International Journal of Computational Research and Development (IJCRD)
International Peer Reviewed - Refereed Research Journal, Website: www.dvpublication.com
Impact Factor: 5.015, ISSN (Online): 2456 - 3137, Volume 10, Issue 1, January - June, 2025

EFFECT OF AEROBIC TRAINING AND WALKING PROGRAMME ON RESTING HEART RATE AND VITAL CAPACITY OF OBESE COLLEGE WOMEN STUDENTS

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Cite This Article: Dr. A. Muthukumar, "Effect of Aerobic Training and Walking Programme on Resting Heart Rate and Vital Capacity of Obese College Women Students", International Journal of Computational Research and Development, Volume 10, Issue 1, January - June, Page Number 24-25, 2025.

Abstract:

Aerobic exercise is sometimes known as 'Cardio' exercise that requires pumping of oxygenated blood by the heart to deliver oxygen to working muscles. 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. Walking is great for every one senior, youngster, men and women. It's convenient you can do it anytime, anywhere in any season. It's a rhythmic, gentle activity you can walk comfortably with little risk of injury. Obesity is a major public health problem which plays a central role in the development of diabetes mellitus and confers an increases risk for CHD, high blood pressure, osteoarthritis, various cancers and all-cause modality. It refers to the condition of having excessive amount of total body fat i.e. above 20% for men and above 30% for women. Total of thirty middle aged obese women who were studied in Arul Anandar College, Karumathur, Madurai were selected randomly for this study. They belonged to the age group of 17 to 21 years. The subjects were divided into three groups (Group A, B and C) with each group having a ten subjects. The results of this study shows that the aerobic exercises and walking programme significantly improved the Vital Capacity of the obese college women students and where as there is no significant variation in their Resting Heart Rate.

Key Words: Aerobic Exercises, Walking Programme, Obese Women.

Introduction:

Aerobic exercise is sometimes known as 'Cardio' exercise that requires pumping of oxygenated blood by the heart to deliver oxygen to working muscles. 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. Aerobic exercise stimulates the heart rate and breathing rate to increase in a way that can be sustained for the exercise session. In contrast, anaerobic ("without oxygen") exercise is activity that causes you to be quickly out of breath, like sprinting or lifting a heavy weight.

Walking is great for every one senior, youngster, men and women. It's convenient you can do it anytime, anywhere in any season. It's a rhythmic, gentle activity you can walk comfortably with little risk of injury. Walking is a popular activity with Indians of all ages after 1970's. It's an efficient form of exercise, and one you can do safely all your life. It doesn't offer the speed or demands of some of the other aerobic activities. Included here, but almost every one finds it pleasurable and relaxing and it is beneficial.

Obesity is usually 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 musculo - skeletal system. Obesity is a major public health problem which plays a central role in the development of diabetes mellitus and confers an increases risk for CHD, high blood pressure, osteoarthritis, various cancers and all-cause modality.

Obesity, as an excess of adipose tissue, is difficult to measure in population-based studies. Obesity may be defined as an abnormal growth of a adipose tissue due to an enlargement of fat cell size (hypertrophic obesity) or an increase in fat cell number (hyperplastic obesity) or a combination of both. Obesity is often expressed in terms of Body Mass Index (BMI). A BMI of 30 or more in males and 28.6 or more in females indicates obesity.

Statement of the Problem:

The purpose of the study is to make a scientific research to assess the effect of aerobic training and walking programme on resting heart rate and vital capacity of obese college women students.

Methodology:

Total of thirty obese college women students who were studied in Arul Anandar College, Karumathur, Madurai were selected randomly for this study. They subjects were belonged to the age group of 17 to 21 years. The subjects were divided into three groups (Group A, B, and C) with each group having ten subjects. Group C served as control group and was restricted from participating in the training programme. To assess the effect, 12 weeks training programme, was given. Dependent variables, Resting Heart Rate and vital capacity were chosen for this study. The experimental design used in this study was pre test, post test randomized group design. Here, the groups were randomly formed but all groups are given a pre test as well as post test.

Training Programme:

Aerobics Training:

Group A was exposed to selected aerobic exercises namely,

- Marching
- 'V' Step
- Step Touch

- Front Kick
- Grapevine
- Cross Over Step
- Jump on the Spot
- Leg Curl
- Straddle Down
- Knee and Arm Lift

Walking Programme:

Group B was exposed to walking programme for 45 minutes,

- Warm-up (5 min)
- Speed-up(5 min)
- Recovery (5 min)
- Speed up (5 min)
- Recovery (5 min)
- Speed up (5 min)
- Recovery (5 min)
- Speed up (5 min)
- Cool down(5 min)

Results:

Table 1: 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 Within Sets	2 26	0.5 3.1	3.3 3.2	1.6 1.1	0.8 0.042	0.2	18.90*

Table 2: 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 Within Sets	2 26	2.1 125.4	2.6 86.1	1.7 18.6	0.8 0.7	0.80	1.20

The obtained results on vital capacity and resting heart rate were statistically analysed using Analysis of Covariance (ANCOVA) and results were presented in Table I & II. The obtained F-ratio of 18.90* for vital capacity were significantly higher than the required table value of 3.37 at 0.05 level of significance. 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 aerobic exercises and walking programme significantly improved the Vital Capacity of the obese college women students whereas there was no significant variation in their Resting Heart Rate.

References:

1. Cooper, K.H. (1970), The New Aerobics (New York: Bin tin Books).
2. David H. Clarke, H. Harrison Clarke, Research Processes in Physical Education (Second Edition) (Englewood Cliffs, N.J: Prentice Hall Inc.,
3. Ezhilarasi. R., Palraj, A. & Suresh Kumar, M. (2025). Impact of Theraband Training on Selected Skill Variables of Volleyball players. South Eastern European Journal of Public Health, XXVI, 817-820.
4. Green S. and Dow son B, Measurement of Aerobic Capacity in Humans (University of Western Australia).
5. Madhu HJ, K Ivin Jabakumar, M Suresh Kumar (2025). Influence of Battle Rope Training and its Effect on Selected Physical Variables among Volleyball Players. South Eastern European Journal of Public Health, XXVI, 821-824.
6. Nancy L. Greer, "Prediction of Aerobic capacity from Step up Exercise and Recovery Heart Rate on 6, 8, 12, 16 inch Bench Heights", Research Quarterly, (University of Wisons in River falls, 1985).
7. Raghu GM, K Ivin Jabakumar, M Suresh Kumar (2025). Bosuball training and its impact towards physical variables of handball players, South Eastern European Journal of Public Health, XXVI, 548-552.
8. Rosemary A Watson and Neil B Pride, "Postural Changes in Lung Volumes and Respiratory Resistance in Subjects with Obesity", Journal of Applied Physiology (September 3, 2004).
9. Suresh Kumar M & Needhi Raja A. & Ivin Jabakumar, K. (2010). E-content based learning in physical education -with special reference to hockey. Conference proceedings, Bharathidasan University, 15-18.
10. Vijayarani, C. A., V. Vallimurugan & Suresh Kumar. M. (2012). Influence of Yogic Practices on Selected Physiological and Psychological Variables of Adolescent Boys. Recent Research in Science and Technology. 3,1.
11. William D. Mc Ardle, Frank I. Katch, Victor L. Katch, Exercise Physiology Energy, Nutrition and Human Performance, (Lippincott: Williams & Wilkins A. Wolters Kluwer Company, 1996).