



Effect of Intermittent Training and Aerobic Exercise on Selected Speed Parameters of College Men Volleyball Players

KEYWORDS

Intermittent Training, Aerobic Exercise Speed, Stride Length

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ABSTRACT

The purpose of this study was to find out the effect of Intermittent Training and Aerobic Exercise on Selected Speed Parameters of College Men Volleyball Players. The study was conducted on forty five (N=45) men Volleyball players who have participated University of Madras inter collegiate Volleyball tournament during the year 2013-2014, were selected as subjects. The age of the subjects were ranged from 17 to 21 years. The subjects were assigned at random into three groups of fifteen each (n=15). Group-I underwent Intermittent Training, Group-II underwent Aerobic Exercise, and Group III acted as Control. The Experimental groups underwent their respective training for 12 weeks in addition to the regular training as per College curriculum. The dependent variable such as Speed and Stride Length was selected, and it was assessed by 50 meters run. The data collected from the three groups prior to and post experimentation on Speed and Stride Length was statistically analyzed by using Analysis of Covariance (ANCOVA). Hence, whenever the obtained f-ratio value was significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed. The results of the study suggest Intermittent training group was better than other groups on the development of Speed and Stride Length.

INTRODUCTION

Intermittent exercise is a term used to describe a variety of different physical training types. The term "intermittent," which means to stop and start at intervals, and the term "interval," as in interval training, is used somewhat interchangeably. In most circumstances, interval training will be conducted as a high intensity exercise activity.

Aerobic exercise refers to [exercise](#) that involves or improves oxygen consumption by the body. Aerobic means "with [oxygen](#)", and refers to the use of oxygen in the body's metabolic or [energy](#)-generating process. Many types of exercise are aerobic, and by definition are performed at moderate levels of intensity for extended periods of time. To obtain the best results, an aerobic exercise session involves a [warming up](#) period, followed by at least 20 minutes of moderate to intense exercise involving large muscle groups, and a [cooling down](#) period at the end.

Aerobics included scientific exercise programs using running, walking, swimming and bicycling. The book came at a fortuitous historical moment, when increasing weakness and inactivity in the general population was causing a perceived need for increased exercise. It became a best seller. Cooper's data provided the scientific baseline for almost all modern aerobics programs, most of which are based on oxygen-consumption equivalency.

Anaerobic exercise is exercise intense enough to trigger [anaerobic metabolism](#). It is used by athletes in non-[endurance](#) sports to promote strength, speed and power and by body builders to build muscle mass. Muscle energy systems trained using anaerobic exercise develop differently compared to [aerobic exercise](#), leading to greater performance in short duration, high intensity activities, which last from mere seconds up to about 2 minutes ([Medbo et al, 1988](#)).

METHODOLOGY

For this study forty five (N=45) men Volleyball players who have participated University of Madras inter collegiate Volleyball tournament during the year 2013-2014, were selected as subjects. The age of the subjects were ranged from 17 to 21 years. The subjects were assigned at random into three groups of fifteen each (n=15). Group-I underwent Intermittent Training, Group-II underwent Aerobic Exercise, and Group III acted as Control. The Experimental groups underwent their respective training for 12 weeks in addition to the regular training as per College curriculum. The dependent variable such as Speed and Stride Length was selected, and it was assessed by 50 meters run. 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 differences, if any among the adjusted post test means on selected criterion variables separately. Whenever they obtained f-ratio value in the simple effect was significant the Scheffe's test was applied as 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 Speed and Stride Length of Experimental Groups and Control group have been analyzed and presented in Table -1.

Table - 1
Values of Analysis of Covariance for Experimental Groups and Control Group on Speed and Stride Length

Certain Variables	Adjusted Post test Means			Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
	Intermittent Training Group - (I)	Aerobic Exercise Group - (II)	Control Group - (III)					

Speed	6.89	7.15	7.66	Be-tween	4.60	2	2.30	36.31*
				With in	2.60	41	0.06	
Stride Length	1.75	1.72	1.66	Be-tween	0.05	2	0.03	75.04*
				With in	0.02	41	0.001	

* Significant at.05 level of confidence

(The table value required for Significance at 0.05 level with df 2 and 41 is 3.23)

Table-1 shows that the adjusted post test mean value of Speed and Stride Length for Intermittent training, aerobic exercise, and control groups, are 6.89, 7.15, 7.66, 1.75, 1.72 and 1.66 respectively. The obtained F-ratio of 36.31 and 75.04 for the adjusted post test mean is more than the table value of 3.23 for df 2 and 41 required for significance at 0.05 level of confidence. The results of the study indicate that there are significant differences among the adjusted post test means of experimental groups and control group on Speed and Stride Length.

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 Speed and Stride Length

Certain Variables	Adjusted Post test Means			Mean Difference	Confidence Interval
	Intermittent Training Group (I)	Aerobic Exercise Group (II)	Control Group (III)		
Speed	6.89	7.15	---	0.26*	0.23
	6.89	---	7.66	0.77*	
	---	7.15	7.66	0.51*	
Stride Length	1.75	1.72	---	0.03*	0.02
	1.75	---	1.66	0.09*	
	---	1.72	1.66	0.06*	

* Significant at.05 level of confidence

Table-2 shows that the adjusted post test mean difference on Speed and Stride length between Intermittent training group and aerobic exercise group, intermittent training group and control group, aerobic exercise group and control group are 0.26, 0.77, 0.51, 0.03, 0.09 and 0.06 respectively and they greater than the confidence interval value 0.23 and 0.02, which shows significant differences at 0.05 level of confidence.

It may be concluded from the results of the study that there is a significant difference in Speed and Stride length

between the adjusted post test means of Intermittent training group and aerobic exercise group, intermittent training group and control group, aerobic exercise group and control group. However, the improvement in Speed and Stride length was significantly decreased for intermittent training group than aerobic exercise group and control group.

It may be concluded that the intermittent training group is better than the other aerobic exercise group and control group in improving Speed and Stride length.

The adjusted post test means values of Experimental groups and control group on Speed and Stride length are graphically represented in the Figure -1 & Figure-II.

FIGURE -1
BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF SPEED

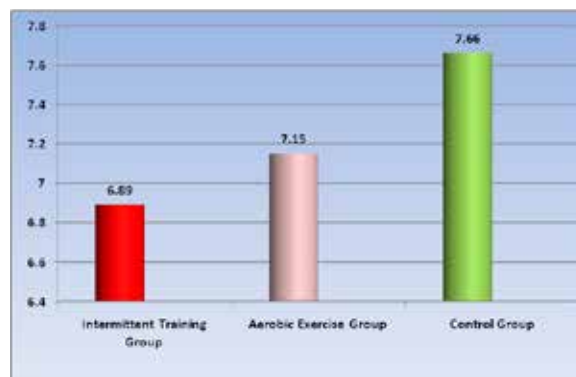
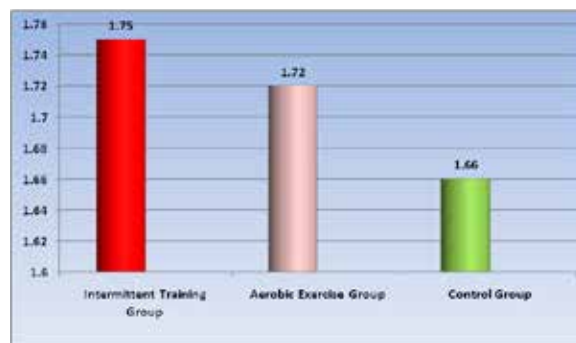


FIGURE -2
BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF STRIDE LENGTH



RESULTS AND DISCUSSION

The results of the study indicate that the experimental group's namely intermittent training and aerobic exercise had significantly improved in the selected dependent speed variables namely speed and stride length. It is also found that the improvement achieved by the intermittent training was greater when compared to aerobic exercise group and control group. These results are in conformity with the findings of the studies undertaken by the following sports scientists (John Parthiban, 2012), Kodama et al., 2007) and Narayani and Sudhan, 2010).

CONCLUSION

The designed intermittent training and aerobic exercises made impacts on speed and stride length during post training assessment among volleyball players. Statistically the intermittent training group has proved a better signifi-

cance than aerobic and control groups. Based on the findings, it is concluded that the designed intermittent training package could be of notable capsule training to increase positive speed and stride length for Volleyball players.

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