ISSN: 2349 - 4891

International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

Effect of Aerobic Training on Selected Health Related Physical Fitness and Physiological Variables of College Men Students

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Received 10th February 2015, Accepted 20th April 2015

Abstract

The purpose of the study was investigating the effect of Aerobic Training on selected physical and physiological variables of College men students. For the purpose of this study, thirty subjects were randomly selected from the Ramco Institute of Technology, Rajapalayam. Hostel students were selected as subjects for the study and divided into two equal groups. Group – I (n=15) acted as control group and Group – II (n=15) acted as Experimental group. Control group maintained their daily routine activities and no special training was given to them. Experimental group underwent Aerobic Training for 6 weeks under the supervision of investigator. The age of the subjects ranged from 18-20 years. Health related Physical Fitness variables such as Cardio Respiratory Endurance and Flexibility and Physiological variables such as Vital Capacity and Resting Pulse Rate after the training period (6 weeks). Analysis of covariance [ANCOVA] was used to find out the significant difference if any, between control and experimental groups on selected Health related fitness Physical and Physiological variables of College men students. The level of confidence was fixed at 0.05 levels to test the significance. From the results of the study it was concluded that there was a significant difference in Cardio Respiratory Endurance, where as there was no significant difference in Flexibility, Vital Capacity and Resting Pulse Rate between Control and Experimental groups of College Men Students.

Keywords: Cardio Respiratory Endurance, Flexibility, Vital Capacity, Resting Pulse Rate.

Introduction

In the present world given a great importance and prominence to sports and games. People all over the world are of the idea that the development of a country is significantly notable and related to the development of sports and games in the country. The mechanics of aerobic exercise require that oxygen be brought in by the lungs and transferred to the blood vessels. Oxygen rich blood is then pumped by the heart to the muscles. The muscles utilize oxygen for muscle contraction. Through routine aerobic activity, the body becomes more efficient at processing oxygen. Examples of aerobic activity include running, jogging, biking, rowing and walking. In fact any exercise that incorporates large muscle groups raises the heart rate, breathing rate and body temperature is aerobic in nature. Physical fitness is highly influenced by human health. A nation's true wealth lies not in its lands and waters, not in its forests and mines, not in its flocks and herds, not in its rupees but in its healthy and happy men, women and children.

Aerobic exercise and fitness can be contrasted with anaerobic exercise, of which strength training short-distance running 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. In most conditions, aerobic exercise occurs simultaneously with aerobic exercises because the less efficient anaerobic metabolism must supplement the aerobic system due to energy demands that exceed the aerobic system's capacity. What is generally called aerobic exercise might be better termed "solely aerobic", because it is designed to be low- intensity enough not to generate lactate via pyruvate fermentation, so that all carbohydrate is aerobically turned into energy.

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Methodology

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Table I. Criterion Measures

S.No	Criterion Variable	Test Items
1.	Cardio Respiratory Endurance	Cooper's 12 Mins Run / Walk Test
2.	Flexibility	Sit and Reach Test
3.	Vital Capacity	Spirometer
4.	Resting Pulse Rate	Radial Pulse

Results

The descriptive analysis of data collected cardio respiratory endurance and physiological variables after six weeks of aerobic training is presented in table –II.

Table II. Analysis of covariance for the adjusted post test means value of experimental and control groups on selected dependent variables

Variables	Experimental Group	Control Group	SOV	SS	df	MS	F-ratio
Cardio Respiratory Endurance	2618.66	2487.33	Between	171153.3	1	171153.3	31.46*
			Within	146890.3	27	5440.38	
Flexibility	18.33	12.79	Between	227.72	1	227.72	421.70*
			Within	14.58	27	0.54	
Vital Capacity	2618.66	2487.32	Between	801609.1	1	801609.1	203.44*
			within	106386.3	27	3940.23	
Resting Pulse Rate	68.32	74.28	Between	257.65	1	257.65	51.72*
			Within	134.501	27	4.98	

Required table value for significance at 0.05 level of confidence for df of 1 and 27 is 4.21
*significant at 0.05 level of confidence

The findings of the study shows that significant difference existing between on Cardio Respiratory Endurance, Flexibility, Vital capacity and Resting Pulse Rate n Aerobic Training and control groups on Cardio Respiratory Endurance, Flexibility, Vital capacity and Resting Pulse Rate, since the obtained 'F' ratio of 31.46, 421.70, 203.44 and 51.72 respectively were greater than the required table value of 4.21 for significance at 0.05 level of confidence for df of 1 and 27. Hence it is concluded that six weeks of aerobic training can produce significant changes on cardio respiratory endurance, flexibility, vital capacity and resting pulse rate of college men students. Studies have shown that there was significant improvement on cardio respiratory endurance, flexibility, vital capacity and resting pulse rate due to the effect of aerobic training.

Conclusions

The result of this study demonstrated that, aerobic training has significant impact on cardio respiratory endurance, flexibility, vital capacity and resting pulse rate. Hence it is suggested that the adaptation changes of aerobic training are very dynamic and variable to each individual. For long lasting change, there needs to be a systematic administration of sufficient stimulus, followed by an adaptation of the individual and then the introduction of a new progressively greater stimulus.

References

1. Author's Guide, Our Physical Activities, Bombay: Printing Works, 1955.
2. Balabins, C.P. Psaratis, C.N., Moukasm, Vasilion M.P. and Behrakis P.K., (2003) "Early Phase Changes by Concurrent Endurance and Strength

Training", Journal of Strength and Conditioning Research, 2,293-401
3. Beashel, Paul and John Taylor, The World of Sports Examined, United Kingdom: Nelson Publication, 1996.
4. Bosco, C.,Mogooni, P and Luthnern P. "Relationship between Isokinetic Performance and Ballistic Movement", European Journal of Applied Physiology 51: 357-364
5. Bucker, Charles. A., Foundation of Physical Education, Saint Louis: C.V. Mosby Company, 1964.
6. Carl E.Kilafs and Daniel D. Arnbein, Modern Principles of Athletic Training (St. Louis: The C.V. Mosby Company, 1963), p.63
7. David H. Clake and H. Harrison Clarke, Research Processors in Arts Education, Recreation and Health (Englewood Cliffs, N.J: Prentice Hall, Inc. 1970), 140
8. Dawer Victor, P and Robert P. Pengrazi, Dynamic Physical Education for Elementary School Children, New York: Macmillan Publishers, 1989.
9. Goldberg, Barry, Sports and Exercise for Children with Chronic Health Conditions, Champaign Illinois: Human Kinetics Publishers, 1986.