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Dr. J Karthikeyan

Assistant Professor,

Department of Physical

Education, Health Education

and Sports, The M.D.T Hindu

College, Tirunelveli, Tamil Nadu,

India

Effect of various intensities of aerobic training on resting pulse rate

Dr. J Karthikeyan

Abstract

The purpose of the study was to find out the effects of different intensities of aerobic training on resting pulse rate. To achieve this purpose of the study, forty-five men students studying in the Department of Physical Education Health Education and Sports, The M.D.T Hindu College, Tirunelveli, Tamilnadu, India were selected as subjects at random. The selected subjects were divided into three equal groups of fifteen subjects each, such as low intensity aerobic training group, high intensity aerobic training group and control group. The group I underwent low intensity aerobic training programme and group II underwent high intensity aerobic training programme for three days per week for twelve weeks. Group III acted as control who did not participate any special training programmes apart from their regular physical education activities as per their curriculum. Among the physiological parameters, the following variable namely resting pulse rate was selected as criterion variable. All the subjects of three groups were tested on selected dependent variables 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 as an appropriate. The results of the study revealed that there was a significant difference among low intensity aerobic training group, high intensity aerobic training group and control group on resting pulse rate. And also it was found that there was a significant reduction on resting pulse rate due to high intensity aerobic training.

Keywords: Aerobic training, resting pulse rate, high intensity, low intensity

Introduction

Education is the manifestation of perfection in man. physical education is, no doubt an integral part of general education. It is an education connected with over all development of an individual, but mainly views on the development of physical fitness and participating in sports and games. Sport has very prominent role in modern society. It is important to an individual, a group, a nation indeed the world. To a large extent general education was physical education in early societies, for the environment made great demands on the physical conditions of man. Sports training is a pedagogical process, based on scientific principles, aiming at preparing sportsman for higher performances in sports competition.

Methodology

The purpose of the study was to find out the effects of different intensities of aerobic training on resting pulse rate. To achieve this purpose of the study, forty-five men students studying in the Department of Physical Education Health Education and Sports, The M.D.T Hindu College, Tirunelveli, Tamilnadu, India were selected as subjects at random. The selected subjects were divided into three equal groups of fifteen subjects each, such as low intensity aerobic training group, high intensity aerobic training group and control group. The group I underwent low intensity aerobic training programme and group II underwent high intensity aerobic training programme for three days per week for twelve weeks. Group III acted as control who did not participate any special training programmes apart from their regular physical education activities as per their curriculum. Among the physiological parameters, the following variables namely resting pulse rate was selected as criterion variable. All the subjects of three groups were tested on selected dependent variables at prior to and

Correspondence

Dr. J Karthikeyan

Assistant Professor,

Department of Physical

Education, Health Education

and Sports, The M.D.T Hindu

College, Tirunelveli, Tamil Nadu,

India

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 as an appropriate. The Scheffe’s test was applied as post hoc test to find out the paired mean difference, if any,

Training Programme

For low intensity aerobic training group and high intensity aerobic training group underwent their respective training programme for twelve weeks for three days per week. Training was given in the morning session. The training session includes warming up and limbering down. Every day

the workout lasted for 45 to 60 minutes approximately. The subjects underwent their respective training programmes as per the schedules under the strict supervision of the investigator. During experimental period control group did not participate in any of the special training.

Analysis of the Data

The influence of low intensity aerobic training and high intensity aerobic training on resting pulse rate was analyzed and presented below.

The analysis of covariance on resting pulse rate of pre and post tests for low intensity aerobic training group and high intensity aerobic training group and control group was analysed and presented in Table I.

Table 1: Ancova on Resting Pulse Rate of Pre and Post Test For Experimental And Control Groups

test	Low Intensity Aerobic Training Group	High Intensity Aerobic Training Group	Control Group	Source of Variance	Sum of Squares	DF	Mean Squares	Obtained ‘F’ Ratio
Pre Test								
Mean	60.71	60.68	60.70	Between	0.006	2	0.003	0.058
S.D.	1.10	1.12	1.09	Within	0.66	42	0.0157	
Post Test								
Mean	59.82	58.78	60.69	Between	0.989	2	0.445	11.125*
S.D.	1.08	0.99	1.08	Within	1.69	42	0.04	
Adjusted Post Test								
Mean	59.80	58.76	60.70	Between	0.762	2	0.381	9.645*
				Within	1.62	41	0.0395	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 42 and 2 and 41 are 3.222 and 3.226 respectively).

The table I shows that The adjusted post-test means of low intensity aerobic training group, high intensity aerobic training group and control group are 59.80, 58.76 and 60.70 respectively. the obtained “F” ratio of 9.645 for adjusted post-test means is more than the table value of 3.226 for df 2 and 41 required for significance at .05 level of confidence on resting pulse rate.

The results of the study indicated that there was a significant difference between the adjusted post-test means of low intensity aerobic training group, high intensity aerobic training group and control group on resting pulse rate.

Since, three groups were compared and adjusted post test was found to be significant, the Scheffe’s test to find out the paired mean differences and it was presented in Table II.

Table 2: The Scheffe’s Test for the Differences between Paired Means on Resting Pulse Rate

Low Intensity Aerobic Training group	High Intensity Aerobic Training group	Control Group	Mean Differences	Confidence Interval Value
59.80	58.76	-	1.04*	0.98
59.80	-	60.70	0.90	0.98
-	58.76	60.70	1.94*	0.98

* Significant at .05 level of confidence.

The results of this study showed that there was a significant difference between low intensity aerobic training group and high intensity aerobic training group, high intensity aerobic training group and control group on resting pulse rate. And there was no significant difference between low intensity aerobic training group and control group on resting pulse rate.

Results

1. There was a significant difference among low intensity aerobic training group, high intensity aerobic training group and control group on resting pulse rate.
2. There was a significant reduction on resting pulse rate due to high intensity aerobic training.

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