



ISSN: 2456-0057

IJPNPE 2018; 3(2): 234-236

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www.journalofsports.com

Received: 28-05-2018

Accepted: 29-06-2018

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Comparison of intensive and extensive interval training on speed of physical education students of Annamalai University

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Abstract

The purpose of the study was to analyze the effect of intensive and extensive interval training on Speed. To achieve the purpose of the study, forty-five male students studying bachelor's degree in physical education, from the Department of Physical Education and Sports Sciences, Annamalai University, Chidambaram, Tamilnadu, India were selected as subjects at random. The age, height and weight of the subjects ranged from 19 to 21 years, 160 to 175 cms and 50 to 60 kg respectively. The selected subjects were medically examined by a qualified physician and certified that they were medically and physically fit enough to undergo the intensive and extensive interval running programme.

The selected subjects were randomly assigned into three groups of 15 each namely experimental group I, experimental group II and a control group. The experimental group I underwent Intensive Interval Training and experimental group II underwent Extensive Interval Training and group III acted as control, who did not participate in any special training apart from their regular physical education programme of the curriculum. The experimental groups underwent the respective training programme for three days a week for twelve weeks. It is inferred that twelve weeks of intensive interval training and extensive interval training groups have significantly improved the speed performance as compared to the control group. The results also reveal that the increase in speed performance is significantly more for intensive interval training group than the extensive interval training group.

Keywords: Intensive and extensive interval training and speed

Introduction

Intensive interval training

The interval training constitutes the intermittent variation of exertion and active recovery periods within a training unit. Characteristics of the extensive interval method are short exertion periods with high load intensity (Competition Specific Endurance or Intensive Strength Endurance) with the duration of the recovery periods being short enough as to not result in full recovery.

Objectives of the Study

The purpose of the study was to analyze the effect of intensive and extensive interval training on Speed.

Methodology

The interval running programmes were scheduled for one session a day. The training schedule was administered for both the experimental groups. During the training period the experimental groups underwent their respective training programme three days per week (alternate days) for twelve weeks in addition to their regular programme of the course of study as per their curriculum. Group I underwent high intensity with low repetition interval running, Group II underwent moderate intensity with high repetition interval running. Prior to every training sessions both the groups had ten to fifteen minutes of warm-up exercise involving jogging, calisthenics and stretching exercises.

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Collection of the Data

The selected criterion variables for the study were assessed by the following standardized test item. Speed was assessed by 50mts Run, Pretest data were collected prior to the training programme and post test data were collected immediately after the twelve weeks of interval running programme for both the experimental groups and a control group.

**Administration Of test
Speed (50 Meters Dash)**

Purpose

The purpose of this test was to measure the speed, stride length, stride frequency and acceleration of the subjects.

Facilities and Equipment

Test course on the track, standard measuring tape, pistol, stopwatch and video camera were used.

Procedures

After a short warm-up period the subject took a position behind the starting line. If the starter used the command ready and clap, the subject would run across the finish line, drawn at 50 meters from the starting line, as fast as possible.

Scoring

The score was the elapsed time to the nearest tenth second between the starting signal and the subject crossing the finish line.

Experimental Design and Statistical Procedure

The selected subjects were randomly assigned into three

groups of 15 each namely experimental group I, experimental group II and a control group. The experimental group I underwent Intensive Interval Training and experimental group II underwent Extensive Interval Training and group III acted as control, who did not participate in any special training apart from their regular physical education programme of the curriculum.

The data on selected speed were collected by administering standard test and procedure. Pretest data were collected two days before the training programme and post-test data were collected two days after the training programme. The data collected from the three groups were statistically analyzed by analysis of covariance (ANCOVA). To make adjustment for difference in initial means, the adjusted post means were calculated. Post hoc test was applied to determine which of the paired mean difference was significant, since three groups are involved. In all cases to test the significance 0.05 level of confidence was utilized.

Analysis of the data

The pre and post test data collected from the experimental and control groups on selected speed parameter was statistically analyzed by analysis of covariance (ANCOVA) and the results are presented below.

Speed

The pre and post test data on speed performance of the intensive interval training, extensive interval training and control groups have been analysed statistically and the results are presented in table-I.

Table 1: Analysis of Covariance on Speed of Intensive Interval Training Extensive Interval Training and Control Groups

	Group I	Group II	Group III	Source of variance	Sum of Squares	df	Mean squares	'F' ratio
Pretest Mean	7.94	7.95	7.83	Between	0.1213	2	0.0607	0.86
SD	0.3888	0.1922	0.1543	Within	2.9667	42	0.0706	
Posttest Mean	7.35	7.53	7.85	Between	1.9151	2	0.9576	16.7*
SD	0.2722	0.1839	0.2532	Within	2.408	42	0.0573	
Adjusted Posttest Mean	7.33	7.51	7.88	Between	2.29	2	1.15	29.33*
				Within	1.60	41	0.04	

* Significant at .05 level of confidence. (The table values required for significance at .05 level of confidence for degree of freedom 2 and 41 is 3.23 and degree of freedom 2 and 42 is 3.22.)

The pre test means on speed of intensive interval training, extensive interval training groups and control group are 7.94, 7.95 and 7.83 respectively. The obtained 'F' ratio value on the scores of pretest means 0.86 was lesser than the required F ratio value 3.22 for significance at 0.05 level of confidence with degrees of freedom 2 and 42. The result of the study reveals that there was no significant differences existed between the experimental and control groups during the pretest period.

The posttest means on speed of intensive interval training, extensive interval training groups and control group are 7.35, 7.53 and 7.85 respectively. The obtained posttest 'F' ratio value of 16.70 was greater than the required table value of 3.22 for significance at 0.05 level of confidence with degrees

of freedom 2 and 42. It reveals that significant differences existed between the groups after twelve weeks of training.

The adjusted posttest means on speed of intensive interval training, extensive interval training groups and control group are 7.33, 7.51 and 7.88 respectively. The obtained 'F' ratio value 29.33 was greater than the required table value of 3.23 for significance at 0.05 level of confidence with degrees of freedom 2 and 41. The result of the study shows that significant differences existed between the adjusted posttest mean of the resisted sprint training, unresisted sprint training and control groups in improving the speed.

Since the adjusted posttest mean 'F' value was found to be significant, the results were subjected to post hoc analysis using Scheffe's test. The results were presented in table- II.

Table 2: Scheffe's Test for the Adjusted Post Test Paired Means Differences on Speed

adjusted posttest Means				Confidence Interval
Intensive Interval Training Group	Extensive Interval Training Group	Control Group	Mean Difference	
7.33	7.51		0.18*	0.17
7.33		7.88	0.55	0.17
	7.51	7.88	0.37*	0.17

*Significant at .05 level of confidence

Table – II indicates that the adjusted posttest mean difference on speed performance between intensive interval training and extensive interval training groups, intensive interval training and control groups, extensive interval training and control groups are 0.18, 0.55 and 0.37 respectively, which are higher than the confidence interval value of 0.17 at 0.05 level of significance.

Result

It is inferred that twelve weeks of intensive interval training and extensive interval training groups have significantly improved the speed performance as compared to the control group. The results also reveal that the increase in speed performance is significantly more for intensive interval training group than the extensive interval training group.

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