

Effects of aerobic training and circuit training on muscular strength and muscular endurance

D. MANIAZHAGU, C.ROBERT ALEXANDER AND SUKUMAR SHA

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ABSTRACT

The study was designed to investigate the effects of aerobic training and circuit training on muscular strength and muscular endurance. For this investigation 45 school boys were selected randomly from Thanjavur Arunachalam Chettiar Govt. Higher Secondary School, Kottaiyur, Karaikudi, Tamilnadu as subjects. Their age ranged from 15 to 17 years. They were divided into three equal groups namely. Experimental group I, II and control group. In a week five days the Experimental group I underwent aerobic training practice, Experimental group II underwent circuit training practice and control group was not given any specific training. Muscular strength and muscular endurance were chosen as a criterion variables. They assessed before and after the training period of eight weeks. The analysis of covariance was used to determine if any significant difference was present among the three groups of the dependent variables. The study revealed that the selected criterion variables were significantly improved due to the influence of aerobic training and circuit training.

See end of the article for authors' affiliations

Correspondence to:

D.MANIAZHAGU

Department of Physical Education and Health Sciences, Alagappa University, KARAIKUDI (T.N.) INDIA

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Aerobic means with oxygen and refers to the use of oxygen in the body's metabolic system or energy generating process. An aerobic exercise refers to exercise that involves or improves oxygen consumption by the body. Many types of exercise are aerobic, and by definition are performed at moderate levels of intensity for extended periods of time (Dick, 1980).

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. Circuit training is a method of physical conditioning that employed both apparatus resistance training and calisthenics conditioning exercise (Scholich, 1979). It provides a means of achieving optimal fitness in a systematized controlled fashion. The intensity and vigour of circuit training are indeed challenging and enjoyable to the performer. This system produces positive changes in motor performance, general fitness, muscular power endurance and speed. In this study an attempt has been made to find out the effects of aerobic training and circuit training on muscular strength and muscular endurance.

METHODOLOGY

The experimental group I served aerobic training practice and experimental group -II served circuit training practice. Both experimental groups performed

respective training programme for five days in a week upto eight weeks. And control group was not given any specific training. The data were collected at prior to and after the training programme of eight weeks. Muscular strength was measured by push-up test for 60 sec. and muscular endurance was measured by bent knee sit-ups for 60 sec. The analysis of covariance (ANCOVA) was used to analyze the data. The .05 level of confidence was used to test the level of significance (Anderson, 1971). Training was given in the morning session. The training session included warming up and limbering down. Every day the workout lasted for 45 to 60 min approximately. The subjects underwent their respective training programmes as per the schedules under the strict supervision of the investigator.

OBSERVATIONS AND DISCUSSION

Table 1 shows that the pre-test mean values on muscular strength of aerobic training, circuit training and control group were 22.67, 22.60 and 22.07, respectively. The obtained "F" ratio of 0.05 for pre-test scores was less than the table value of 3.222 for df 2 and 42 required for significance at .05 level of confidence on muscular strength.

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