Research Paper

Volume : 4 | Issue : 1 | January 2015 • ISSN No 2277 - 8179

Effect of Endurance Training on Selected Endurance Parameters Among Middle And Long Distance Runners

PHYSICAL EDUCATION

KEYWORDS : Endurance Training, Cardio Respiratory Endurance, Muscular Endurance and Middle Distance and Long Distance Runners.

Dr.S.MANIKANDAN Assistant Professor, Department of Physical Education and Sports Sciences, Annamalai University, Annamalai Nagar – 608002, Tamilnadu

ABSTRACT

The purpose of the study was to find out the effect of endurance training on selected endurance parameters among middle and long distance runners. To achieve this purpose thirty male middle and long distance runners were selected as subjects, their aged between 18 to 27 years, they were studying in the various department of annamalai university, Tamilnadu. The selected subjects were divided into two equal groups of fifteen subjects each, namely endurance running group and control group. The experimental group trained for three alternative days in a week for twelve weeks. Endurance training group after a warm up for 5 minutes underwent specific endurance practices with variation of slow, medium, high, alternatively and finished each session with cool down exercises. Endurance parameters such as cardio respiratory endurance and muscular endurance were selected as criterion variables and they were tested by using cooper's 12 minutes run/walk test and Bent knee sit ups respectively. ANCOVA was used to find out the significant different if any between the groups. The results of the study showed that there was a significant improvement on selected endurance parameters such as cardio respiratory endurance and muscular endurance due to twelve weeks of endurance training .

INTRODUCTION

Sport is generally recognized as activities which are based in physical athleticism or physical dexterity, with the largest major competitions such as the Olympic Games admitting only sports meeting this definition and other organizations such as the Europe using definitions precluding activities without a physical element from classification as sports.Endurance exercise training results in profound adaptations of the cardio respiratory and neuromuscular systems that enhance the delivery of oxygen from the atmosphere to the mitochondria and enable a tighter regulation of muscle metabolism. These adaptations effect an improvement in endurance performance that is manifest as a rightward shift in the 'velocity-time curve'. This shift enables athletes to exercise for longer at a given absolute exercise intensity, or to exercise at a higher exercise intensity for a given duration. There are 4 key parameters of aerobic fitness that affect the nature of the velocity-time curve that can be measured in the human athlete. From the foregoing it may be that the aim of endurance training is to raise the special conditions: techniques, tactics and physical condition as well as the spiritual attributes indispensable in effectively participating in middle and long distance runners to the highest possible level.

METHODOLOGY

The purpose of the study was to find out the effect of endurance training on selected endurance parameters such as cardio respiratory endurance and muscular endurance among middle and long distance runners, to achieve this, thirty middle and long distance runners were randomly selected from the various Departments of Annamalai University, Chidambaram, Tamilnadu, India, in the age group of 18 to 25 years were selected as subjects at random with their consent. The selected subjects were divided into two equal groups of fifteen subjects each namely endurance training group and control group. The selected criterion variables were assessed using standard tests and procedures, before and alter training regimen. Cardio respiratory endurance and muscular endurance were tested be pre (pre) and after (post) the training program for both experimental and control group by using cooper's 12 minutes run/walk test and Bent knees sit ups respectively.

The selected subjects had undergone the endurance training for twelve weeks with three days per week in alternate days. Endurance Training Group after a warm up for 5 minutes underwent endurance practices having specific endurance type of activities with variation of slow, medium, high, alternatively and finished each session with cool down exercises. The control group did not participate in any specialized training during the period of study. Analysis of covariance (ANCOVA) was used as to determine the significant difference. If any, existing between pretest and posttest data on selected variables separately.

RESULTS

The descriptive analysis of data collected on selected endurance parameters before and after twelve weeks of endurance training programme is presented in Table-1

TABLE-1-: Analysis of covariance of data on cardio respiratory and muscular endurance between pre and post test of endurance training group and control group

Variables	Test		Endurance Training Group	Control Group	Source of Variance	SS	df	Mean Square	'F' Ratio
Cardio respiratory Endurance	Pre test	Mean	2475	2458	Between	0.03745	1	0.03745	0.520
		S.D	151.20	104.5	Within	2.017	28	0.07202	
	Post test	Mean	2572	2515	Between	1.391	1	1.391	13.807
		S.D	92.64	61.84	Within	2.821	28	0.101	
	Adjusted Post test	Mean	2576	2492	Between	87631.4	1	87631.4	53.94*
					Within	43862.1	27	1624.5	
Muscular Endurance	Pre test	Mean	27.63	27.40	Between	48.133	1	48.133	3.44
		S.D	1.64	2.09	Within	391.33	28	13.976	
	Post test	Mean	31.75	27.08	Between	307.2	1	307.2	22.25
		S.D	1.25	1.25	Within	386.67	28	13.81	
	Adjusted Post test	Mean	31.75	27.11	Between	157.21	1	157.21	95.79
					Within	44.31	27	1.64	

The result of the study indicates that the endurance training group had significantly improved the selected dependent variables namely cardio respiratory endurance and muscular endurance however, control group did not show any improvement on the selected variables as it was not involved in any of the specific training means. It is inferred from the results of the present study that all the dependent variables were significantly improved due to the influence endurance training programme

DISCUSSION:

In the present study, a significant increase was predicted on endurance in the endurance training group. Such an improvement is consistent with previous exercise training literature **(Pollock et al., 1998)** and may appear unexceptional. However, it is noteworthy that this improvement in cardio respiratory fitness was associated with relatively low volumes of exercise.

It therefore appears that hart bouts of endurance training performed at the high end of the intensity zone recommended for cardiorespiratory conditioning can elicit similar improvements in V02max as endurance training performed at low-moderate intensities for longer durations. The duration of the training bout may therefore be relatively insignificant to the overall training effect of a programme designed to improve cardiorespiratory fitness relative to the frequency and. especially, the intensity of training **(Pollock et al., 1998).**

CONCLUSION:

Based on the result, the endurance training was significantly improved the endurance parameters such as cardio respiratory endurance and muscular endurance among middle and long distance runners.

REFERENCE

[1] C A G Boreham et al, Training effects of short bouts of endurance training on cardio respiratory fitness, blood lipids, and homocysteine in sedentary young women, Br J Sports Med 2005;39:590-593 | [2] Colin A. G. Boreham et al, Training Effects of Accumulated Daily Endurance Training Exercise in Previously Sedentary Young Women, preventive Medicine, Volume 30, Issue 4, April 2000, Pages 277-281 | [3] Ditza Gross et al, The effect of training on strength and endurance of the diaphragm in quadriplegia, The American Journal of Medicine, Volume 68, Issue 1 , Pages 27-35, January 1980 | | | | | [4] Jones AM and Carter H, The Effect of Endurance Training on Parameters of Aerobic-Fitness, Sports Medicine, Volume 29, Number 6. 1 June 2000 . pp 373-386(14) | [5] Ilmarinen, J et al (1979), Training effects of stairclimbing during office hours on female employees. Ergonomics 22. |