



INFLUENCE OF AEROBIC TRAINING ON STRENGTH ENDURANCE AND CARDIO RESPIRATORY ENDURANCE AMONG COLLEGE MEN STUDENTS

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Abstract:

The purpose of the study was designed to examine the effect of Aerobic training on strength endurance and cardio respiratory endurance of college men students. For the purpose of the study, thirty men students from the University College of Arts, Tumkur University, Tumkur, Karnataka, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent Aerobic training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables, namely strength endurance and cardio respiratory endurance were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using bend knee sit ups and cooper's 12 minutes run / walk test respectively at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered appropriate. The results of the study showed that there was a significant difference between Aerobic training group and control group on strength endurance and cardio respiratory endurance. And also it was found that there was a significant improvement on strength endurance and cardio respiratory endurance due to twelve weeks of Aerobic training.

Key Words: Aerobic Training, Strength Endurance, Cardio Respiratory Endurance, College Men Students

Introduction:

Aerobic training, also known as cardiovascular or cardio exercise, is a cornerstone of any well-rounded fitness regimen. It's a form of physical activity that increases your heart rate and breathing rate over an extended period, engaging large muscle groups in rhythmic movements. The term "aerobic" refers to the presence of oxygen, indicating that this type of exercise relies on oxygen to meet the energy demands of your muscles during sustained activity. The primary goal of aerobic training is to improve the efficiency of your cardiovascular system, which includes your heart, lungs, and circulatory system. Through consistent aerobic exercise, your heart becomes stronger, pumping blood more efficiently with each beat, while your lungs enhance their capacity to take in oxygen and deliver it to your muscles. This results in better endurance, stamina, and overall cardiovascular health.

Aerobic exercises come in various forms, ranging from low-impact activities like walking and swimming to more intense options such as running, cycling, and aerobic dance classes. Regardless of the specific activity, the key is to maintain a sustained level of moderate to vigorous intensity that elevates your heart rate and keeps it elevated for an extended period, typically at least 20-30 minutes per session. Benefits of aerobic training extend beyond cardiovascular health. Regular aerobic exercise can help manage weight, improve mood, reduce stress, enhance sleep quality, and lower the risk of chronic conditions such as heart disease, stroke, type 2 diabetes, and certain cancers.

When incorporating aerobic training into your fitness routine, it's essential to start gradually, especially if you're new to exercise or have underlying health concerns. Begin with activities you enjoy and gradually increase the intensity and duration as your fitness level improves. Consistency is key, aiming for at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity aerobic exercise per week, spread out over several days. Aerobic training is a vital component of a healthy lifestyle, offering a wide array of physical and mental benefits. Whether you're aiming to improve your cardiovascular fitness, manage your weight, or simply boost your overall well-being, incorporating regular aerobic exercise into your routine can help you achieve your goals and lead a happier, healthier life..

Methodology:

The purpose of the study was designed to examine the effect of Aerobic training on strength endurance and cardio respiratory endurance of college men students. For the purpose of the study, thirty men students from the University College of Arts, Tumkur University, Tumkur, Karnataka, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent Aerobic training for three days per week for twelve weeks. Group II acted as control who did not undergo any special

training programme apart from their regular physical education programme. The following variables namely strength endurance and cardio respiratory endurance were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using bend knee sit ups and cooper's 12 minutes run / walk test respectively at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered appropriate.

Analysis of the Data:

Strength Endurance:

The analysis of covariance on strength endurance of the pre and post test scores of Aerobic training group and control group have been analyzed and presented in table 1.

Table 1: Analysis of Covariance of the Data on Strength Endurance of Pre and Post Tests Scores of Aerobic Training and Control Groups

Test	Aerobic Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	41.33	40.40	Between	6.53	1	6.53	2.15
S.D.	1.78	1.84	Within	84.93	28	3.03	
Post Test							
Mean	46.27	40.53	Between	246.53	1	246.53	20.00*
S.D.	1.58	1.78	Within	345.20	28	12.33	
Adjusted Post Test							
Mean	45.83	40.97	Between	164.50	1	164.50	182.66*
			Within	24.31	27	0.90	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 1 shows that the adjusted post-test means of Aerobic training group and control group are 45.83 and 40.97 respectively on strength endurance. The obtained "F" ratio of 182.66 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on strength endurance.

The results of the study indicated that there was a significant difference between the adjusted post-test means of Aerobic training group and control group on strength endurance.

Cardio Respiratory Endurance:

The analysis of covariance on cardio respiratory endurance of the pre and post test scores of Aerobic training group and control group have been analyzed and presented in table 2.

Table 2: Analysis of Covariance of the Data on Cardio Respiratory Endurance of Pre and Post Tests Scores of Aerobic Training and Control Groups

Test	Aerobic Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	1412.00	1386.67	Between	4813.33	1	4813.33	1.75
S.D.	51.02	45.20	Within	77173.33	28	2756.19	
Post Test							
Mean	1478.00	1396.00	Between	50430.00	1	50430.00	11.57*
S.D.	50.42	52.26	Within	122030.00	28	4358.21	
Adjusted Post Test							
Mean	1466.52	1407.48	Between	24603.56	1	24603.56	81.22*
			Within	8179.11	27	302.93	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 2 shows that the adjusted post-test means of Aerobic training group and control group are 1466.52 and 1407.48 respectively on cardio respiratory endurance. The obtained "F" ratio of 81.22 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on cardio respiratory endurance.

The results of the study indicated that there was a significant difference between the adjusted post-test means of Aerobic training group and control group on cardio respiratory endurance.

Conclusions:

- There was a significant difference between Aerobic training group and control group on strength endurance and cardio respiratory endurance.
- And also it was found that there was a significant improvement on selected criterion variables such as strength endurance and cardio respiratory endurance due to Aerobic training.

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