



Effect Of Aerobic Dance Training On Maximal Oxygen Uptake(Vo_2max) Of College Women

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Abstract:

The study was designed to investigate the “Effect of aerobic dance training on maximum oxygen uptake of College women”. To achieve this purpose 30 college women were randomly selected from Kovai Kalaimagal College of Arts and Science, Coimbatore as subjects. They were divided into two groups. The group I was considered as control group and group II was considered as experimental group. The investigator did not made any attempt to equate the group. The control group was not given any exercise and the experimental group was given aerobic dance training for eight weeks. The $Vo_2 max$ was assessed before and after the training period of 8 weeks. The collected data on Vo_2max due to effect of aerobic dance 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. The study revealed that the $vo_2 max$ was significantly improved due to the influence of aerobic dance training.

Key words: 1.Aerobic Dance training, 2. $Vo_2 max$

1.Introduction

College is a time of great change for young adults. One of the most important decisions a college student may make is how to incorporate physical activity into a busy lifestyle (Charles, 2011). Physical activity improves adults' fitness and lowers their risk of obesity and now a government review of research shows that children who take breaks from class work to be physically active during the school day are often better able to concentrate on their school work and may do better on standardized tests.

In many schools and colleges, physical education classes and recess have been squeezed out because of increasing educational demands and tough financial times. Some shortsighted people thought that cutting back on time spent on physical education to spend more time drilling for tests would improve test scores. Life will not be life without physical activities. Through physical activities alone people were able to survive in this world. Man needs vigorous exercises for growth and development. Proper growth and maintenance of good health, participation in daily physical activities is an indispensable one. Women who participate in regular physical activity sleep more and experience a better quality of sleep than women who are sedentary. (Niemen, 2005)

Aerobic exercise refers to exercise that involves or improves oxygen consumption by the body. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy-generating process. (Concise Oxford English Dictionary, 2001)

"Aerobic dance" is a particular form of aerobic exercise. Aerobic dance classes generally involve rapid stepping patterns, performed to music with cues provided by an instructor. This type of aerobic activity became quite popular in the United States after the 1970 publication of *The New Aerobics* by Dr. Kenneth H. Cooper, and went through a brief period of intense popularity in the 1980s, when many celebrities produced videos or created television shows promoting this type of aerobic exercise.

Fitness can be measured by the volume of oxygen consumed while exercising at maximum capacity. VO_2max is the maximum amount of oxygen in milliliters, one can use in one minute per kilogram of body weight. Those who are fit have higher vo_2max values and can exercise more intensely than those who are not as well conditioned. Numerous studies show that vo_2max can be increased by working out at an intensity that raises heart rate to between 65 and 85% of its maximum for at least 20 minutes three to five times a week. A mean value of vo_2max for male athletes is about 3.5 liters / minute and for female athletes it is about 2.7 liters / minute. (Cooper, 1969)

2.Related Literature

Knutzen (2002) examined the effect of a two- and three-day-per week aerobic dance program on the maximal oxygen uptake ($VO_2\text{max}$) of 18 college women. The women in the three-day-per week classes increased their $VO_2\text{ max}$ by 10%. The women in the two-day-per week classes did not increase their $VO_2\text{ max}$ significantly. These results suggest that aerobic dance classes should be held three days per week in order to obtain an increase in $VO_2\text{ max}$ of the participants.

McCord *et al.*, (1989) examined the effects of a 12 week program of low impact aerobic dance conditioning on $VO_2\text{ max}$, submaximal heart rates and body composition of college-aged women. Sixteen women exercised three times per week for approximately 45 minutes per session at 75-85% of their heart rate reserve. $VO_2\text{ max}$ was measured by indirect calorimetry using a treadmill protocol. Submaximal heart rates were measured by electrocardiography, and body fat was assessed by hydrostatic weight. All testing was conducted within one week pre- and post-training. Training sessions consisted of a 5-10 minute warm up, 30-35 minute low impact aerobic dance segment and a 5 minute cool down. Post test results revealed a small (7%), but significant increase in $VO_2\text{ max}$ (pre: 38.3 ml/kg/min; post: 41.3 ml/kg/min, $X \pm SD$, p less than 0.05). Submaximal heart rates at minutes 2-3, 3-4 and 4-5 of the graded exercise test decreased significantly. Body fat decreased from 25 \pm 6.8% to 21 \pm 6.3% (p less than 0.01) with no post training change in body weight. It was concluded that low impact aerobic dance is as effective as other endurance training regimens in improving cardiovascular fitness and decreasing body fat.

3.Methodology

To achieve this purpose 30 college women were randomly selected from Kovai Kalaimagal College of Arts and Science, Coimbatore as subjects. They were divided into two groups. The group I

was considered as control group and group II was considered as experimental group. The investigator did not made any attempt to equate the group. The control group was not given any exercise and the experimental group was given aerobic dance training for five days per week. The experimental group was given training for the period of 8 weeks of aerobic dance training. The maximal oxygen uptake($vo_2\text{max}$) was assessed before and

after the training period of 8 weeks. The collected data 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.

4.Results And Discussions

| Variable | Group | Test | Mean | Standard Deviation | Mean Difference | 't' ratio |
|---------------------|--------------|------|-------|--------------------|-----------------|-----------|
| Vo ₂ max | Control | Pre | 21.63 | 5.03 | 0.52 | 1.14 |
| | | post | 21.11 | 4.89 | | |
| | Experimental | Pre | 22.15 | 4.82 | 2.93 | 19.22* |
| | | post | 25.08 | 4.66 | | |

*Table 1: Summary Of Mean And 't' Test For The Pre And Post Tests On Vo₂max
Significant at 0.05 level of confidence (2.145)

Table reveals the computation of 't' ratio between mean of pretest and posttest of control and experimental groups on vo₂max of college women. The mean values of pre and posttest on control group were 21.63 and 21.11. Since the obtained 't' ratio 1.14 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.

The mean values of pre and posttest of experimental group were 22.15 and 25.08 respectively. Since the obtained 't' ratio 19.22 was greater than the required table value 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 the maximal oxygen uptake of experimental group improved due to the influence of aerobic dance training programme.

5.Conclusion

Based on the result, the following conclusion has been arrived:

There was significant improvement in maximal oxygen uptake due to the influence of aerobic dance training on college women.

6.Reference

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