



EFFECT OF INTERMITTENT TRAINING, CONTINUOUS RUNNING TRAINING AND COMBINED TRAINING ON THE EYE-HAND COORDINATION AMONG ANNA UNIVERSITY BASKETBALL PLAYERS

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ABSTRACT

Purpose: The present study is designed to find out the effect of intermittent training, continuous running training and combined training on the eye-hand coordination among Anna university basketball players

Subjects: For this purpose, sixty men (N=60) Basketball players studying from various Colleges affiliated Anna University, Chennai, Tamilnadu during the year 2015-2016 were selected randomly as subjects. The age of the subjects were ranged from 18 to 21 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 Eye-hand coordination was assessed by Ball transfer test.

Statistical Procedure: All the subjects were tested prior to the training and immediately after test, the training was given to all the selected variables. Data are 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 decrease in the eye-hand coordination. 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 eye-hand coordination.

KEYWORDS : Intermittent Training, Continuous Running, Combined Intermittent Training And Continuous Running, Eye-hand Coordination

INTRODUCTION

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).

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) Basketball players studying from various Colleges affiliated Anna University, Chennai, Tamilnadu during the year 2015-2016 were selected randomly as subjects. The age of the subjects were ranged from 18 to 21 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. 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. Eye-hand coordination only selected as dependent variable and it was assessed through Ball transfer test. All the four groups were tested on selected Eye-hand coordination was 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 Eye-hand coordination of Experimental Groups and Control group have been analyzed and presented in the Table -1.

Table – 1 Analysis Of Covariance On Eye-hand Coordination Of Experimental Groups And Control Group

Test	Intermittent Training Group (I)	Continuous Running Group (II)	Combined Intermittent and Continuous Running Group (III)	Control Group (IV)	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Pre Test Mean	2.16	2.17	2.21	2.12	Between	0.05	3	0.02	1.
					Within	0.79	56	0.01	28
Post Test Mean	1.77	1.76	1.67	2.13	Between	1.85	3	0.62	85.
					Within	0.40	56	0.001	85*
Adjusted Post Test Mean	1.78	1.75	1.65	2.15	Between	2.00	3	0.67	145.
					Within	0.25	55	0.001	39*

*Significant at 0.05 level of confidence

(Eye-Hand Coordination Scores in Seconds)

Table value for $df(3, 56)$ at 0.05 level = 2.76 Table value for $df(3, 55)$ at 0.05 level = 2.78

The above table-1 shows that the pre-test mean values on Eye-Hand Coordination of Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group are 2.16, 2.17, 2.21 and 2.12 respectively. The obtained 'F' ratio of 1.28 for pre-test scores was lesser than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Eye-Hand Coordination.

The post test mean values on Eye-Hand Coordination of Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group are 1.77, 1.76, 1.67 and 2.13 respectively. The obtained 'F' ratio of 85.85 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Eye-Hand Coordination.

The adjusted post-test means on Eye-Hand Coordination of Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group are 1.78, 1.75, 1.65 and 2.15 respectively. The obtained 'F' ratio of 145.39 for adjusted post-test scores was higher than the table value of 2.78 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Eye-Hand Coordination.

The results of the study indicate that there are significant differences among the adjusted post test means of Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group in Eye-Hand Coordination performance.

To determine which of the paired means have a significant difference, the Scheffe's test is 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 Test Paired Means On Eye-hand Coordination

Adjusted Post-test Means				Mean Difference	Confidence Interval
Intermittent Training Group – (I)	Continuous Running Group – (II)	Combined Intermittent and Continuous Running Group – (III)	Control Group (IV)		
1.78	1.75			0.02	0.07
1.78		1.65		0.13*	0.07
1.78			2.15	0.37*	0.07
	1.75	1.65		0.10*	0.07
	1.75		2.15	0.39*	0.07
		1.65	2.15	0.50*	0.07

* Significant at 0.05 level of confidence

Table-2 shows that the adjusted post test mean differences on Eye-Hand Coordination between Intermittent training group and Combined Intermittent and Continuous Running Group, Intermittent training group and Control group, Continuous Running 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 0.12, 0.37, 0.10, 0.39 and 0.50 respectively, which are greater than the confidence interval value of 0.07 on Eye-Hand Coordination at 0.05 level of confidence.

Further the table-2 shows that the adjusted post test mean differences on Eye-Hand Coordination between Intermittent Training group and Continuous Running group was 0.02, which are lesser than the confidence interval value of 0.07 on Eye-Hand Coordination at 0.05 level of confidence.

The results of the study showed that there was a significant difference between Intermittent training group and Combined Intermittent and Continuous Running Group, Intermittent training group and Control group, Continuous Running 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 on Eye-Hand Coordination. Further the results of the study showed that there was no significant difference between Intermittent Training group and Continuous Running group on Eye-Hand Coordination.

The above data also reveal that Combined Intermittent and Continuous Running group had shown better performance than Intermittent Training group, Continuous running group and Control group in Eye-Hand Coordination.

The pre and post mean values of Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group on Eye-Hand Coordination are graphically represented in the Figure -1.

The adjusted post mean values of Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group on Eye-Hand Coordination are graphically represented in the Figure-2.

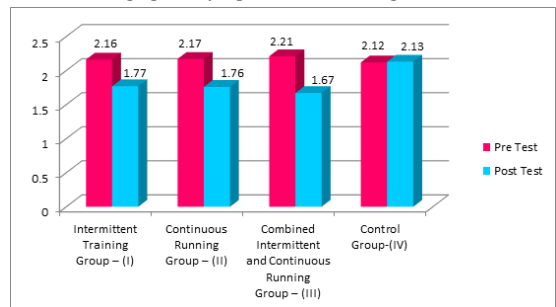


Figure: 1 The Pre and Post test Mean values Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group on Eye-Hand Coordination (In Seconds)

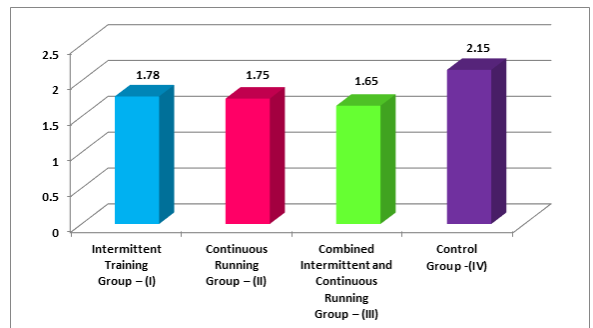


Figure: 2 The Adjusted Post Mean Values of Intermittent training group, Continuous Running group, Combined intermittent training and Continuous Running group and Control group on Eye-Hand Coordination (In Seconds)

CONCLUSION

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

1. 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 Eye-Hand Coordination.
2. The Experimental groups namely, Intermittent Training group, Continuous Running Training group, Combined Intermittent Training and Continuous Running Training group had significantly decreased in Eye-Hand Coordination.
3. 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 decreasing in Eye-Hand Coordination.

References

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