



Effect of Interval Training on Selected Physical and Physiological Variables among University Men Players

C.Maniraj¹ & Dr.S. Arul²

¹Research Scholar, Department of Physical Education, Annamalai University, Tamil Nadu India.

²Associate Professor, Department of Physical Education, Annamalai University, Tamil Nadu India.

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Abstract

The purpose of the study was to find out the effect of Interval training on selected physical and physiological variables namely muscular endurance and breath holding time among University men players. To achieve this purpose of the study 30 men players selected from Department of Physical Education, Annamalai University, Annamalai nagar, Cuddalore district, Tamilnadu, India were selected as a subjects. The age of subjects were ranged from 18 to 23 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as Interval training group (Group-I) and control group (Group-II). The interval training group (Group-I) underwent training programme for 5 days per week for 12 weeks. Group II acted as control in which they did not undergo any special training programme apart from regular activities. All the subjects of two groups were tested on selected physical and physiological variables such as Muscular endurance and Breath holding time by using Bend knee situps and Holding the breath for time at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any between the groups. The level of significant to test the "F" ratio obtained by the analysis of covariance was tested at .05 level of confidence, which was considered as an appropriate. The results of the study revealed that there was a significant difference between Interval training group and control group on selected physical and physiological variables such as Muscular endurance and Holding the breath for time. The significant changes on selected criterion variables were also noticed due to Interval training.

Keywords: Interval training, Muscular endurance, Breath holding time, ANCOVA.

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Introduction

Interval training is a type of physical training that involves a series of low to high intensity workouts interspersed with periods of low intensity work (Heyward, 2006). The high intensity periods are typically at or close to anaerobic exercise, while the recovery periods may involve either complete rest or activity of lower intensity. Interval training can refer to organization of any cardiovascular workouts and is prominent in many sports training. An interval training is probably defined as a period of time or time or a specified distance, but for endurance training it means repeated bouts of high intensity exercise with intermittent rest periods. Imagine running through the woods, accelerating up slopes and around bends and decelerating only when you feel the need to, basing your 1- to 2-hour training on terrain and self-judgment alone. This type of running revolutionized athletic interval training in the 1930s and today is known as Fartlek

Running or "speed play." It was developed in Sweden by Gosta Holmer. Later, two Germans, Woldemar Gerschler and cardiologist Herbert Reindel, decided Fartlek running did not offer enough precision when developing a training regimen. In particular, it did not give the opportunity to measure progression. Consequently, they developed the first interval training program based on heart rate (HR) responses. Interval training can be an effective means for enhancing an athlete's lactate threshold has been shown to be of a significant factor determining performance for long distance running events. This method of training may be more effective in inducing fat loss than simply training at a moderate intensity level for the same duration.

Interval training is to prevent chronic disease, the American College of Sports Medicine (ACSM) recommends accumulating 150 minutes of moderate-intensity exercise or 75 minutes of vigorous-intensity exercise a week. Less than half of Americans meet the current activity guidelines. Lack of time is the leading perceived barrier to exercise. Accordingly, exercise programs have leaned toward workouts that are time efficient. Interval training has been suggested as an answer for time-crunched Americans trying to achieve

Correspondence

Dr.S.Arul

Associate Professor, Annamalai University

cardiovascular health.

Methodology

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control in which they did not undergo any special training programme apart from regular activities. All the subjects of two groups were tested on selected physical and physiological variables such as Muscular endurance and Breath holding time by using Bend knee situps and Holding the breath for time at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any between the groups. The level of significant to test the “F” ratio obtained by the analysis of covariance was tested at .05 level of confidence, which was considered as an appropriate. The mean, standard deviation and “F” ratio values on each criterion variables were analysed separately and presented below,

Results

Muscular Endurance

Table 1. The mean, standard deviation and “f” ratio values on muscular endurance of interval training group and control group

Test	Interval training Group	Control Group	Source of variance	Sum of squares	Df	Mean square	F ratio
PRE TEST							
MEAN	48.13	47.60	BETWEEN	2.13	1	2.13	0.15
SD	3.95	3.55	WITHIN	411.33	28	14.69	
POST TEST							
MEAN	53.07	47.87	BETWEEN	202.80	1	202.80	10.04*
SD	3.44	3.40	WITHIN	565.47	28	20.20	
ADJUSTED POST TEST							
MEAN	52.82	48.11	BETWEEN	165.51	1	165.51	294.46*
			WITHIN	15.18	27	0.56	

*Significant at .05 level of confidence

(The table values required for significance at .05 level of confidence with df 1 and 28 & 1 and 27 are 4.20 and 4.21 respectively)

The table I shows that the adjusted post test mean values on Muscular Endurance for Interval training group and control group 52.82 were and 48.11 respectively. The obtained “F” ratio value 294.46 on Muscular Endurance which was greater than the required table value 4.21 for significance with df 1 and 27. The results of the study showed that there was a significant

difference between Interval training group and control group on Muscular Endurance.

Breath Holding Time

The mean, standard deviation and “F” ratio values on Breath holding time was analysed separately and presented below.

Table II. The mean, standard deviation and 'f' ratio values on breath holding time of interval training group and control group

Test	Interval trainingGroup	Control Group	Source of variance	Sum of squares	Df	Mean square	F ratio
PRE TEST							
MEAN	27.60	26.87	BETWEEN	4.03	1	4.03	0.87
SD	2.55	2.29	WITHIN	129.33	28	4.62	
POST TEST							
MEAN	32.07	27.20	BETWEEN	177.63	1	177.63	17.58*
SD	1.45	1.33	WITHIN	282.97	28	10.11	
ADJUSTED POST TEST							
MEAN	31.82	27.45	BETWEEN	138.82	1	138.82	s81.96*
			WITHIN	45.73	27	1.69	

*Significant at .05 level of confidence

(The table values required for significance at .05 level of confidence with df 1 and 28 & 1 and 27 are 4.20 and 4.21 respectively)

The table II shows that the adjusted post test mean values on Breath holding time for Interval training group and control group 31.82 were and 27.45 respectively. The obtained 'F' ratio value 81.96 on Breath holding time which was greater than the required table value 4.21 for significance with df1 and 27. The results of the study showed that there was a significant difference between Interval training group and control group on Breath holding time.

Conclusions

Based on the results of the study, the following conclusions were drawn:

1. There was a significant difference between Interval training group and control group on Muscular endurance.
2. There was a significant difference between Interval training group and control group on Breath holding time.
3. The findings of this study proved that Interval training significantly changed the Muscular endurance and Breath holding time.

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