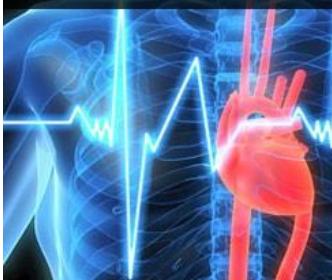


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**Renjith TA**

Research Scholar, School of physical Education and sports Science Mahatma Gandhi University, Kottayam, Kerala, India

**Dr. Kishor Kumar BS**

Associate Professor, Sahodaran Ayyappan Smaraka S.N.D.P. Yogam College Konni, Kerala, India

## Dissect the acute effect of aerobic dance on cardiovascular endurance among young women

**Renjith TA and Dr. Kishor Kumar BS**

### Abstract

The objective of this research was to dissect the acute effect of aerobic dance on cardiovascular Endurance among Young Women. Forty (N =40) women students aged between 19 to 23 randomly selected from Kerala University of Fisheries and Ocean Studies Kochi as the subjects of this study. The subjects were divided into two groups of experimental (EXP) or a control (CON) group of twenty each (n=20). Experimental group underwent Aerobic dance training program. The duration of the training period is restricted to 12 week and the number of sessions per week will be confined to 4. Control group did not take part in any kind of the treatment stimuli. Pre test and post test were done before and after the training period. Cardiovascular Endurance was the criterion variable. It was measured by Tuttle pulse ratio test methods. Data were analyzed by using the statistical package program. Descriptive statistics were used to determine the mean, standard deviation values of the groups. "Paired t-test" were used for comparisons. Results were evaluated according to significances level of "0.05". The results of the study showed that there were significant improvements in Cardiovascular Endurance due to the twelve week Aerobic Dance training applied to young women. It is recommended to increase the objectivity by considering these issues in future researches.

**Keywords:** Aerobic dance, cardiovascular endurance, Tuttle pulse ratio test and women

### 1. Introduction

Regular daily physical activity, along with a healthy diet and not smoking, is a major component in the prevention of chronic disease. Available experience and scientific evidence show that regular physical activity provides people, both male and female, of any conditions including disabilities with a wide range of physical, social and mental health benefits [1].

Aerobic dance movements have traditionally been developed as an aerobic activity to improve physical fitness and performance and to improve cardiovascular fitness. Low-impact aerobic dance exercise has been well adapted to keep and improve health in a wide range of the population. Low impact aerobic dance requires participants to keep one foot on the floor during their dance workout, resulting in fewer jumping and bouncing movements. Therefore, the participants reduce the amount of impact shock thought to be associated with injuries in traditional aerobic dance. Low-impact aerobic dance exercise has been recommended as a beneficial exercise to maintain health, especially in individuals with low fitness or in the elderly population. Aerobic exercises in music or dance aerobics have become increasingly common in the last few years of the 20th century, notably among women. Aerobic dance movements have traditionally been developed as an aerobic activity to minimize body composition and enhance physical fitness and performance [2].

The aerobic Dancing effect depends on the body's ability to a) rapidly breathe large amount of air b) forcefully deliver large volume of blood, and c) effectively deliver oxygen to all parts of the body. Aerobic dancing is the apt training program to build up fitness of an individual especially girls. It especially involves the continuous rhythmic movement done with music can also be done in Indoor, which helps the girls to improve their physical fitness [3].

Sedentary lifestyles pose a risk to the health of individuals as they may lead to an improvement or development in the risk of hypertension, obesity, muscle weakness, posture abnormalities, diabetes and coronary heart disease (CHD) in middle-aged people. Regular physical exercise leads to substantial changes in the prevention of health-related risks [4].

### Corresponding Author:

**Renjith TA**

Research scholar, School of physical Education and sports Science Mahatma Gandhi University, Kottayam, Kerala, India

Fitness for living in the home or on the farm, in the office or in the factory or in the workplace or in some kind of service means independence from sickness, adequate stamina, agility and other ability to meet the demands of everyday living. Going physical exercise on a normal basis leads to optimal fitness and quality of life. Life styles can be changed to improve health and wellness by physical exercise. Aerobic activity strengthens the heart, lungs and all muscle workgroups and creates valuable improvements in the body [5].

## 2. Materials and Method

### 2.1 Participants

Forty (N =40) women students randomly selected from Kerala University of Fisheries and Ocean Studies Kochi, voluntarily participated in the study. The participants were divided into two equal groups as experimental (Aerobic dance) group (n=20) and control group (n=20). Their age ranged (18 to 23) the mean age of the athletes was  $19.16 \pm 0.37$  years. The groups were informed before the study and "Informed Consent Form" was obtained from each of them and their participation was ensured.

### 2.2 Materials

Measurement of cardiovascular Endurance (Tuttle pulse ratio-step test) Equipment's - A 13-inch high stool, metronome or tape recorder and a stop watch

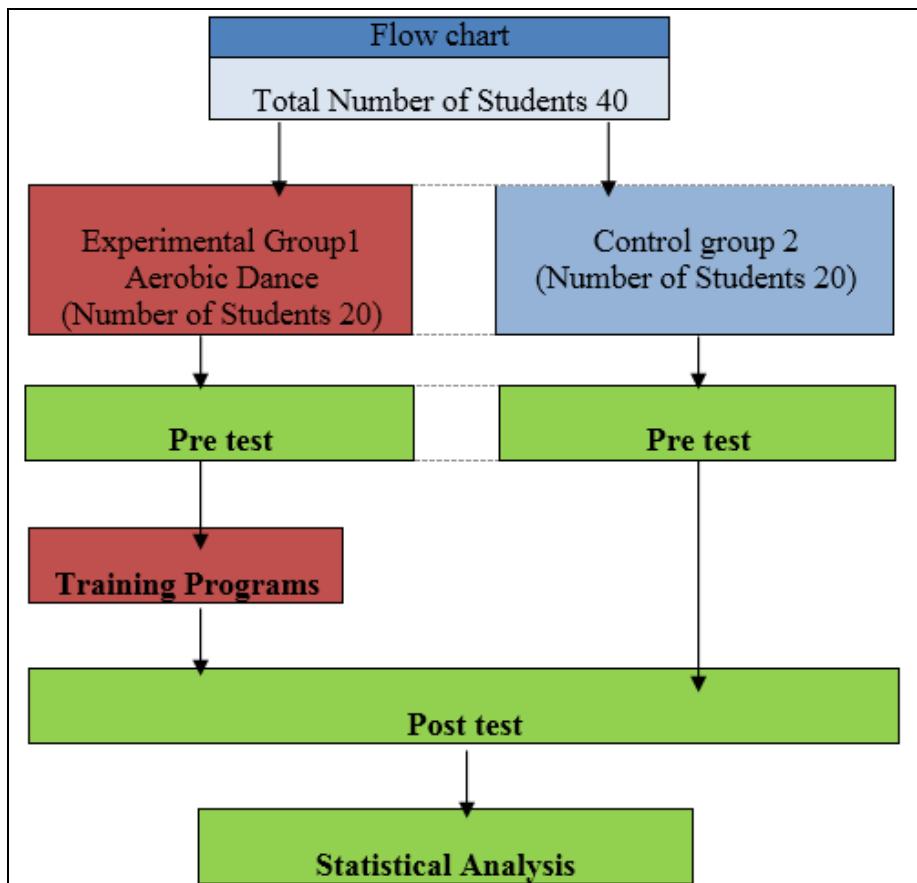
The resting pulse rate of the subject counted one minute in a sitting posture. It is assured that subject has not performed any exercise at least one hour before the count. After the resting pulse count, the subject asked to step up and down on the 13 inch high stool at the rate of complete 30 steps per minute. The subject is assisted to keep the proper pace by announcing four counts to one complete step up and down. In order to assist the subject either a tape recorder counting 1-2-3-4 for each step at the rate of 30 step-ups for one minute or metronome set a cadence of  $30 \times 4 = 120$  per minute should be used for test administration. After 30step-ups completed in one minute the subject asked to sit down. The pulse rate is counted immediately and continuously for two minute. A pulse ratio is computed by dividing the after exercise two minute pulse counted by one minute resting pulse count. This ratio is known as the Tuttle Pulse Ratio score which is the direct indicator of one's cardiovascular efficiency but in the inverse order that is larger the ratio, lower is the efficiency [6].

### 2.3 Procedure

A 12 weeks Aerobic dance training program 4 days a week 60 minutes a day was given to Experimental group (Aerobic dance) and the control group did not involve in any type of training. "Tuttle pulse ratio test" was used to determine Cardiovascular Endurance in both groups as at the beginning of the training period "pre-test" and "post-test" at the end.

**Table 1:** Aerobic Dance Training

1	Practice	1 to 3 weeks	3 to 6 weeks	6 to 9 weeks	9 to 12 weeks
2	Warm-up	15 minute	15 minute	15 minute	15 minute
3	Aerobics	35 minute	35 minute	35 minute	35 minute
4	Warm down	10 minute	10 minute	10 minute	10 minute
5	Intensity of work	60 to 65%	65 to 70%	70 to 75%	75 to 80%



**Fig 1:** The flow cart

### 3. Results

**Table 2:** The mean, standard deviation and t-test scores of Cardiovascular Endurance on Aerobic dance groups

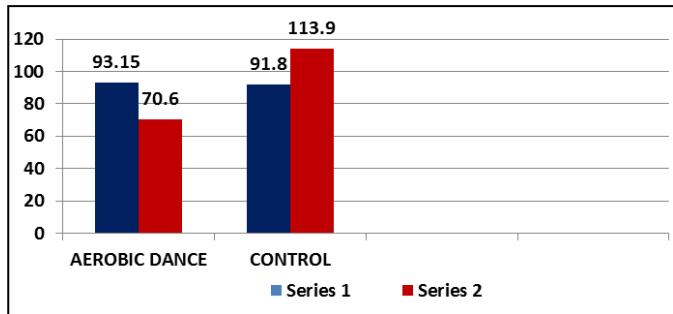
Variable	test	N	Mean	Std. Deviation	t value	df	Sig
Cardiovascular Endurance	Pre CRE	20	93.150	19.0988			
Cardiovascular Endurance	Post CRE	20	70.600	13.4571	5.360	19	0.000

\*Significant at .05 level

**Table 3:** The Mean standard deviation and t-test score of Cardiovascular Endurance on Control group

Variable	test	N	Mean	Std. Deviation	t value	df	Sig
Cardiovascular Endurance	Pre CRE	20	91.800	34.3857			
Cardiovascular Endurance	Post CRE	20	113.900	22.2826	-3.490	19	0.212

\*Significant at .05 level



**Fig 2:** Graphical presentation Mean value on cardiovascular endurance of Aerobic dance and control group

### 4. Discussion

The above table 2 shows that the post-test mean value 70.600 of the experimental group is lesser than the pretest mean value of 93.150. The 't' value of the experimental group is 5.360 with 19 degree of freedom and p value is 0.00. The obtained p value is lesser than the level of significant value of 0.05 for the cardiovascular endurance. It shows that there is significant improvement between pre and post-test in Cardiovascular Endurance among young women in aerobic dance group.

The above table 3 shows that the post-test mean value of 113.900 control group is greater than the pre-test mean value of 91.800. The 't' value of the control group is -3.490 with 19 degree of freedom and p value is 0.212. The obtained p value is higher than the level of significant value 0.05 for the cardiovascular endurance due to the effect of 12 weeks Aerobic dance session. It shows that there is no significant improvement between pre and post-test in Cardiovascular Endurance among young women in control group.

### 5. Conclusions

The findings of this research suggest that aerobic dance exercise increased cardiovascular endurance in young women. This study results promote the use of aerobic dance in sedentary women for increasing cardiovascular endurance. Initially, they will begin with light programs and progress on to more rigorous programs.

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