



Effect of Aerobic Anaerobic and Skill Training Packages on Selected Bio Motor components of University Men Soccer Players

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ABSTRACT

The purpose of this study was to find out the effect of aerobic anaerobic and skill training packages on selected bio motor components of university men soccer players. The study was conducted on forty five men (n=45) men Soccer players studying various Arts and Science Colleges Affiliated to Madras University College, Chennai, Tamilnadu, India during the academic year 2012-2013 were selected as subjects. The age of the subjects were ranged from 18 to 22 years. The subjects were assigned at random into three groups of twenty each (n=20). Group I underwent Aerobic Training, Group II underwent Anaerobic training, Group III underwent Skill training and Group IV acted as Control. All the Experimental groups undergo their respective training for 12 weeks in addition to the regular training as per College curriculum. The Control group was not participated any vigorous activities. Among various Bio Motor components only speed was selected as dependent variable and it was assessed by 50 Metres Run test. The data collected from the four groups prior to and post experimentation on Speed 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 .05 level of significance was fixed. The results of the study suggest Anaerobic training group was better than other groups on the development of Speed.

Keywords: Aerobic Training, Anaerobic Training, Skill Training, Speed

INTRODUCTION

Aerobic and anaerobic are words originally applied by bacteriologists to bacteria. Aerobic the word applied to the bacteria requiring free oxygen in order to live. Anaerobic the word applied to the bacteria able to live and survive in the absence of oxygen or air.

Later, as exercise started to become more and popular, these words were adopted to designate certain types of exercise. Most everyone is familiar with "Aerobic Exercise". Not everyone is familiar with non-aerobic or anaerobic exercise.

When performing a set of aerobic exercises you are causing the body to utilize oxygen in order to create energy. The oxygen is needed to breakdown glucose. Glucose is the fuel needed to create energy. However, the opposite applies to anaerobic exercises. In anaerobic exercises the body creates the energy without oxygen. This basically is because the body's demand for energy is greater so that it will find natural body chemicals to create it.

Breathing properly when exercising is very important. The air enters the lungs and the oxygen in the air is passed through the lining of the lungs. The oxygen is taken up by the red blood cells. The red blood cells enter the circulating blood carrying the oxygen. The blood goes to the heart and is circulated throughout the entire body. The muscles use this oxygen for the needed energy as it is being used will give off a waste product (carbon dioxide). The carbon dioxide (CO₂) is in turn released into the blood stream and returned to the lungs to be exhaled.

Anaerobic exercise is a form of exercise in which energy for the activities performed comes from the sugars present in the muscle cells and not from oxygen in the blood. In fact, anaerobic means "in the absence of oxygen". Such exercises are

basically of short duration and intense. Examples of anaerobic exercise include sprinting and weight training. Because the effort required for such exercise is intense, it cannot be sustained for long. There are many factors that contribute to muscle fatigue during anaerobic exercise, chief amongst them is the production of lactic acid when sugars are broken down. The accumulation of lactic acid in the blood is a limiting factor to the extent we can carry out high-intensity activity without oxygen.

Anaerobic exercise focuses on specific muscles and their size, endurance, and strength. Weight lifting and golf are examples of anaerobic exercise. This form of exercise won't provide as many benefits as aerobic exercise, but it is a good supplement to your aerobic work-out.

Soccer skill can be developed through repetition, observation or visualization. With regular training and practice of a specific movement or technique, the player builds confidence and the target motion becomes natural to him. Another type of "training" one should consider is watching quality games on the TV or videos in slow motion. The act of observing other players' skills can help better ones own technique. Visualization is a radical new method used to instill and develop one's ability. It focuses on picturing yourself in the third person, while applying a specific technique.

METHODOLOGY

The purpose of this study was to find out the effect of aerobic anaerobic and skill training packages on selected bio motor components of university men soccer players. The study was conducted on forty five men (n=45) men Soccer players studying various Arts and Science Colleges Affiliated to Madras University College, Chennai, Tamilnadu, India during the academic year 2012-2013 were selected as subjects. The age of the subjects were ranged from 18 to 22 years. The subjects

were assigned at random into three groups of twenty each (n=20). Group I underwent Aerobic Training, Group II underwent Anaerobic training, Group III underwent Skill training and Group IV acted as Control. All the Experimental groups undergo their respective training for 12 weeks in addition to the regular training as per College curriculum. The Control group was not participated any vigorous activities. Among various Bio Motor components only speed was selected as dependent variable and it was assessed by 50 Metes Run test.

RESULTS AND DISCUSSION

The data collected from the four groups prior to and post ex-

perimentation on Speed 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 .05 level of significance was fixed. The results of the study suggest Anaerobic training group was better than other groups on the development of Speed.

The Analysis of covariance (ANCOVA) on Speed of Aerobic Training, Anaerobic training, Skill training packages and Control group have been analyzed and presented in Table -I.

**Table -I
COMPUTATION OF ANALYSIS OF COVARIANCE OF ADJUSTED POST- TEST OF SPEED OF FOUR GROUPS (Scores in Seconds)**

Adjusted Post-test Means				Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
Aerobic Training Group (I)	Anaerobic Training Group (II)	Skill Training Group (III)	Control Group (IV)					
7.34	6.78	6.94	7.68	Between	7.47	3	2.49	33.10*
				With in	4.14	55	0.08	

*** Significant at .05 level of confidence**
(The table value required for Significance at .05 level with df 3 and 55 is 2.77)

Table I shows that the adjusted post test mean value of Speed for Aerobic Training group, Anaerobic training group, Skill training group and Control group are 7.34, 6.78, 6.94 and 7.68 respectively. The obtained F-ratio of 33.10 for adjusted post test mean is more than the table value of 2.77 for df 3 and 55 required for significant at .05 level of confidence.

The results of the study indicate that there are significant differences among the adjusted post test means of Aerobic Training group, Anaerobic training group, Skill training group and Control group on the development of Speed.

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

**TABLE - I(A)
THE SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES AMONG PAIRED MEANS OF SPEED (Scores in Seconds)**

Adjusted Post-test means				Mean Difference	Confidence Interval
Aerobic Training Group (I)	Anaerobic Training Group (II)	Skill Training Group (III)	Control Group (IV)		
7.34	6.78			0.56*	0.29
7.34		6.94		0.40*	0.29
7.34			7.68	0.34*	0.29
	6.78	6.94		0.16	0.29
	6.78		7.68	0.90*	0.29
		6.94	7.68	0.74*	0.29

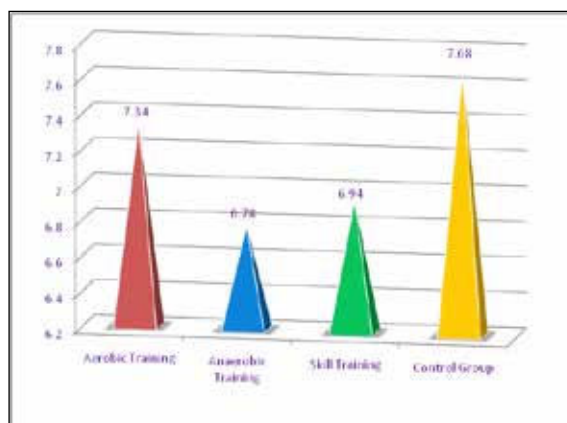
*** Significant at .05 level of confidence**
Table I(A) shows that the adjusted post test mean difference on Aerobic Training group and Anaerobic Training group, Aerobic Training group and Skill Training group, Aerobic Training group and Control group, Anaerobic Training group and Control group, Skill training group and Control group, are 0.56, 0.40, 0.34, 0.90 and 0.74 respectively. The values are greater than the confidence interval value 0.29, which shows significant differences at .05 level of confidence. The values between Anaerobic Training group and Skill training group showed lower than the confidence interval value so it showed insignificant differences.

It may be concluded from the results of the study that there is a significant difference in speed between the adjusted post test means of Aerobic Training group and Anaerobic Training group, Aerobic Training group and Skill Training group, Aerobic Training group and Control group, Anaerobic Training group and Control group, Skill training group and Control group. The values between Anaerobic Training group and Skill training group showed lower than the confidence interval value so it showed insignificant differences. However, the improvements of Speed were significantly higher for Anaerobic Training group than Aerobic Training group, Skill Training group and Control group.

It may be concluded that Anaerobic Training group is better than Aerobic Training group, Skill Training group and Control group in improving Speed.

The adjusted post test mean values of Aerobic Training group, Anaerobic training group, Skill training group and Control group on Speed are graphically represented in the Figure -I.

**Figure -I.
BAR DIAGRAM SHOWING ADJUSTED POST- TEST ON SPEED OF FOUR GROUPS (Scores in Seconds)**



RESULTS AND DISCUSSION
Kramer et al(1999) studied the effects of exercise on function in 124 elderly human subjects. These subjects underwent either aerobic exercise (walking) or anaerobic exercise (stretching) over a period of 6 months. For the subjects who received aerobic training, the results revealed selective improvements in reaction time. Of particular interest, the authors also stated that the improvements they found required only a small

increase in aerobic fitness. Thus, although speculative, this finding of Kramer et al.(1999) in combination with our finding of improved tracking without an aerobic training effect, suggests that the improvement in information processing may be coupled not so much to "aerobic" training but perhaps to some other event related to the training, such as repetitive neuronal firing. Findings of this study was supported by Ramesh, John Parthiban, Sundaramoorthy,(2010) and Ramakrishnan(2008)

CONCLUSION

1. The experimental groups namely, Aerobic Training group,

Anaerobic Training group and Skill training group had significantly improved in Speed.

2. Significant differences in achievement were found among Aerobic Training group, Anaerobic Training group and Skill training group on selected criterion variables such as Speed.
3. Anaerobic Training group was showed better performance than Aerobic Training group, Skill training group and Control group on the development of Speed.

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