



Effect of Aerobic Interval Training on Selected Physical Variables among College Level Football Players

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Abstract

The purpose of the present study was to find out the effect of aerobic interval training on physical variables among college level football players. To achieve the purpose of the present study, thirty college level football players from Renugambal College of Physical Education, Thiruvannamalai, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The selected subjects are divided in to two groups. The experimental group participated aerobic interval training for six weeks. The control group was not undergone any training other than their daily routine. The criterion measures speed was measured by 50 metres run test and the unit is in seconds, agility was measured by shuttle run and the unit is in seconds and explosive power was measured by vertical jump and the unit is in centimetres. The two groups were statistically analysed by using analysis of covariance (ANCOVA) at 0.05 level. The result of the study reveals that there was a significant improvement in the experimental group on selected variables when compared to the control group after the completion of six weeks of aerobic interval training. The aerobic interval training group has showed better performance on speed, agility and explosive power than the control group.

Keywords: Aerobic Interval Training, Speed, Agility, Explosive Power, Football.

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Introduction

Aerobic interval training (AIT) is a mode of physical conditioning whereby an individual, or groups of individuals, exercise at higher intensities through various interval periods. The key variable to AIT is the work - rest ratio. Exercise sessions for de-conditioned individuals can be set at reduced intensities (40-50% maximum heart rate [MHR]) but can be made more demanding through short work periods (20-60secs) of higher intensity (80% MHR). This mode of exercise protocol is distinguished from high-intensity interval training (HIIT) now popular in health clubs, personal training and classes such as boot camps, kettlebells and spinning, which attracts MHRs of 90-95% for longer durations and fewer rest periods. This type of exercise protocol would not be sustainable or suitable for a de-conditioned individual. Football is also referred to as soccer in some parts of the world, is a high-energy athletic team sport in this new age. It would be a joy to trace the birth and growth of this popular sport. It said that the number of countries that are FIFA members even outnumber the members of United Nations Organizations – another undeniable proof of the game's popularity.

Since 1900, football has also been integral part of the greatest sports extravaganza in the world, the

Olympics. The game, as we know it today, has been followed in a feverish fashion in Europe, especially in England, for centuries. In fact, the game has been followed by men and women throughout the world. The first recorded game took place as early as A.D. 217 in the town of Derby in England. This particular game was once part of a grand festival that was celebrated by the local folk after the victory over the invading Romans. The tradition bound English men also conducted annual football events ever since. One of them is the Shrove Tuesday football game being played since 1175 (Morris, 1981).

Methodology

The purpose of the present study was to find out the effect of aerobic interval training on physical variables among college level football players. To achieve the purpose of the present study, thirty college level football players from Renugambal College of Physical Education, Thiruvannamalai, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The selected subjects are divided in to two groups. The experimental group participated aerobic interval training for six weeks. The control group was not undergone any training other than their daily routine. The criterion measures speed was measured by 50 metres run test and the unit is in seconds, agility was measured by shuttle run and the unit

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is in seconds and explosive power was measured by vertical jump and the unit is in centimetres. The two groups were statistically analysed by using analysis of covariance (ANCOVA) at 0.05 level.

Results and Discussion

The detailed procedure of analysis of data and interpretation were given below,

Table I. Summary of Descriptive Statistics on Selected Physical Variables among College level football players

S.No	Variables	AITG					CG				
		Pre	SD (±)	Post	SD (±)	Adjusted Mean	Pre	SD (±)	Post	SD (±)	Adjusted Mean
1	Speed	7.54	0.27	7.15	0.22	7.10	7.40	0.22	7.39	0.24	7.44
2	Agility	11.79	0.77	10.85	0.55	10.74	11.45	0.60	11.44	0.61	11.55
3	Explosive power	27.60	1.29	40.40	3.83	40.35	27.13	1.95	27.00	2.77	27.04

AITG = Aerobic Interval Training Group,

CG = Control Group

The table I shows that the pre and post test means and standard deviation of two groups on selected

physical variables among college level football players.

Table II. Analysis of Variance of Pre Test Scores on Selected Physical Variables among College level football players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Speed	BG	0.13	1	0.13	2.09
		WG	1.77	28	0.06	
2	Agility	BG	0.85	1	0.85	1.77
		WG	13.50	28	0.48	
3	Explosive power	BG	1.63	1	1.63	0.59
		WG	77.33	28	2.76	

* P < 0.05 Table F, df (1,28) (0.05) = 4.19

In table II, the results of analysis of variance of pre test scores on speed (2.09), agility (1.77) and explosive power (0.59) were lesser than the table value

of 4.19 indicating that it was not significant for the degrees of freedom (1,28) at 0.05 level of confidence indicating that the random sampling was successful.

Table III. Analysis of Variance of Post Test Scores on Selected Physical Variables among College level football players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Speed	BG	0.45	1	0.45	9.41*
		WG	1.34	28	0.04	
2	Agility	BG	2.68	1	2.68	7.91*
		WG	9.50	28	0.34	
3	Explosive power	BG	1346.70	1	1346.70	120.24*
		WG	313.60	28	11.20	

* P < 0.05 Table F, df (1,28) (0.05) = 4.19

In table III, the results of analysis of variance of post test scores on speed (9.41), agility (7.91) and explosive power (120.24) were greater than the table

value of 4.19 indicating that it was significant for the degrees of freedom (1,28) at 0.05 level of confidence.

Table IV. Analysis of Covariance of Adjusted post test scores on Selected Physical Variables among College level football players

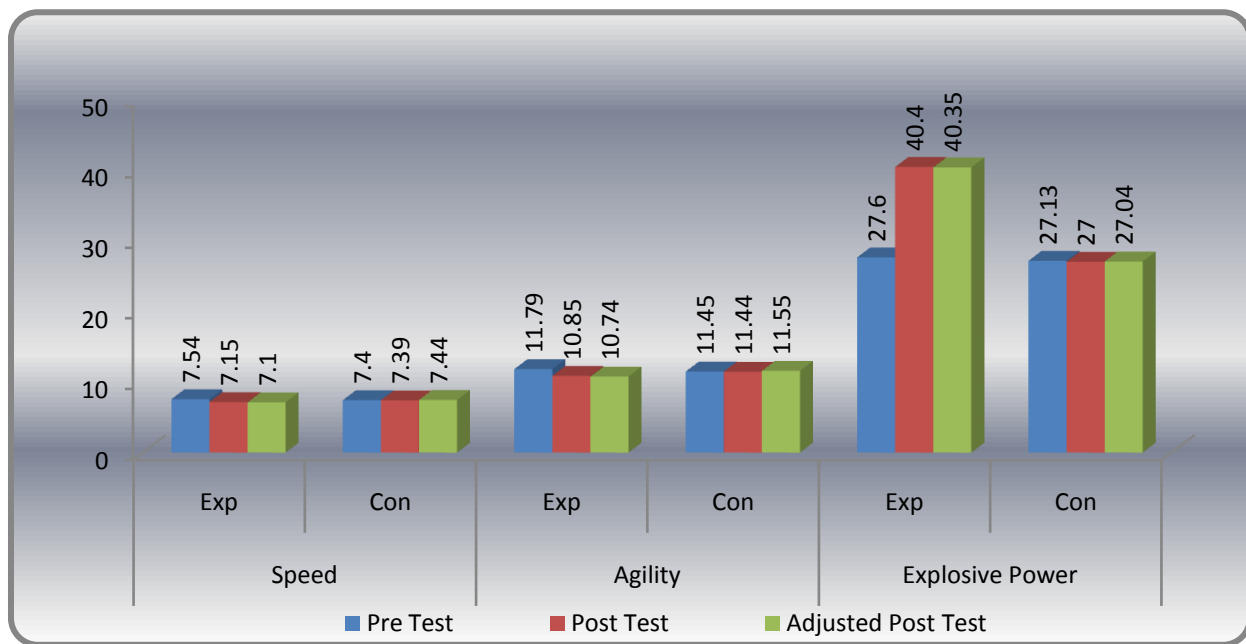
Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Speed	BG	0.81	1	0.81	54.93*
		WG	0.40	27	0.01	
2	Agility	BG	4.65	1	4.65	30.43*
		WG	4.12	27	0.15	
3	Explosive power	BG	1299.43	1	1299.43	113.13*
		WG	310.12	27	11.48	

* P < 0.05 Table F, df (1,28) (0.05) = 4.19

In table IV, the results of analysis of covariance of adjusted post test scores on speed (54.93), agility (30.43) and explosive power (113.13) were greater than

the table value of 4.19 indicating that it was significant for the degrees of freedom (1,28) at 0.05 level of confidence.

Figure I. Shows the Mean Values of Experimental and Control Groups on Selected Physical variables among College level football players



Conclusions

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions were drawn.

1. The result of the study reveals that there was a significant improvement in the experimental group on selected variables when compared to the control group after the completion of six weeks of aerobic interval training.
2. The aerobic interval training group has showed better performance on speed, agility and explosive power than the control group.

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6. Wisloff U, Stoylen A, Loennechen JP, et al. Superior cardiovascular effect of aerobic interval training versus moderate continuous training Table IV. Reported exercise training between discharge from the of rehabilitation center (4w) and 6m Group Incomplete registration No exercise training 3 times per week, moderate intensity >3 times per week, moderate and high intensity AIT (n = 23) 0 3 3 5 12 MCT (n = 25) 1 2 5 16 1 1036 Moholdt et al American Heart Journal December 2009in heart failure patients: a randomized study. *Circulation* 2007;115: 3086-94.