RELATIVE EFFECTS OF AEROBIC TRAINING AND AEROBIC TRAINING WITH DIFFERENT FREQUENCIES OF RESISTANCE TRAINING ON SELECTED PHYSIOLOGICAL AND PERFORMANCE FACTORS

AN ABSTRACT
SUBMITTED TO THE BHARATHIDASAN UNIVERSITY THROUGH THE DEPARTMENT OF PHYSICAL EDUCATION GANESAR COLLEGE OF ARTS AND SCIENCE, MELAISIVAPURI PUDUKKOTTAI IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF

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ABSTRACT

Today we live in a world that is largely technological. We are surrounded by machines and structures that are the product of human labor, the product of the reshaping of the world to meet human desires. Moreover, while some of these technologies are the result of thousands of years of craft work, many are the result of scientific breakthroughs. For example, electric lighting, computers, genetically engineered food, many household chemicals and plastics are the result of scientific knowledge in physics, chemistry and biology applied to transform nature.

Sports play a prominent role in modern society. It is important to an individual, a group, a nation, indeed the world. Youth of today lack in physical courage, stamina and skill.

Aerobic exercise refers to exercise that involves or improves oxygen consumption by the body. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy-generating process. Many types of exercise are aerobic, and by definition are performed at moderate levels of intensity for extended periods of time. To obtain the best results, an aerobic exercise session involves a warming up period, followed by at least 20 minutes of moderate to intense exercise involving large muscle groups, and a cooling down period at the end.
Aerobics, was published in 1968, and included scientific exercise programs using running, walking, swimming and bicycling. The book came at a fortuitous historical moment, when increasing weakness and inactivity in the general population was causing a perceived need for increased exercise. It became a best seller. Cooper's data provided the scientific baseline for almost all modern aerobics programs, most of which are based on oxygen-consumption equivalency.

Aerobic exercise and fitness can be contrasted with anaerobic exercise, of which strength training and weight training are the most salient examples. The two types of exercise differ by the duration and intensity of muscular contractions involved, as well as by how energy is generated within the muscle. Initially during aerobic exercise, glycogen is broken down to produce glucose, which is then broken down with the help of oxygen to generate energy. In the absence of these carbohydrates, fat metabolism is initiated instead. The latter is a slow process, and is accompanied by a decline in performance level. This gradual switch to fat as fuel is a major cause of what marathon runners call "hitting the wall". Anaerobic exercise, in contrast, refers to the initial phase of exercise, or to any short burst of intense exertion, in which the glycogen or sugar is consumed without oxygen, and is a far less efficient process. Operating an aerobically, an untrained 400 meter sprinter may "hit the wall" short of the full distance.

For this purpose, forty five men students studying Bachelor of Physical Education Health Education and Sports in H.H. The Rajah’s College, Pudukkottai, Tamil Nadu, India, were selected randomly as
subjects. The selected subjects age, height and weight ranged from 18 to 21 years, 162 to 167 centimeters and 51-65 kilograms and the means were 20 years 3 months, 167 centimeters and 62 kilograms respectively.

The dependent variables selected for this study were Breath holding time, Resting Pulse Rate, Respiratory Rate, Vital capacity and 1500 Meters run performance. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variables. The data collected data from the four groups prior to and immediately after the training programme on the selected criterion variables were statistically analyzed with dependent ‘t’ test and Analysis of Covariance (ANCOVA).

Whenever the ‘F’ ratio for adjusted posttest means was found to be significant, Scheffe’s test was followed, as a post hoc test to determine which of the paired mean differences was significant. In all the cases .05 level of confidence was fixed as a level of confidence to test the hypotheses.

It is concluded that, Aerobic Training with Resistance Training (Two days per week) group was found to be better than the Aerobic Training group and Aerobic Training with Resistance Training (One day per week) group in developing Breath holding time, Resting Pulse Rate, Respiratory Rate, Vital capacity and 1500 Meters run performance.