

EFFECT OF INTERVAL TRAINING ON SELECTED PHYSIOLOGICAL AND BIOCHEMICAL VARIABLES OF INTER COLLEGIATE PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of Interval training on selected physiological and biochemical variables of inter collegiate players. To achieve this purpose, 30 inter collegiate players from different disciplines studying in various departments of A.V.C.College of Arts and Sciences were randomly selected as subjects. The age of the subjects were ranged from 18 to 25 years. The subjects were further classified at random into two equal groups of 15 subjects each. Group – I (experimental group) underwent interval training for three days per week for twelve weeks and group - II acted as control. The selected criterion variables namely breath holding time, resting pulse rate and total cholesterol were assessed before and after the training period. The collected data were statistically analyzed by using Analysis of Covariance (ANCOVA). From the results of the study it was found that there was a significant difference on breath holding time, resting pulse rate and total cholesterol among the interval training group when compared with the control group.

Key words: Interval training, Physiological and biochemical variables, breath holding time, total cholesterol and resting pulse rate.

INTRODUCTION

Sport has ever reflected developments in society. Sport, indeed has been a mirror of society. Sport has a very prominent role in modern society. It is important to an individual, a group, a nation-indeed the whole world. Sport is an institutionalized competitive activity that involves vigorous physical exertion or the use of relatively complex physical skills by individuals whose participation is motivated by a combination of the intrinsic satisfaction associated with the activity itself and external reward earned through participation.

Fitness is defined as having the necessary qualities; or a readiness or preparedness. These seem to imply that fitness is a preparation for something or that fitness has the necessary qualities for something. Physical fitness is to the human body what fine-tuning is to an engine. It enables us to perform up to our more specifically, it is. "The ability to perform daily tasks vigorously and alertly, with energy left over for

enjoying leisure-time activities and meeting emergency demands. It is the ability to endure, to bear up, to withstand stress to carry on in circumstances where an unfit person could not continue. And is a major basis for good health and well-being".

The word training means different things in different fields. In sports the word training is generally understood to be synonyms of doing exercise (Brace). Physical training refers to the processes used in order to develop the components of physical fitness as for example, to improve aerobic endurance, to stretch and relax muscles, to increase arm and shoulder strength to related exercise and programmes to specific requirements or individual sports (Rex, 1985). Training denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years. Means and measure from several sports scheme disciplines significantly support the training of an advanced sports person.

Sports training are a basic preparation of the sportsmen for better performance through physical exercise. It is based on scientific principles of aiming at education and performance, enhancement. Sports activities consists of motor movement and action and their success depends to a great extent on how correctly they are performed. Techniques of training and improvement of tactical efficiencies plays a vital role in training process. Interval training a is programme of repeated running with set of interval after each run. The period between runs must belong enough to allow the athlete some time recover from the previous run but long enough to afford him complete recovery (Tom Backer). Interval training is a exercise followed by a property of prescribed relief interval (Edward.L).

METHODOLOGY

The purpose of the study was to find out the effect of Interval training on selected physiological and biochemical variables of inter collegiate players. To achieve this purpose, 30 inter collegiate players from different disciplines studying in various departments of A.V.C.College of Arts and Sciences were randomly selected as subjects. The age of the subjects were ranged from 18 to 25 years. The subjects were further classified at random into two equal groups of 15

subjects each. Group – I (experimental group) underwent interval training for three days per week for twelve weeks and group - II acted as control. The selected criterion variables namely breath holding time, resting pulse rate and total cholesterol were assessed before and after the training period.

Statistical Technique

The collected data were statistically analyzed by using Analysis of Covariance (ANCOVA). All the

data were analyzed using SPSS statistical package. The level of confidence was fixed at .05 level of significance.

RESULT

The Analysis of covariance on breath holding time, resting pulse rate and total cholesterol of the pre test and post test scores of experimental group and control group have been analyzed and presented in the below table.

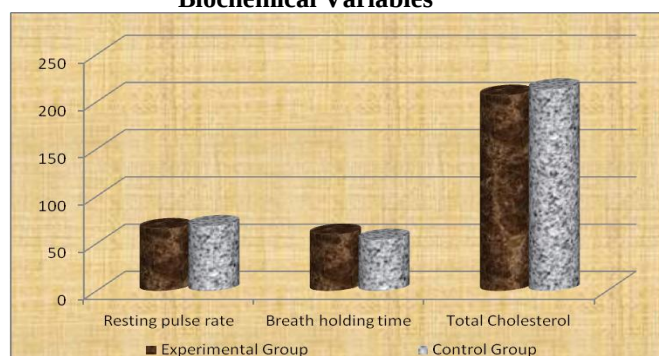
Table- I: Analysis of Covariance on Selected Variables among Experimental and Control Groups

Variables	Test	Experimental group	Control Group	So V	Sum of Square	df	Mean Square	'F' Ratio
Resting pulse rate	Adjusted post- test mean	65.48	68.63	B:	32.78	1	32.78	25.41*
				W:	34.71	27	1.29	
Breath holding time	Adjusted post- test mean	59.50	54.20	B:	258.81	1	258.81	5.59*
				W:	1249.83	27	46.29	
Total Cholesterol	Adjusted post- test mean	206.677	213.389	B:	335.70	1	335.695	7.456*
				W:	1215.65	27	45.024	

*Significant at .05 level of confidence (The table value required for significance at .05 level of confidence for df 1 and 27 was 4.21).

The above table shows the adjusted post-test means of experimental and control group of resting pulse rate are 65.48 and 68.63 respectively. The obtained 'F' ratio of 25.41 for adjusted post test is more than the table value of 4.21 for df 1 and 27 required for significance at 0.05 level. The above table shows the adjusted post-test means of experimental and control group of breath holding time are 59.50 and 54.20 respectively. The obtained 'F' ratio of 5.59 for adjusted post test is more than the table value of 4.21 for df 1 and 27 required for significance at 0.05 level. The above table shows the adjusted post-test means of experimental and control group of total cholesterol are 206.677 and 213.389 respectively. The obtained 'F' ratio of 7.456 for adjusted post test is more than the table value of 4.21 for df 1 and 27 required for significance at 0.05 level.

Figure- I : Diagram Showing the Adjusted Post-Test Mean Values on Selected Physiological And Biochemical Variables



DISCUSSIONS

The findings of the study shows that significant difference exists between experimental and control group on breath holding time, resting pulse rate and total cholesterol. Since the obtained 'F' ratio of 25.41, 5.59, and 7.456 respectively for adjusted post test means were greater than the required table value 4.21 for significance at .05 level of confidence with df 1 and 27, the interval training have its influence on selected physiological and biochemical variables of inter collegiate players.

Some experts believe aerobic interval training may benefit exercisers by allowing them to burn more calories in a shorter period of time, and by improving aerobic capability at a faster rate, when compared with continuous-intensity exercise. In addition, some exercisers find interval training less monotonous than continuous-intensity exercise. A number of studies confirm that in young and healthy individuals, sprint interval training appears to be just as effective as continuous endurance training of moderate intensity, and has the benefit of requiring a reduced time commitment (Gist et al., 2013). There is some evidence that interval training is also beneficial for older individuals and for those with coronary artery disease,

There has been increasing evidence that interval training assists in managing risk factors of

many diseases including metabolic syndrome, cardiovascular disease, obesity, and diabetes. It does this by improving insulin action and sensitivity. Generating higher insulin sensitivity results in lower levels of insulin need to lower glucose levels in the blood. This helps individuals with type 2 diabetes or metabolic syndrome control their glucose levels (Giala, Gillen & Percival, 2014; Tjonna et al., 2008)). Experts have also made it known that a combination of interval training and continuous exercise increases cardiovascular fitness and raises HDL-cholesterol, which reduces the risk of cardiovascular disease (Roxburgh et al., 2014). This type of training also decreases waist circumference, waist-to-hip ratio (WRH), and the sum of skin folds on the body (Mazurek et al., 2014).

CONCLUSIONS

Based on the results of the study, it is concluded that there was a significant increase between interval training group and control group on breath holding time. There was a significant decrease on resting pulse rate and total cholesterol between interval training group and control group.

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