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Effect of Continuous Training on Cardio Respiratory Endurance among College Men Long Distance Runners

[1]Dr.K.Divya & [2]M.Madhankumar

[1]Assistant Professor, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India.
[2]Ph.D., Research Scholar, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India.

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Abstract

The purpose of the present study was to investigate the effect of continuous training on cardio respiratory endurance among college men long distance runners. To achieve the purpose of the study thirty men athletes were selected from Alagappa University affiliated colleges, during the year 2014-15. The subject's age ranges from 18 to 25 years. The selected athletes were divided into two equal groups consists of 15 men athletes each namely experimental group and control group. The experimental group underwent continuous training programme for six weeks. The control group was not taking part in any exercise during the course of the study. Cardio respiratory endurance was taken as criterion variables and they were tested by using cooper's 12 min run/ walk test for this study. Pre-test was taken before the exercise period and post- test was measured immediately after the six weeks exercise period. The data will be collected before and after the experimental treatment. The data obtained from the experimental period will be statistically analysed with 't' Ratio. The level of significance will be fixed at .05 level of confidence for all the cases. The results revealed that there was a significant difference found on the criterion variables. The difference found is due to continuous training given to the experimental group on cardio respiratory endurance when compared to control group.

Keywords: Continuous Training, Cardio Respiratory Endurance, Cooper 12 min run/walk test, Long Distance Runner.

Introduction

Training is the process of preparation for some task. The term training is widely used in sports. But there is some disagreement among coaches and sports scientists regarding the meaning of the word. Physical fitness is the natural outcome of a rich programme of physical education. It is the same total of the condition of one's body judged in terms of age, height, weight and chest expansion in terms of freedom from disease constitutional affection or bodily in firming, full physical development, vigour, vitality and radiant health should be seen in one who is physically fit. In terms of usefulness physical fitness has been defined as "total functional capacity of an individual to perform a given test". Interval method is perhaps the most versatile method for improving endurance of various types. In interval method, the exercise is done at medium (Extensive) and higher (Intensive) intensity with intervals of incomplete recovery. Continuous training, as the name implies, involves continuous activity, without rest intervals. This has varied from high intensity, continuous activity of an extended duration i.e.long, slow, distance, or 'LSD', training.

Correspondence
Dr.K.Divya
E-mail: dhivya_phy_edu@yahoo.co.in, Ph. +9182204 36393

Sodhi & Sidhu (1984) stated that in case of the middle and long distance, the use of aerobic power increases with the increasing distance of the event. The performance mainly depends on much muscular effort, unlike the sprinters. Since the force applied on the lower limbs depends upon the utilization of oxygen in the muscles throughout the period of running. Under these circumstances, the athlete run at some cruising speed without putting the pace to maximal. The natural greater length of the lower extremities will help to provide them with the greater stride. Therefore those athletes, who are endowed with proportionally longer lower extremities, have an additional advantage.

Methodology

For the purpose of the study was to find out the effect of continuous training on cardio respiratory endurance among college men long distance runners. To achieve this purpose of the study, thirty men athletes were selected from Alagappa University affiliated colleges, as subjects were selected at random based. The age of the subjects were ranged from 18 to 25 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as continuous training group (Experimental Group) and control group. The experimental group underwent continuous training for three days per week for six weeks. Control group which they did not undergo any special exercise programme

apart from their regular physical activities as per their curriculum. This study was formulated as post test group design .one group was assigned continuous training programme. The other group acted control group no training programmed. Cardio respiratory endurance - Cooper 12min run/walk (meters). The following statistical procedures were used. The "t" ratio was calculated to find out the significance of the difference between the mean of the initial and final test of the experimental group. The significance of the difference among the means of experimental group was found out by pre-test. The data were analyzed and dependent't' test was used with 0.05 levels as confidence.

Results

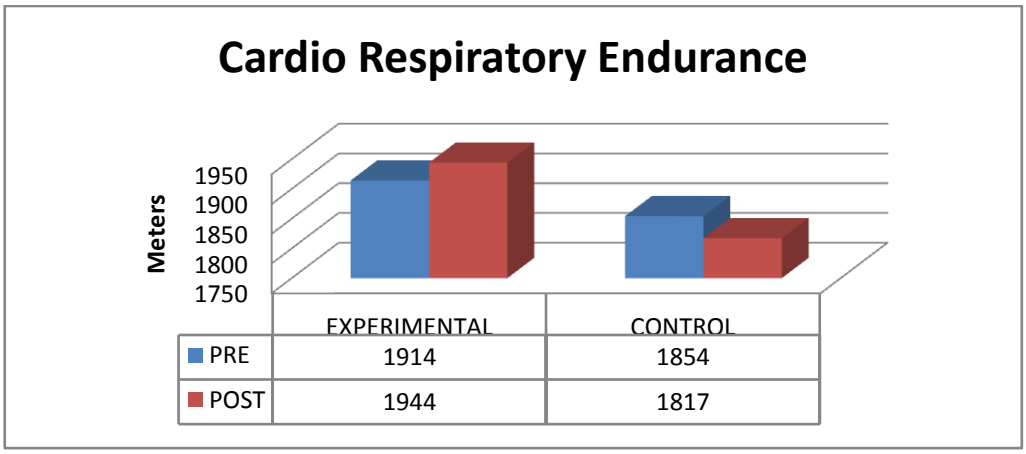
Table I. Analysis of 't'-ratio for the pre and post tests of experimental and control group on cardio respiratory endurance

Groups	Mean		Mean Difference	S.D	Standard Error	't' ratio
	Pre	Post				
Experimental	1914	1944	30	24.71	6.38	4.70*
Control	1854	1817	37	85.50	22.07	1.67

*****Significance at .05 level of confidence. (The table value required for 0.05 level of significant with df of 14 is 2.14)*

The Table-I shows that the mean values of pre-test and post-test of control group on cardio respiratory endurance were 1854 and 1817 respectively. The obtained 't' ratio was 1.67, since the obtained 't' ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental group on cardio respiratory endurance were 1914 and 1944 respectively. The obtained 't' ratio was 4.70* since the obtained 't' ratio was greater than the required table value of 2.14 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in Cardio respiratory endurance. It may be concluded from the result of the study that experimental group improved in Cardio respiratory endurance due to six weeks of continuous training.

Figure II. Mean values of continuous training group and control group on cardio respiratory endurance



Discussions on Findings

The result of the study indicates that the experimental group namely continuous training group had significantly improved the selected dependent variables namely cardio respiratory endurance, when compared to the control group. It is also found that the improvement caused by continuous training when compared to the control group.

Continuous endurance training, a brief review of the cardiovascular responses and adaptations to chronic aerobic exercise is warranted, because it is central to both programs. During aerobic exercise the performance of the heart is based on heart rate, the amount of blood pumped per beat (stroke volume), and heart contractility, or the forcefulness of each heart contraction. Combined, these variables increase blood flow and oxygen supply to meet the demands of the exercising muscles. The contraction of the skeletal muscle also increases venous blood flow return to the heart, which increases ventricle blood filling (called the preload). This boosted preload contributes to the heart's enhanced stroke volume during exercise, which is a

major determinant of aerobic performance (Joyner and Coyle, 2008).

Conclusions

1. There was a significant difference between experimental and control group on continuous training variables after the exercise period.
2. There was a significant improvement in cardio respiratory endurance. However the improvement was in favour of experimental group due to six weeks of continuous training.

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