

EFFECT INTENSITY CONTROL OF AEROBIC DANCE ON CARDIAC FUNCTION

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ABSTRACT

Cardiac function depends on resting heart rate, Blood pressure and efficiency of the lungs. And this is a best indicator of health. The purpose of this study was to find out the effect of Intensity control Aerobic Dance on Cardiac Function. To achieve the purpose, sixty (N=60, age 17±1.3, BMI 22± 2) school students were purposively selected from Jaffna, Sri Lanka, and divided into Group I (Aerobic Dance [(AD) (n=30, practice Aerobic Dance 30 to 60 min / day/ 2 to 3 day / week over the period of eight weeks)], Group II (n=30) Acted as control. The initial intensity was fixed at 60% and 5 % rule was applied to increase intensity in every two weeks. Subjects were measured Resting Heart Rate (RHR) using Palpating the radial artery for full one minute for each subject and blood pressure [Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP)] using Standardized sphygmomanometer and stethoscope. Before taking heart rate the subjects were asked to lie down in the carpet floor and relax. The resting heart rate and blood pressure were taken during early morning hours the collected data were statistically treated by using paired – samples 'T' test, 0.05 level of confidence was fixed to test the significance. The result shows that intensity controlled aerobic dance positively influence on RHR, SBP, and DBP than control group. Hence it was concluded that, any form of intensity controlled continues exercise may enhance cardiac functioning status in respect to RHR, SBP, and DBP. From the conclusion it was recommended that exercise in a submaximal work rate can leads to better cardiac function.

Key words: RHR, SBP, DBP, Aerobic Dance

INTRODUCTION

The urge to move appears to be genetic, beginning in and continuing throughout prenatal and neonatal development. At birth, patterns of movement are in the form of primitive reflexes that are designed to guarantee the infants' survival. (Piaget, 1972, 1990). Movement is an essential human characteristic. It is happening everywhere at all times; it is a fundamental fact of life. Every dance, no matter what style, has something in common.

Dance is an art form that generally refers to movement of the body, usually rhythmic and to music, used as a form of expression. The Dance movements may be without significance in themselves, such as in classic dance and folk dance. In the early 1920s, dance studies began to be considered an academic discipline. Today these studies are an integral part of many universities' arts and humanities programs. By the late 20th century the recognition of practical knowledge as equal to academic knowledge lead to the emergence of

practice research and practice as research. The heart rate is one of the simplest and most informative of the cardiovascular parameters. Heart rate reflects the amount of work. The heart must do to meet the increased demands of the body when engaged in activity.

Prolonged endurance type of activity increases the size of the left ventricle with little change in ventricle wall thickness. This will increase in stroke volume therefore the cardiac function will be effective. Dance is a unique form of movement one that inspires creativity, motivation, self-discipline, and self-awareness. It is more than a mere physical movement, dance is aesthetic. Through dance, movement is transformed into a purposeful phrase of action that encompasses physicality, emotion, and cognition. Dance uses "the movement of the body in its reactions to the environment" (Martin, 1965).

Aerobic dance exercise (ADE) is considered by many as form of exercise, but various aerobic dance steps originated from the choreography of dance.

Started in the late 1960s, aerobic dance exercise is calisthenics, step and movement to music performed to increase the physical level of the participant (cardiorespiratory fitness, muscular strength and flexibility). Hence the purpose of the study was to find out the effect of intensity control aerobic dance on cardiac function.

METHODS

To achieve the purpose, sixty (N=60, age 17 to 19, BMI 22± 2) school students were purposively selected from Jaffna, Sri Lanka, and divided into Group I(Aerobic Dance [(AD)(n=30, practice Aerobic Dance 30 to 60 min / day/ 2 to 3 day / week over the period of eight weeks)], Group II (n=30)

Acted as control. The initial intensity was fixed at 60% and 5 % rule was applied to increase intensity in every two weeks. Subjects were measured Resting Heart Rate (RHR) using Palpating the radial artery for full one minute for each subject and blood pressure [Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP)] using Standardized sphygmomanometer and stethoscope. Before taking heart rate the subjects were asked to lie down in the carpet floor and relax. The resting heart rate and blood pressure were taken during early morning hours the collected data were statistically treated by using paired – samples ‘T’ test, 0.05 level of confidence was fixed to test the significance.

RESULTS

COMPARISON OF CARDIAC FUNCTION BETWEEN AEROBIC DANCE AND CONTROL GROUP.

Variable	Group		mean	SD	SE	‘T’
RHR	Aerobic	Pre	80.83	2.0	0.36	7.30*
		Post	73.47	5.08	0.93	
	Control	Pre	79.4	2.41	0.44	2.56
		post	79.0	2.61	0.48	
SBP	Aerobic	pre	127.30	4.46	0.81	4.36*
		Post	122.67	3.89	0.71	
	Control	pre	125.23	5.19	0.94	2.26
		post	122.67	3.88	0.70	
DBP	Aerobic	pre	84.80	2.12	0.48	6.74*
		Post	80.87	2.08	0.43	
	Control	Pre	83.37	2.66	0.48	2.62
		post	81.40	2.37	0.43	

*Significant (1,29)= 2.76

The result shows that aerobic dancers were better on RHR, SBP, and DBP. Hence it was concluded that, intensity control aerobic dancers have Lower RHR, SBP, and DBP than control group.

DISCUSSIONS

It may indicate the associated dance training out comes could be affected by such difference in duration, intensity and frequency of dance they undergone. In the present study the aerobic dancers were reduced post training heart rate (8 b/m) compare to pre training. So the results reveals that any type of continues training increases stroke volume, therefore

the resting heart has been reduced within short period of time. Also in the present study subjects were selected sedentary lifestyle and they were not involved any physical activities. So the training might be effective on RHR, SBP and DBP.

The literature indicates that changes in cardiorespiratory endurance, VO₂ max are directly related to the subject’s initial fitness level and the

programme. Some aerobic type of activities, there is a close association with VO_2 max (Hemple and wells, 1985). It has been shown that arm work performed above the head produces a higher VO_2 max than the work performed below head level, due to an increased sympathetic tone (Parker et-al 1989). According to Hamilton et.al (1989) aerobic dance and circuit training can be intense enough to promote aerobic capacity. So endurance type of activity may be a valued reason for increasing end diastolic volume and being a contributing factor to increase stroke volume and decrease resting heart rate.

In another study improvement in cardiovascular fitness is related to the mode, frequency, duration, intensity, and rate of progression of exercise (Kirkendall DT & Calabrese LH-1983). The data suggest that dance as an activity for promoting fitness and will improve aerobic and physical working capacity. Also venous return is another factor which

directly involve in end diastolic volume, and pressure of the arteries. In the present investigation, the same trend was observed. The Aerobic Dancing group has lower resting heart rate (RHR) and blood pressure (BP) than the control group.

CONCLUSIONS

From the results it was clear that, Aerobic Dancers were better than Control group on cardiac function. Hence it was concluded that any form of intensity controlled continues exercise may enhance cardiac functioning status in respect to RHR, SBP, and DBP

RECOMMENDATION

Aerobic dance will be recommended to improve and maintain good cardiac function. Further, this type of dance training can be included in transitional period for sports peoples to maintain aerobic power aswell as submaximal training ability.

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