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Effect of Isolated and Combined Intermittent Training, Continuous Running Training on the Anaerobic Power Performance of Inter School Cricket Players

Physical Education

KEYWORDS : Intermittent training, Continuous Running, Combined intermittent training and Continuous Running, Anaerobic Power

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ABSTRACT

Purpose:

The present study is designed to find out the effect of isolated and combined intermittent training, continuous running training on the anaerobic power performance of inter school cricket players.

Subjects:

For this purpose, sixty men (N=60) Cricket players studying from various schools in Ramanathapuram District, Tamilnadu during the year 2014-2015 were selected randomly as subjects. The age of the subjects were ranged from 14 to 16 years. The subjects were assigned in random into four groups of fifteen each (n=15) namely, Intermittent training, Continuous Running Training, Combined intermittent training and Continuous Running Training and Control group.

Training Protocol:

Group-I underwent Intermittent training, Group-II underwent Continuous Running Training, Group-III underwent Combined intermittent training and Continuous Running Training and Group-IV acted as Control. The duration of the training period for all the three Experimental groups was restricted to twelve weeks and the number of sessions per week was confined to three in a week. For Combined intermittent training and Continuous Running the training period was restricted to alternative weeks for twelve weeks.

Variables:

The dependent variable selected for this study was Anaerobic Power. Anaerobic Power was assessed by Margaria – Kalamen Anaerobic power test.

Statically Procedure:

All the subjects were tested prior to the training and immediately after test, the training was given to all the selected variables. Data were collected and statistically analyzed using ANCOVA. Scheffe's post hoc test was applied to determine the significant difference between the paired means. In all the cases 0.05 level of significance was fixed.

Results:

The results of the study showed that there was a significant difference was found among all the Experimental groups namely Intermittent Training, Continuous Running Training and Combined Intermittent Training and Continuous Running Training groups had significantly increase in the Anaerobic Power Performance. Further the results of the study showed that the combined intermittent training and Continuous Running group was found to be better than the Intermittent training group and Continuous Running group in Anaerobic Power.

INTRODUCTION

Sport and games involve competition. Without competition, there is no game. Competition provides a forum within which people strive to become competent, to become excellent. The opportunities for rivalry within sport are many and varied: team against team, individual against individual, individual against a record, individual now against a previous best performance and an individual against a physical barrier. Competition involves individuals and groups striving for excellence within the rules and traditions that make up a sport, including all the festival characteristics that give the sport additional flavor and meaning.

Sports for all have become a very popular slogan all over the world today. Participation in sports and games will yield optimum physical fitness and positive health for all. Today's life mostly depends upon science and technology. In such circumstances people need more exercise to keep the body fit to execute the activity efficiently. A sport is a popular spectacle and a mass social movement of contemporary times. In the process of historical development, sports have occupied a prominent place in both the physical as well as in the moral culture of the society.

Sports' training in its typical and most effective form is a pedagogically organized process characterized by all the main traits of a strictly directed process of teaching, upbringing and self-education. The system of exercises, also so arranged as to reach a maximum developing effect in the condition of full control of the process of perfection constitutes the methodological foundation of sports training. The athlete's training is a multi-sided process of the expedient use of aggregate factors (means, methods and conditions), which influences the development of an athlete and ensures the necessary level of preparedness ***(Matveyev, 1981).***

A Cricketer needs static and dynamic strength in an altogether different way. In Cricket, one does not need such strength but proper development of strength is very important ***(Sharangapani, 1992).***

Intermittent exercises of various types are best known where they have been employed as components to endurance sports. Disciplines such as distance running, road cycling racing, and mountain biking require the body to produce the energy necessary for physical performance through the aerobic energy system, which primarily utilizes stores of carbohydrate products, in the form of glycogen reduced, as energy is required, to the sugar glucose. To generate energy, the body—through the cardiovascular system—transports oxygen and other nutrients essential to muscle function. The greater the ability of the heart to pump blood volume to the muscles, the likely more efficient the production of energy and the removal of wastes such as carbon dioxide will be.

Interval training has been the basis for athletic training for several years. The first form of interval training, called "Fartlek" involved alternating short, fast bursts of intensive exercise with the slow and easy activities. Fartlek was casual, unstructured training that perfectly fit to its English translation: "speed play."

Continuous training method, an exercise is done for a long time without any break or pause. Because of the long duration of work, the intensity is low. The continuous method has four variations which are slow and continuous method, fast continuous method, variable pace method, and fartlek method ***(Reid and Thomson, 2003).***

METHODOLOGY

The study was conducted on sixty men (N=60) Cricket Players who were studying in various schools in Ramanathapuram District, Tamilnadu during the year 2014-2015 were selected randomly as subjects. The age of the subjects were ranged from 14 to 16 years. Subjects were randomly assigned equally into four groups. Group-I underwent the Intermittent training, Group-II underwent the Continuous Running Training, Group-III underwent the Combined intermittent training and Continuous Running Training and Group-IV acted as Control. The experimental groups underwent the respective training for a period of 12 weeks (3 days/week), the Combined intermittent training and Continuous Running the training period was restricted to alternative weeks for twelve weeks whereas the control remain as normal with the sedentary life. Anaerobic Power only selected as dependent variable and it was assessed through Margaria – Kalamen Anaerobic power test. All the four groups were tested on selected Anaerobic Power are analyzed before and after the training period.

ANALYSIS OF THE DATA

The data collected from the experimental groups and control group on prior and after experimentation on selected variables were statistically examined by analysis of covariance (ANCOVA) was used to determine the differences, if any among the adjusted post test means on selected criterion variables separately. Whenever they obtained f-ratio value was significant to the Scheffe's test one was applied as a post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed.

The Analysis of covariance (ANCOVA) on Anaerobic Power of Experimental Groups and Control group have been analyzed and presented in the Table -1.

Table – 1
Values of Analysis of Covariance for Experimental Groups and Control Group on Anaerobic Power

Tests	Adjusted Post test Means				Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
	Intermittent Training Group	Continuous Running Training Group	Combined Intermittent Training and Continuous Running Training Group	Control Group					
Pre Test	87.81	87.44	87.07	87.07	Between With in	5.70 3262.28	3 56	1.90 58.25	0.03
Post Tests	98.69	98.00	109.58	87.08	Between With in	3800.37 4831.15	3 56	1266.79 86.27	14.68*
Adjusted post Test	98.39	97.95	109.76	87.26	Between With in	3800.08 3497.09	3 55	1226.70 63.58	19.92*

** Significant at.05 level of confidence*

(The table value required for Significance at 0.05 level with df 3 and 56 and 3 and 55 is 2.76 and 2.77)

Table-1 shows the pre test means of Anaerobic Power for Intermittent Training group, Continuous Running Training group, Combined Intermittent Training and Continuous Running Training group and Control group are 87.81, 87.44, 87.07 and 87.07 respectively. The obtained pre test F-ratio is 0.03, the f-ration values is less than the table value of 2.76 for df 3 and 56 at 0.05 level of confidence. The results of the study showed that there is no significance improvement of pre test values among the groups.

The post test mean values of Anaerobic Power for Intermittent Training group, Continuous Running Training group, Combined Intermittent Training and Continuous Running Training group and Control group are 98.69, 98.00, 19.58 and 87.08 respectively. The obtained post test F-ratio is 14.68, the f-ration values is higher than the table value of 2.76 for df 3 and 56 at 0.05 level of confidence. The results of the study showed that there is significance improvement of post test values among the groups.

The adjusted post test mean values of Anaerobic Power for Intermittent Training group, Continuous Running Training group, Combined Intermittent Training and Continuous Running Training group and Control group are98.39, 97.95, 109.75 and 87.26 respectively. The obtained adjusted post test F-ratio is 19.92, the f-ration values is higher than the table value of 2.77 for df 3 and 55 at 0.05 level of confidence. The results of the study showed that there is significance improvement of post test values among the groups.

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To determine which of the paired means had a significant difference, Scheffe's test was applied as Post hoc test and the results are presented in Table-2.

Table - 2
The Scheffe's test for the differences between the adjusted post tests paired means on Anaerobic Power

Certain Variables	Adjusted Post test Means				Mean Difference	Confidence Interval
	Intermittent Training Group	Continuous Running Training Group	Combined Intermittent Training and Continuous Running Training Group	Control Group		
Anaerobic Power	98.39	97.95	--	--	0.44	4.98
	98.39	--	109.76	--	11.37*	4.98
	98.39	--	--	87.26	11.13*	4.98
	--	97.95	109.76	--	11.81*	4.98
	--	97.95	--	87.26	10.69*	4.98
	--	--	109.76	87.26	22.50*	4.98

** Significant at.05 level of confidence*

Table-2 shows that the adjusted post test mean differences on Anaerobic Power between the Anaerobic Power in Intermittent training group and Combined Intermittent Training and Continuous Running training group, Intermittent training group and Control group, Continuous Running training group and Combined Intermittent Training and Continuous Running training group, Continuous Running training group and Control group, Combined Intermittent Training and Continuous Running training group and Control group are 11.37, 11.13, 11.81, 10.69 and 22.50 respectively and they are greater than the confidence interval value of 4.98, which shows the significant differences at 0.05 level of confidence.

The adjusted post test means differences on Anaerobic Power between Intermittent Training group and Continuous Running training group is 0.44, which is lesser than the confidence interval value of 4.98, which shows there is no significant difference at 0.05 level of confidence.

The results of the study further have revealed that there is a significant difference in Anaerobic Power between the adjusted post test means of Intermittent training group and Combined Intermittent Training and Continuous Running training group Intermittent training group and Control group, Continuous Running training group and Combined Intermittent Training and Continuous Running training group, Continuous Running training group and Control group, Combined Intermittent Training and Continuous Running training group and Control group. The results of the study further have revealed that there is no significant difference in Anaerobic Power between Intermittent Training group and Continuous Running training group.

However, the increase in Anaerobic Power was significantly higher for Combined Intermittent Training and Continuous Running training group than other Experimental groups.

It may be concluded that the Combined Intermittent Training and Continuous Running training group has exhibited better than the other experimental groups in decreasing Anaerobic Power.

The adjusted post test mean value of Experimental groups and Control group on Anaerobic Power is graphically represented in the Figure -1.

Figure-1

Bar diagram on ordered adjusted means of Anaerobic Power

CONCLUSION

From the analysis of the data, the following conclusions were drawn.

Significant differences in achievement were found between the Intermittent Training group, Continuous Running Training group, Combined Intermittent Training and Continuous Running Training group and Control group in the selected criterion variable such as Anaerobic Power.

The Experimental groups namely, Intermittent Training group, Continuous Running Training group, Combined Intermittent Training and Continuous Running Training group had significantly improved in Anaerobic Power.

The Combined Intermittent Training and Continuous Running Training group were found to be better than the Intermittent Training group, Continuous Running Training group and Control group is increasing in Anaerobic Power.

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