

ISOLATED AND COMBINED EFFICACY OF AEROBIC INTERVAL TRAINING AND HIGH INTENSITY RESISTANCE TRAINING ON AEROBIC POWER AMONG COLLEGE MEN

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ABSTRACT

The purpose of the study was to find out the isolated and combined efficacy of aerobic interval training and high intensity resistance training on aerobic power among college men. To achieve the purpose of the present study, eighty college men were selected from Salem district, Tamilnadu, India were selected as subjects at random and their ages ranged from 17 to 20 years. The subjects were divided into four equal groups of twenty subjects each. Group I acted as Experimental Group I (Aerobic Interval Training), Group II acted as Experimental Group II (High Intensity Resistance Training), Group III acted as Experimental Group III (Combined Training) and Group IV acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. Pre test was conducted for all the subjects on aerobic power. This initial test scores formed as pre test scores of the subjects. The duration of experimental period was 12 weeks. After the experimental treatment, all the eighty subjects were tested on their aerobic power. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. In comparing the combined training group and other groups on aerobic power, from the obtained f-ratios, it was observed that combined training group showed better performance on aerobic power than the other groups.

Key words: Aerobic Interval Training, High Intensity Resistance Training, Aerobic power, College Men Players.

INTRODUCTION

A series of repeated exercise sessions separated by shorter rest or work intervals is known as interval training. Interval training workouts are the closest thing to having your own personal coach, according to Carl Lewis. The best athletes in the world have been using it for decades. Interval training is a technique used by athletes such as runners, swimmers, rowers, cross-country skiers, cyclists, and triathletes to extend their time spent exercising at maximal effort. Even the legendary athlete Paavo Nurmi, who won four gold medals at the 1924 Olympics and once broke three world records in ninety minutes, invented the use of intensities higher than those used in competition for interval training. Thus, the literature could be used to develop an interval training program that would improve athletes' levels of performance in sports and fitness.

Resistance training, which primarily consists of weight training, is defined as "training intended to increase the body's strength, power, and muscular endurance through resistance exercise." Put another way, the goal of a resistance training session is to condition our muscles to lift a given weight for a longer amount of time or heavier weights in an effort to increase strength. Our fitness program must include resistance training because, unless we take action to slow down the ageing process, muscle mass will naturally decline with age. In addition, with the rising use of computers, cars, and other labor-saving devices, modern lives are becoming more and more sedentary.

METHODOLOGY

The purpose of the study was to find out the isolated and combined efficacy of aerobic interval training and high intensity resistance training on aerobic power among college men. To achieve the purpose of the present study, eighty college men were selected from Salem district, Tamilnadu, India were selected as subjects at random and their ages ranged from 17 to 20 years. The subjects were divided into four equal groups of twenty subjects each. Group I acted as Experimental Group I (Aerobic Interval Training), Group II acted as Experimental Group II (High Intensity Resistance Training), Group III acted as Experimental Group III (Combined Training) and Group IV

acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. Pre test was conducted for all the subjects on aerobic power. This initial test scores formed as pre test scores of the subjects. The duration of experimental period was 12 weeks. After the experimental treatment, all the eighty subjects were tested on their aerobic power. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

RESULTS AND DISCUSSION

The detailed procedure of analysis of data and interpretation were given below,

TABLE – I
COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF AEROBIC INTERVAL TRAINING, HIGH INTENSITY RESISTANCE TRAINING, COMBINED TRAINING AND CONTROL GROUPS ON AEROBIC POWER (AITG, HIRTG, CAITHIRTG & CG)

	AIT G	HIRT G	CAITHIRT G	CG	Source of Varianc e	Sum of Squares	df	Means Squares	F-ratio
Pre- Test Means	29.50	31.15	30.35	31.20	BG	38.500	3	12.833	1.39
					WG	697.300	76	9.175	
Post- Test Means	40.80	40.20	44.20	31.55	BG	1741.638	3	580.546	55.81*
					WG	790.550	76	10.402	
Adjuste d Post- Test Means	40.87	40.15	44.21	31.50	BG	1733.878	3	577.959	55.07*
					WG	786.993	75	10.493	

RESULTS OF AEROBIC POWER

According to Table I, the experimental groups' respective pre-test means on aerobic power yielded a "F"-ratio of 29.50 for Experimental Group I, 31.15 for Experimental Group II, 30.35 for Experimental Group III, and 31.20 for the control group. The table's "F"-ratio of 2.72 was greater than the obtained "F"-ratio of 1.39. Therefore, for degrees of freedom 3 and 76, the pre-test mean "F"-ratio was not significant at the 0.05 level of confidence. For experimental groups I, II, and III, the post-test means were 40.80, 40.20, 44.20, and 31.55, respectively, compared to the control group. The obtained "F"-ratio of 55.81 was greater than the 2.72 "F"-ratio in the table. For the degrees of freedom 3 and 76, the post-test mean "F"-ratio was therefore significant at the 0.05 level of confidence. For experimental groups I, II, and III, the adjusted post-test means were 40.87, 40.15, 44.21, and 31.50, respectively, compared to the control group. The obtained 'F'-ratio of 55.07 was greater than the 'F'-ratio of 2.72 in the table. For the degrees of freedom 3 and 75, the adjusted post-test mean "F"-ratio was therefore significant at the 0.05 level of confidence. In developing the college men's aerobic power, it was determined that there was a significant mean difference between the high intensity resistance training group, the combined training group, the aerobic interval training group, and the control group.

FIGURE – I

ADJUSTED POST-TEST DIFFERENCES OF THE AEROBIC INTERVAL TRAINING, HIGH INTENSITY RESISTANCE TRAINING, COMBINED TRAINING AND CONTROL GROUPS ON AEROBIC POWER (AITG, HIRTG, CAITHIRTG & CG)

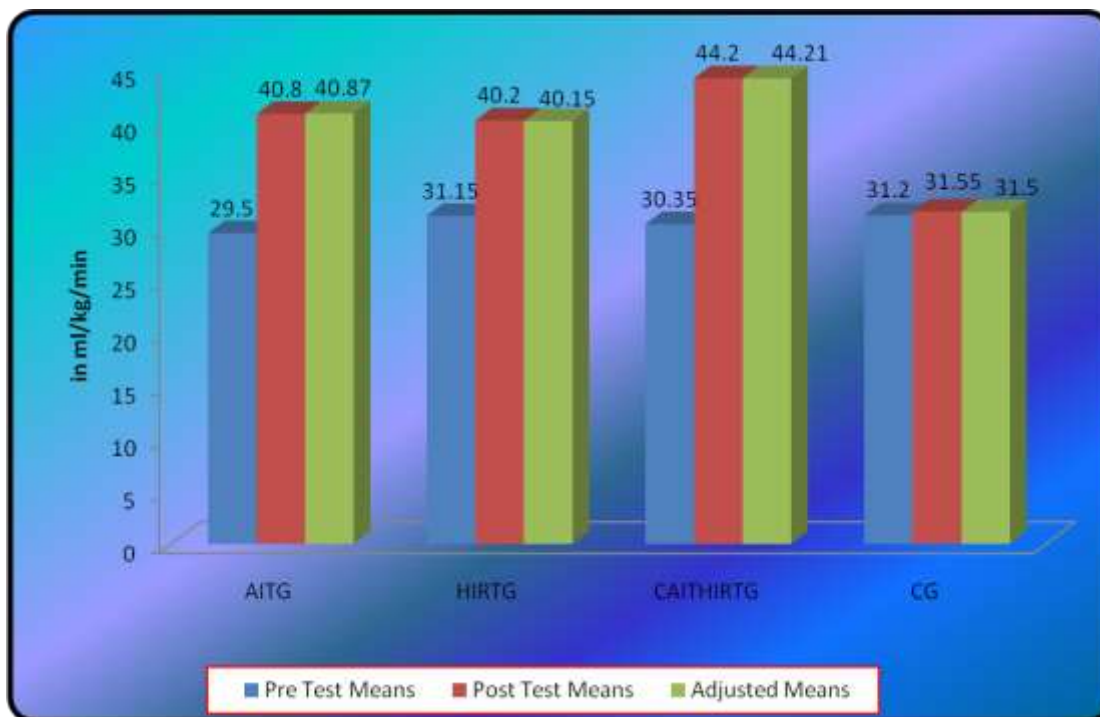


TABLE – II

THE SCHEFFE’S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST-TEST MEANS ON AEROBIC POWER

Adjusted Post-Test Means				Mean Difference	Confidence Interval
AITG	HIRTG	CAITHIRTG	CG		
40.87	40.15	---	---	0.72	2.92
40.87	---	44.21	---	3.34*	
40.87	---	---	31.50	9.37*	
---	40.15	44.21	---	4.06*	
---	40.15	---	31.50	8.65*	
---	---	44.21	31.50	12.71*	

* Significant at 0.05 level of confidence

Table II's multiple comparisons demonstrated that there were significant differences between the adjusted means of high intensity resistance training and combined training (4.06), high intensity resistance training and control group (8.65), combined training and control group (12.71), and aerobic interval training and combined training (3.34). At the 0.05 level of confidence, there was no significant difference (0.72) between the high intensity resistance training group and the aerobic interval training group, with a confidence interval value of 2.92. In order to facilitate comprehension of the study's findings, a bar diagram was used to show the pre-, post-, and adjusted means for aerobic power.

CONCLUSIONS

1. The significant mean difference does not exist among all the three groups in the pre test on aerobic power.
2. In testing post test mean difference among the four groups statistically significant on variables of aerobic power. In testing the post adjusted mean among the four groups also predicts the above result.
3. In comparing the combined training group and other groups on aerobic power, from the obtained f-ratios, it was observed that combined training group showed better performance on aerobic power than the other groups.

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