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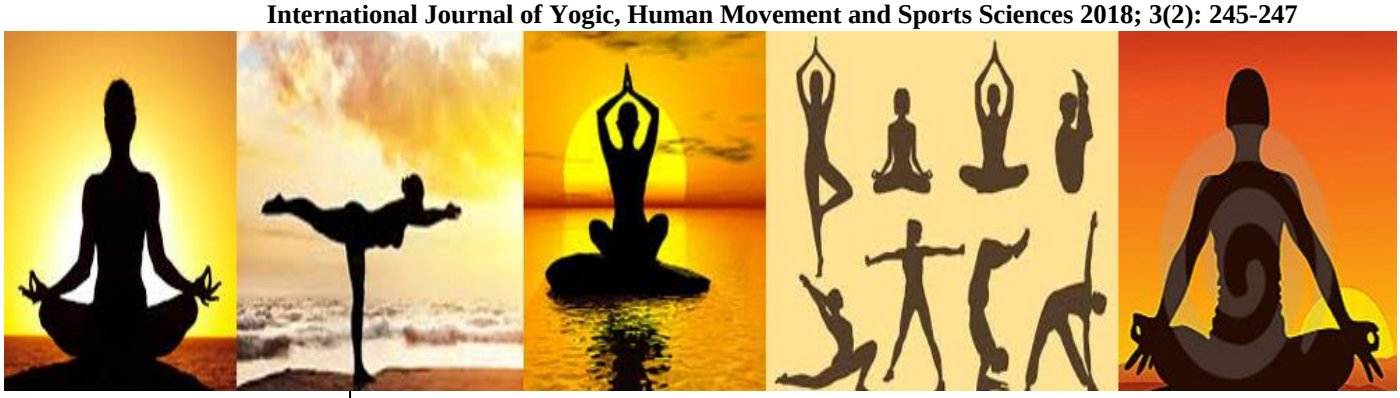

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Efficacy of intensive and extensive interval training on explosive power of physical education students of Annamalai University

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Abstract
The purpose of the study was to analyze the effect of intensive and extensive interval training on Explosive power. 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, Tamil Nadu, 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 explosive power as compared to the control group. The results also reveal that the increase in explosive power is significantly more for extensive interval training group than the intensive interval training group.

Keywords: Intensive and extensive interval training and explosive power

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 Explosive power.

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.

Vertical Jump Test

Purpose

To measure explosive power in vertical direction.

Equipment used

A plywood board as suggested by Sargent was used to obtain the data.

Procedure

To obtain data for vertical jump, Sargent jump was administered to the subjects. Before the execution of the test, all the subjects were instructed by the tester regarding the test performance. They were taught how to perform the test perfectly by the investigator. Before the execution of the vertical jump test, subjects were directed to practice for a few minutes.

A plywood board (blackened 1 cm. Thick 1.50 mts. Long and 50 cm. Wide) with lines marked horizontally 1 cm apart was used. This board was placed vertically, the zero point of the scale being at the reaching height of the shortest subject tested. The subject stood with his side toward the wall and reached as high as possible with heels on the floor and made a mark on the wall with chalked fingers. The subject then swung his arms downward and backward assuming a crouched position with the knees bent at about right angle. The subject then jumped as high as possible, swinging the arms upward, as the highest point of the jump was reached, and another mark was made above the initial one. Three trails were allowed with one-minute rest in between.

Scoring

The score was recorded to the nearest centimeters, between the reach and jump mark. The best of the three trials was recorded as the test score.

Collection of the Data

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 explosive power was collected by administrating 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 explosive power parameters were statistically analyzed by analysis of covariance (ANCOVA) and the results are presented below.

Explosive Power

The pre and post test data on explosive power 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 explosive power 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 SD	45.87	46.16	45.94	Between	19.98	2	9.99	0.52
	4.32	4.16	4.27	Within	804.17	42	19.15	
Posttest Mean SD	52.48	59.36	46.58	Between	1253.16	2	626.58	29.35*
	4.51	4.63	4.49	Within	896.79	42	21.35	
Adjusted Posttest Mean	49.85	55.94	46.28	Between	795.69	2	397.85	127.9*
				Within	127.36	41	3.11	

* 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 pretest means on explosive power of intensive interval training, extensive interval training groups and control group are 45.87, 46.16 and 45.94 respectively. The obtained 'F' ratio value on the scores of pretest means 0.52 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 pre-test period.

The posttest means on explosive power of intensive interval training, extensive interval training groups and control group are 52.48, 59.36 and 46.58 respectively. The obtained posttest 'F' ratio value of 29.35 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 explosive power of intensive interval training, extensive interval training groups and control group are 49.85, 55.94 and 46.28 respectively. The obtained 'F' ratio value 127.90 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 intensive interval training, extensive interval training and control groups in improving the explosive power.

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 posttest paired means differences on explosive power

Adjusted posttest MEANS				Confidence Interval
Intensive Interval Training Group	Extensive Interval Training Group	Control Group	Mean Difference	
49.85	55.94		6.09*	1.63
49.85		46.28	3.57*	1.63
	55.94	46.28	9.66*	1.63

*Significant at .05 level of confidence

Table–II indicates that the adjusted posttest mean difference on explosive power between intensive interval training and extensive interval training groups, intensive interval training and control groups, extensive interval training and control groups are 6.09, 3.57 and 9.66 respectively, which are higher than the confidence interval value of 1.63 at 0.05 level of confidence.

Result

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

Review

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