



EFFECT OF AEROBIC TRAINING ON SELECTED PHYSICAL PARAMETRES AMONG UNIVERSITY WOMEN FOOTBALLERS

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ABSTRACT

The purpose of the study was to investigate the effect of aerobic training on selected physical parameters among university women footballers. To facilitate the study, thirty women footballers from Periyar University, Salem, Tamilnadu were selected as subjects at random and their ages between 18 to 27 years. The subjects were divided into two equal groups. In this study, aerobic training exercises were given to experimental group for the period of 6 weeks. Endurance was tested by Cooper's 12 min run test and flexibility was tested by sit and reach test. The pre-tests were taken from the subjects before administrating the training. The subjects were involved with their respective training for a period of 6 weeks. At the end of the sixth weeks of the training post-tests were taken. The significant differences between the means of experimental group and control group for the pre-test and post-test scores were determined by paired t ratio. The level of significance was fixed at 0.05 level of confidence for the degree of freedom 14. Physical parameters of experimental group showed significant difference when compared to control group.

Keywords. Aerobic training, Endurance, Flexibility, Football.

INTRODUCTION

Aerobics is a form of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness (flexibility, muscular strength, and cardio-vascular fitness). It is usually performed to music and may be practiced in a group setting led by an instructor (fitness professional), although it can be done solo and without musical accompaniment. With the goal of preventing illness and promoting physical fitness, practitioners perform various routines comprising a number of different dance-like exercises. Formal aerobics classes are divided into different levels of intensity and complexity. Aerobics classes may allow participants to select their level of participation according to their fitness level. Many gyms offer a variety of aerobic classes. Each class is designed for a certain level of experience and taught by a certified instructor with a specialty area related to their particular class. Aerobic fitness not only determines performance in a wide range of activities, but it is also a health-related parameter. In a performance context, aerobic training aims to increase maximal oxygen uptake (VO₂max) or other indices of aerobic fitness (e.g. lactate / ventilator threshold, exercise efficiency). In children, it has been demonstrated that parameters such as cholesterol or fat mass are related to VO₂max. Consequently, for young people of low aerobic fitness, there are advantages to improve their aerobic power. In this population, short-term effects of training are expected in terms of performance or to reach health-related standards for aerobic fitness. Long-term effects of aerobic training

may also be expected. Some authors have reported that children, with a higher level of physical activity, or who have been trained during childhood, showed a higher level of physical activity and aerobic fitness in young adulthood.

Aerobic fitness can be related to many measured or estimated parameters obtained in various exercise conditions. As VO₂max is the most commonly used parameter to investigate the functional state of the oxygen transport system, the present review will only focus on this topic. In the majority of children, the absence of the oxygen uptake (VO₂) plateau at maximal exercise raises questions as to whether the values elicited are truly maximal. As a result of several studies it has become more usual and appropriate to define the highest VO₂ achieved during a test to voluntary exhaustion as peak VO₂ rather than VO₂max, which implies that a plateau in VO₂ has been demonstrated. However, many controversies exist between studies about the effects of training on children's peak VO₂. Longitudinal studies in children have shown that training had no effect on VO₂ before puberty. This suggests that there is a maturational threshold below which children are not able to increase their peak VO₂. However, some other authors reported positive training effects in prepubertal children. Discrepancies between studies seem, in part, due to different procedures in protocol design and training methods. Therefore, this review will examine how study design and training methods influence changes in peak VO₂, which result from aerobic exercise training in children and adolescents.

METHODOLOGY

The purpose of the study was to investigate the effect of aerobic training on selected physical parameters among university women footballers. To facilitate the study, thirty women footballers from Periyar University, Salem, Tamilnadu were selected as subjects at random and their ages between 18 to 27 years. The subjects were divided into two equal groups. In this study, aerobic training exercises were given to experimental group for the period of 6 weeks. Endurance was tested by Cooper’s

12 min run test and flexibility was tested by sit and reach test. The pre-tests were taken from the subjects before administrating the training. The subjects were involved with their respective training for a period of 6 weeks. At the end of the sixth weeks of the training post-tests were taken. The significant differences between the means of experimental group and control group for the pre-test and post-test scores were determined by paired t ratio. The level of significance was fixed at 0.05 level of confidence for the degree of freedom 14.

RESULTS

**TABLE I
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE ON ENDURANCE OF EXPERIMENTAL AND CONTROL GROUPS**

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	1933.86	1999.00	BG	31817.63	1	31817.63	2.45
			WG	362507.73	28	12946.70	
Post Test Mean	2331.93	1959.33	BG	1041230.70	1	1041230.70	114.49*
			WG	254626.26	28	9093.79	
Adjusted Post Mean	2332.33	1959.92	BG	951111.45	1	951111.45	100.90*
			WG	254505.29	27	9426.12	

* Significant at 0.05 level

Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value on endurance of experimental and control groups were 2332.33 and 1959.92 respectively. The obtained F-ratio of 100.90 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant

difference among experimental and control groups on endurance. The above table also indicates that both pre and post test means of experimental and control groups differ significantly. The pre, post and adjusted mean values of endurance of both experimental and control groups are graphically represented in the figure-I.

**FIGURE - I
SHOWS THE MEAN VALUES ON ENDURANCE OF AEROBIC TRAINING AND CONTROL GROUPS**

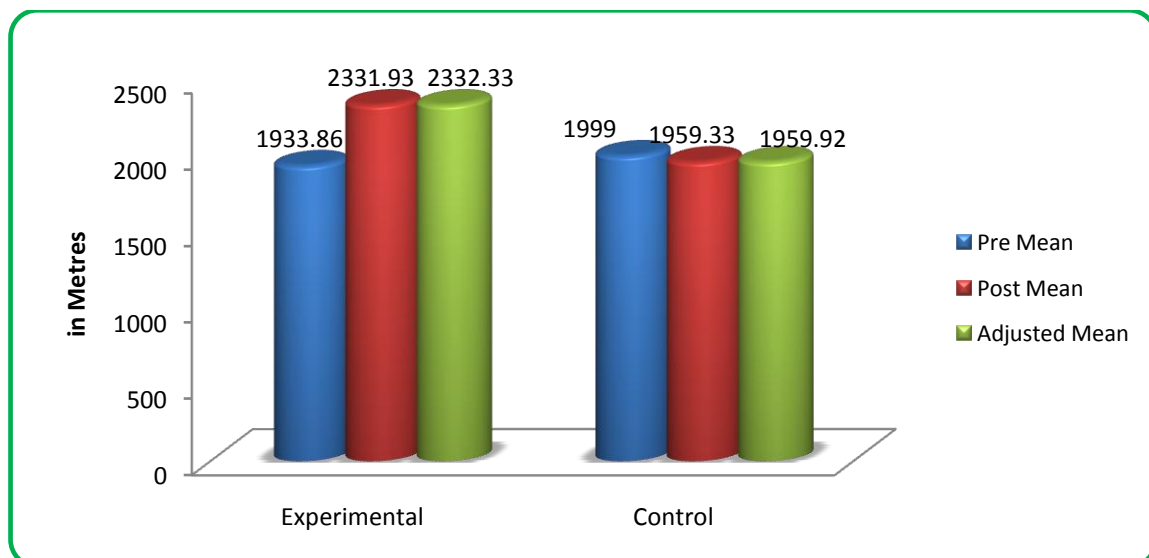


TABLE II
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE ON FLEXIBILITY OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	33.14	32.76	BG	1.08	1	1.08	0.03
			WG	790.11	28	28.21	
Post Test Mean	37.69	33.64	BG	122.81	1	122.816	7.46*
			WG	460.60	28	16.45	
Adjusted Post Mean	37.70	33.63	BG	124.05	1	124.05	7.31*
			WG	457.69	27	16.95	

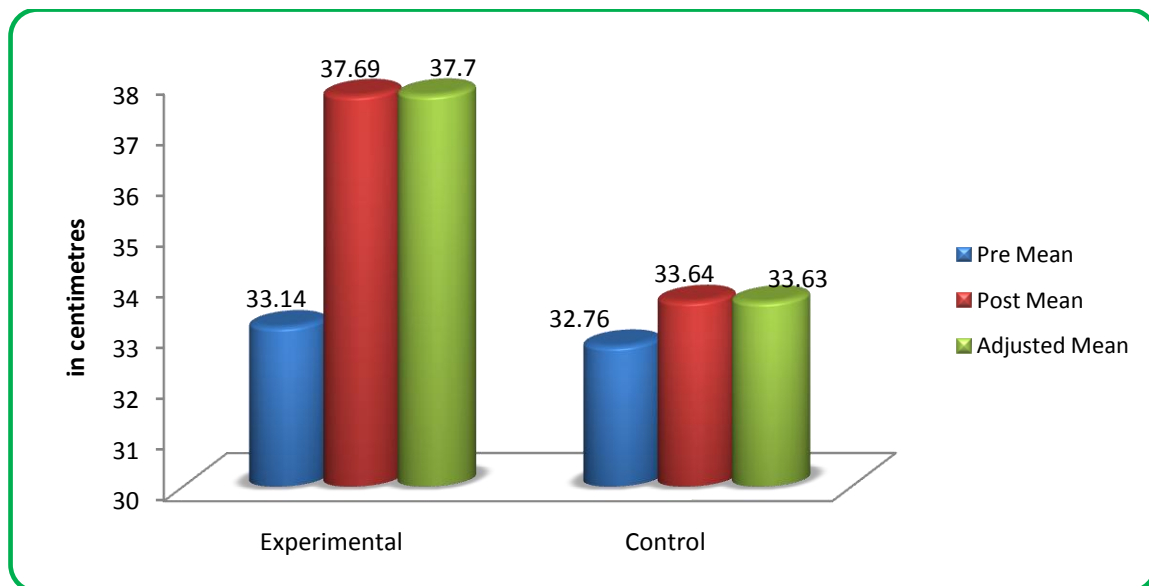
* Significant at 0.05 level

Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value of flexibility of experimental and control groups were 37.70 and 33.63 respectively. The obtained F-ratio of 7.31 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference

among experimental and control groups on flexibility. The above table also indicates that both pre and post test means of experimental and control groups also differ significantly. The pre, post and adjusted mean values of flexibility of both control and experimental groups are graphically represented in the figure-II.

FIGURE II
SHOWS THE MEAN VALUES ON FLEXIBILITY OF AEROBIC TRAINING AND CONTROL GROUPS



CONCLUSION

- Physical parameters of experimental group showed significant difference when compared to control group.

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