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S. Manikandan

Assistant Professor,
Dept of Physical Education
& Sports Sciences,
Annamalai University,
Chidambaram, Tamil Nadu,
India

Changes on selected physical and biochemical variables in respect of interval training programme among handball players

S. Manikandan

Abstract

The purpose of the study is to analyze the influence of bicycle ergo meter practices on selected physiological variables of inter university players from different discipline. For these purpose 30 inter-university players from different discipline were selected from Annamalai University, Tamilnadu, India. Their age group ranged between 18-22 years. The randomly selected subjects were divided in two equal groups. Group- I namely Experimental group (Bicycle ergometer practices) and Group- II Control Group. Each group randomly divided 15 each. Experimental group performed bicycle ergometer practices three days a week for a period of twelve weeks and control group did not participate any training. The Statistical technique ANCOVA was used to find out the adjusted mean significant difference between the groups. The experimental group had a significant improvement on the selected physiological variables than the control group.

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

1. Introduction

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 extend on how correctly they are performed.

2. Methodology

The purpose of the study was to find out the changes of Interval training on selected physiological and biochemical variables of handball players. To achieve this purpose, 30 handball players studying in various classes were randomly selected as subjects from the Department of Physical Education and Sports Sciences, Annamalai University. The age of the subjects were ranged from 18 to 25 years. The subjects were further classified at random into

Correspondence:

S. Manikandan

Assistant Professor,
Dept of Physical Education
& Sports Sciences,
Annamalai University,
Chidambaram, Tamil Nadu,
India

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 selected variables were measured by using standard testing procedures. The biochemical variables are analysed in the department of Biochemistry, Raja Muthiah Collage and Hospital, Annamalai University by the concern Biochemist. The collected data were statistically analysed by using Analysis of Covariance (ANCOVA). The data collected

from interval group and control groups before and after completion of the training period on selected variables were statistically examined by applying analysis of covariance (ANCOVA). All the data were analyzed using SPSS statistical package. The level of confidence was fixed at .05 level of significance.

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.

Analysis of Co Variance on Selected Variables among Interval Training and Control Groups

Variable name	Test	Experimental group	Control Group	SOV	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:	335.695	1	335.695	7.456*
				W:	1215.652	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).

3. Results

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

4. Discussions on Finding

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 handball players.

5. Conclusions

Based on the results of the study, it is concluded that there was a significant increase between interval training group as compared to 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.

6. References

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