

## **Influence of 8 Weeks of Step Aerobics Training On Cardio Vascular Endurance and Explosive Power Among Adult Men**

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### **ABSTRACT**

*The purpose study was to investigate the influence on cardiovascular endurance and explosive power by practicing the step aerobics training on college men for the period of 8 weeks. To achieve this purpose 30 adult men were randomly selected from Health clubs in Cheyyar as subjects. They were divided into two groups. The group I was considered as experimental group and group II was considered as control group. the experimental group - I was given step aerobics training for five days per week and the control group was not given any exercise. The experimental group was given training for the period of 8 weeks of step aerobics training. The criterion variables were chosen namely cardiovascular endurance and explosive power for this study. All the dependent variables were assessed before and after the training period of 8 weeks. The collected data on selected parameters due to effect of step aerobics training was analyzed in order to find out the significant improvement if any, 't' test was applied. 0.05 level of confidence was fixed to test the level of significance. The results of the study delivered that the cardiovascular endurance and explosive power were significantly improved due to the influence of step aerobics training for the period of 8 weeks.*

*Keywords: Step aerobics training, Cardiovascular endurance and explosive power*

### **INTRODUCTION**

Step aerobics (SA) has been viewed as a usual and popular workout mode among females on account that the 1980s. Step aerobics training involves stepping up and down on a single bench in choreographed, group-led moves to cadenced musical arrangements. The fine results of SA coaching on body composition have been shown in young (Kravitz, et al, 1993) and older adults (Chien, 2000). Step aerobics has increased lower body strength in older adults, which can be attributed to the repetitive motion of stepping up and down on a bench (Mori et al,2006)). Step aerobics has increased top body energy as well, due to the fact of its choreographies that involve dynamic actions of the palms (Kravitz, et al, 1993). In addition, improvements in stability and agility have been shown in middle-aged and older adults because of the attribute movements used in SA choreographies (Nnodim, 2006). Improvements in flexibility have been done via the range of movement required to function the actions of SA choreographies and stretching exercises (Nelson, et al 2007). Finally, due to the fact, SA has viewed as a predominantly cardio exercising modality, the majority of investigations have evaluated and

shown its really useful effect on cardiorespiratory fitness (CRF).

Aerobics is a form of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines. The goal is to improve all elements of fitness. Step aerobics is a method which allows us to do aerobics exercises for the purpose of getting a cardio-respiratory reaction from the concept of lifting your body weight. While this concept has been around since the 1950s, it was not until the 1980s that step aerobics came into being in an organized fitness setting and, thus, mainstream popularity. An entrepreneurial woman by the name of Gin Miller is credited with bringing aerobic steps to the masses when she finally succeeded in getting Reebok to listen to her idea of innovating step aerobics. Step aerobics is a form of aerobic exercise that uses a 4- to 12-inch platform or step. It is a low-impact form of exercise that is less stressful on the joints than higher impact exercises such as jogging or running. Today, step aerobics is a very popular training method in many fitness centers around the country, and classes for this exercise method are offered where there is a group exercise program.

However, there have been few reports that have examined the influence of aerobic training on motor fitness parameters of college men. We developed an aerobics training program for college men using a bench stepping exercise. The bench stepping exercise is a cost-effective, user-friendly, and practical exercise mode. We have already confirmed that this exercise program can improve the physical fitness levels and the health outcomes in the players representing various sports and games. We, therefore, hypothesized that this bench stepping exercise program can improve the cardiovascular endurance and explosive power of college men.

## **METHODOLOGY**

To achieve this purpose 30 adult men were randomly selected from fitness clubs at Cheyyar, Tiruvannamalai district, Tamilnadu as subjects. They were experienced as beginners to the step aerobic exercise divided into two groups. The group I was considered as an experimental group and group II was considered as a control group. The investigator did not make any attempt to equate the group. The control group was not given any exercise and the experimental group was given step aerobics training for five days per week. The experimental group was given training for a period of 8 weeks of step aerobics training. They understood the purpose of the study, all procedures involved, voluntarily accepted to undergo all the training procedures. The evaluated parameters were cardiovascular endurance (Cooper's 12 min run and walk), and explosive power (standing broad jump). The parameters were measured before and after the step aerobics training program. The effects of the training program were examined.

## **TRAINING PROGRAMME**

The training program was lasted for 45 minutes per session in a day, 5 days a week for a period of eight weeks duration. These 45 minutes included 5 minutes warm-up and 5 minutes warm down the remaining 35 minutes allotted for the training program. Every two weeks of training 5% of intensity was increased from 65% to 80% of the workload. The 8th week was maintained with 75% to platen the load for avoiding the overload. The training load was increased from the maximum working capacity of the subjects during the pilot study.

**Table – 1**

**Weekly schedule of Step aerobic exercise for the experimental group**  
(Intensity will be varied 65% to 80% with the change of 5% in every weeks)

<b>Weeks</b>	<b>Exercises</b>	<b>Intensity (MHR)</b>
Week 1	Basic step, Corner knee, Repeater knee, t-step, over the top	65%
Week 2	Repeater knee, v-step, straddle down, i-step, split step,	65%
Week 3	Corner knee, Lunges, Over the top, t-step, repeater knee	70%
Week 4	Split step, I-step, t-step, straddle down, lunges	70%
Week 5	Corner knee, v-step, repeater knee, over the top, split step	75%
Week 6	Lunges, Straddle down, Corner knee, t-step, L-step	75%
Week 7	Repeater knee, v-step, straddle down, i-step, split step	80%
Week 8	Lunges, Straddle down, Corner knee, t-step, L-step	75%

### **Collection of data and statistical analysis**

The collected data on selected fitness parameters due to effect of step aerobics training was analyzed by computing mean and standard deviation. In order to find out the significant improvement if any, ‘t’ test was applied. 0.05 level of confidence was fixed to test the level of significance.

### **Data Analysis and Results of the Study**

**Table – 2**

**Summary of mean and ‘t’ test for the pre and post tests on cardiovascular endurance and explosive power of control and experimental groups**

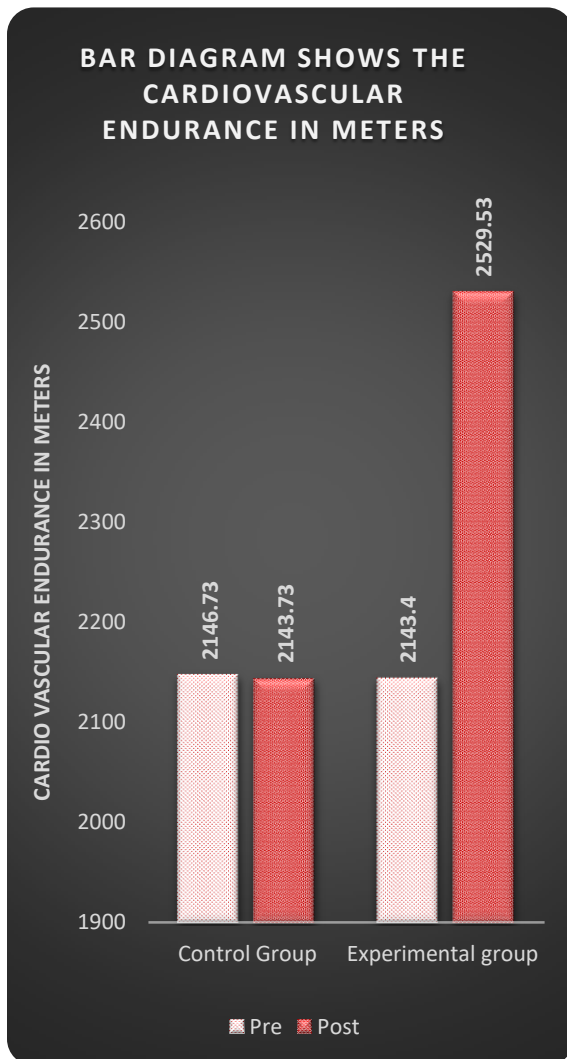
<b>Variables</b>	<b>Groups</b>	<b>Test</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Mean difference</b>	<b>‘t’ RATIO</b>
<b>Cardiovascular Endurance</b>	<b>Control group</b>	Pre	2146.73	64.13	3	<b>0.17</b>
		Post	2143.73	36.07		
	<b>Experimental group</b>	Pre	2143.40	37.89	386.13	<b>22.48*</b>
		Post	2529.53	46.45		
<b>Explosive power</b>	<b>Control group</b>	Pre	2.09	0.033	0.01	<b>0.94</b>
		Post	2.10	0.04		
	<b>Experimental group</b>	Pre	2.10	0.03	0.38	<b>9.87*</b>
		Post	2.48	0.14		

\*Significant at 0.05 level of confidence for the degrees of freedom (1, 14), 2.145

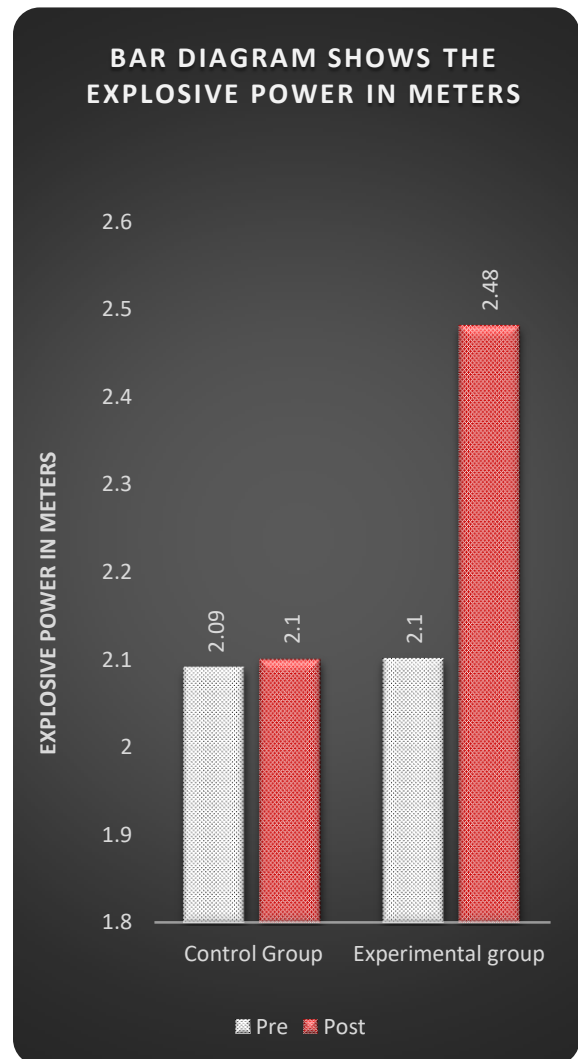
The above table -1 reveals the computation of the ‘t’ ratio between mean of pretest and posttest of control and experimental groups on cardiovascular endurance and explosive power of adult men.

The mean values of pre and posttest of the control group and experimental group on cardiovascular endurance were 2146.73 and 2143.73, 2143.40, and 2529.53 respectively. The mean values of the control group and experimental group on explosive power 2.09 and 2.10, 2.10, and 2.48 respectively. Further, the table revealed that the obtained 't' ratio of the control group was 0.17 (Cardiovascular endurance) and 0.94 (Explosive power) was lesser than the required table value 2.145. It was found statistically not significant for the degree of freedom 1, and 14 at 0.05 level of confidence. It was also inferred that the obtained 't' ratio of the experimental group was 22.4 (Cardiovascular endurance) and 9.87 (Explosive power) were greater than the required table value of 2.145. It was found statistically significant for the degree of freedom 1 and 14 at 0.05 level of confidence.

The results clearly indicated that the cardiovascular endurance and explosive power of the experimental group improved due to the influence of 8 weeks of step aerobics training program. The same was represented as diagrams 1 & 2.



**Diagram – 1**



**Diagram – 2**

### **Discussions on Findings**

The present study experimented with the effect of step aerobics training on cardiovascular endurance and explosive power of adult men. The result of this study indicated that step aerobics training improved cardiovascular endurance and explosive power.

The findings of the present study the step aerobic training improved cardiorespiratory endurance by 18% from the baseline to the post-test. It means that the 12 weeks of Step aerobic dance training had similarities with the findings of the investigations referred to in this study. Kostic, et.al, (2005) indicated that cardiovascular fitness was improved by a step aerobic dance program. Further, they suggested that if aerobic dance practiced over a longer period of time with training sessions three times a week for a shorter period of time on condition that the intensity of the exercise remains the same.

Further, the finding of the present study the 12 weeks of step aerobics training resulted in the improvement of 18% on leg explosive power of adult men. The result of the above was accepted with the research findings of Peschar, et.al, (1991) gives that individuals can improve their muscular strength through the aerobic dance program. Arslan (2011) reported that the step aerobic dance program proved to be a useful exercise modality for weight loss and in terms of body composition (Saravanan E, 2018). Williams, et.al, (1986) reported that the 12 weeks aerobic dance program was successful in promptly beneficial changes in cardiorespiratory fitness and body composition. The results of the present study indicated that the step aerobics training program is an effective method to improve cardiovascular endurance and explosive power of young adult men.

### **Conclusions**

In light of the results of the study and the limits of the intermediate level men sample and the framework of statistical treatments used, the following conclusions were made. It was concluded that eight weeks of step aerobics training program produced significant improvement in the cardiovascular endurance of men. The eight weeks of step aerobics training program produced significant improvement in the explosive power of young adult men.

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