the study specify that health related physical fitness variables improved significantly by their under going the aerobic training. The study was conducted for a period of 12 weeks involving 30 subjects. The changes in the selected parameters were attributed to the regular practices of physical activity and efficiency exercise training programme. Specifically the results indicated significant increase in efficiency of selected variables during three physical fitness variables such as muscular strength endurance, cardio-respiratory endurance and body mass index were shown significant improvement through aerobic training programme for the experimental group when compared with control group. The evidence based on research found that, greater energy expenditure in overweight obese men may be particularly pertinent while considering that obese men typically have a (Rowland, 1991 and maffeis et al., 1994). These studies have indicated that both controlled trials and cross-sectional sectional studies little but significant positive special effects of activity for both non-obese and obese men (Baranowski, and Baror a 1994).

Conclusion

The following conclusions were drawn. The experimental group has achieved significant improvement on selected health related physical fitness variables of muscular strength endurance, cardio respiratory endurance, and BMI due to aerobic training.

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