



EFFECT OF AEROBIC DANCE ON SELECTED PHYSIOLOGICAL VARIABLES AMONG COLLEGE STUDENTS

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Abstract

The effects of aerobic dance were investigated on the physiological variables of college students. The experimental group was made up 30 subjects, and the control group also numbered 30 subjects. The experimental program of the aerobic dance lasted for a period of 8 weeks. The data were analysed with Analysis of Covariance (ANCOVA). This study confirmed previous conclusions about significant positive influence of the aerobic dance trainings on the changes in the physiological variables, namely, resting pulse rate, breath holding, vital capacity and respiratory rate of college students.

Introduction:

McInman & Berger (1993) examined the effects of aerobic dance participation on self-concept and mood of university students and found significant positive changes for aerobic dance participants on specific dimensions of mood as well as self-concept. According to Kosti , uraškovi , Mileti , & Mikala ki (2006) aerobic dance demands a group organization of the exercise and accompanying music of a certain tempo, rhythm and dynamics. The benefits of aerobic exercise include improved circulation and respiration; reduced risk of heart diseases; improved fat metabolism and reduced body weight (fat free body mass); strengthened bones, ligaments and tendons; personality changes like enhanced self-concept and body image and emotional stability. The increased capacity and adaptability associated with aerobic fitness can add life to your years, not just years to your life. To achieve all these aspects, scientists and experts have introduced a set of exercises or activities

which are termed as aerobics. These activities vary from simple movements like free hand exercise to slightly complex and coordinated movements like twisting, jumping, dancing, etc. They are of various forms according to the degree of difficulty with competitive aerobics being the most coordinated of them all. Recently a new version of aerobics has been formed which is called “dance aerobics. This involves all the rhythmic movements like tap dance, twists and various other dance movements along with calisthenics. Actually aerobic dance was first popularized by Jacki Sorensen in the early 1970's, with routines consisting of dance and calisthenics. This aerobic programme is good for almost every one, irrespective of one's size, shape or sex. Aerobic dance can best be defined as continuous movement exercise, locomotor movement and dance steps performed to music. The variety and style of the movement and the musical accompaniment provide as many forms of aerobic dance programme as there are interests and tastes of people performing them. Aerobic dance work-out can be divided in to 4 phases: warm - up, skill review, aerobics and cool down. Each phase has its own purpose without which the work-out is incomplete. Each phase of the programme is necessary if aerobic dance is to provide the desired benefits. The best reason of starting aerobic dancing is that it is fun, one can tailor make one's work-out to music one likes, with friends one enjoys. But aerobic dance also affords each participant the benefits of all components of fitness including flexibility, strength, cardiovascular endurance, agility, balance, and coordination. Through strengthening exercise, the muscles become better defined, and the body becomes firmer and more attractively centered. By strengthening the muscles, one can achieve correct body alignment and body carriage with increased flexibility to move with freedom, rhythm and grace. The soft rebound skills increase ones balance and coordination, which carry over to many other sports and everyday activities with increased energy and signs of vitality, and a healthy, vibrant appearance. Moreover, the literature has shown the positive influence of physical exercise on cardiovascular endurance, muscular strength, flexibility and body composition (Gaesser and Rich, 1984; Pollock, Foster, Knapp and Schmidt, 1987; Hagberg, Montain, Martin, et al., 1989; Debusk, Stenestrand, Sheehan and Haskell, 1990; Kohrt, Malley, Coogan, et al., 1991; Ogawa, Spina, Martin, et al., 1992; Gaber, McKinney, Carleton, 1992; Swain, Abernathy, Smit, Lee and Bunn, 1994; Paton, Graves, Pollock, et al., 1996; DeAngelis, Vinciguerra, Gasbarri, & Pacitti, 1998; Toraman and Ayceman, 2004; Toraman, Erman and Agyar, 2004; and Kosti , uraškovi , Mileti , & Mikala ki, 2006). The present study was an attempt to investigate the effect of aerobic dance

on certain physiological variables, namely, resting pulse rate, breath holding, vital capacity and respiratory rate of college students.

OBJECTIVES

The objectives of the study were as follows:

1. To compare the adjusted mean scores of resting pulse of experimental and control group students by considering Pre-resting pulse as covariate.
2. To compare the adjusted mean scores of breath holding time of experimental and control group students by considering Pre-breath holding time as covariate.
3. To compare the adjusted mean scores of vital capacity of experimental and control group students by considering Pre-vital capacity as covariate.
4. To compare the adjusted mean scores of respiratory rate of experimental and control group students by considering Pre-respiratory rate as covariate.

HYPOTHESES

The hypotheses of the study were as follows:

1. There is no significant difference in the adjusted mean scores of resting pulse of experimental and control group students by considering Pre-resting pulse as covariate.
2. There is no significant difference in the adjusted mean scores of breath holding time of experimental and control group students by considering Pre-breath holding time as covariate
3. There is no significant difference in the adjusted mean scores of vital capacity of experimental and control group students by considering Pre-vital capacity as covariate.
4. There is no significant difference in the adjusted mean scores of respiratory rate of experimental and control group students by considering Pre-respiratory rate as covariate.

SAMPLE

The sample comprised 90 boys were selected from three different colleges of Jalandhar and Kapurthala districts. The participants had no previous history of participation in any sport and games. The age group of the subjects ranged between 18 to 20 years.

TRAINING SCHEDULE

The aerobic activity included the exercise of the whole body. Exercise was done in tune to the music. The aerobic programme included warm-up, workout (aerobic dance) and cool down sessions for a duration of 60 minutes. Using more vigorous and difficult movements during workout session after every 2 weeks gradually increased the intensity. The warming up exercise was done for 10 min. The warm up started slowly with the music tempo of about 100 beats/min. Static stretches for the whole body was done prior to the dynamic flexibility of exercise. It included head roll, shoulder roll, body twist, knee lifts, leg lifts with rotation and sit-ups. The workout series was for 30 minutes. This section of movement was done on the feet, using large muscles (leg) and movements with the arms. It included kicks, jumping jacks, knee lift, side kick, cross step, bouncing, twist point and cross. It included an increasing intensity of aerobic exercise at a faster phase, i.e., 140 beats/minute. The intensity and duration of the exercise increased after every 2 weeks. Aerobic dance programme included some other forms of exercises like Scottish steps, Jesse polka steps, side lunges, and ponies. As the intensity decreased into the cool down, the music tempo and volume also decreased, invoking the releasing conclusion. It was the last part of the programme. It started with low intensity activity. It included stretching exercise for 10 minutes i.e., heel first walk, heel down stretch, inside leg stretch and side step.

PROCEDURE FOR DATA COLLECTION

A pilot study was conducted to finalize the training programme. To make sure that the duration of exercise included in the programme were within the limits of the subjects to show satisfactory effect. The reliability of data was censured by establishing reliability of instruments, tests, subjects and the competency of the tester. The subjects were divided into two groups and each group consisted of thirty subjects. The experimental group was subjected to the training programmes namely aerobic dance and the group acted as control group did not undergo any training. Data on selected variables resting pulse rate, breath holding time, vital capacity and respiratory rate were collected as per the method before the experimental period (Pre-test) and at the end of the 8 week (Post-test).

ANALYSIS AND DISCUSSION

Objective-wise Analysis and discussion is as under:

- 1) For comparing the adjusted mean scores of resting pulse of the students subjected with training programmes of aerobic dance and Control Group by considering pre- resting pulse as

covariant, ANCOVA was employed for analyzing the data. It was found that adjusted F value was 114.9, which was significant at 0.01. Which showed that adjusted mean difference exist among the students subjected with training programmes of aerobic dance and Traditional Group. Further, the adjusted mean score of students belonging to the experimental group (68.83) was significantly lower than those belonging to Control Group (80.99). It may, therefore, be said that The resting pulse rate was significantly improved after the aerobic dance when compared with the control group.

2) For comparing the adjusted mean scores of breath holding time of the students subjected with training programmes of aerobic dance and Control Group by considering pre- breath holding time as covariant, ANCOVA was employed for analyzing the data. It was found that adjusted F value was 68.06, which was significant at 0.01. Which showed that adjusted mean difference exist among the students subjected with training programmes of aerobic dance and Traditional Group. Further, the adjusted mean score of students belonging to the experimental group (58.65) was significantly higher than those belonging to Control Group (51.31). It may, therefore, be said that there was a significant improvement after the aerobic dance on breath holding time when compared with the control group.

3) For comparing the adjusted mean scores of vital capacity of the students subjected with training programmes of aerobic dance and Control Group by considering pre- vital capacity as covariant, ANCOVA was employed for analyzing the data. It was found that adjusted F value was 40.37, which was significant at 0.01. Which showed that adjusted mean difference exist among the students subjected with training programmes of aerobic dance and Traditional Group . Further, the adjusted mean score of students belonging to the experimental group (1808.64) was significantly higher than those belonging to Control Group (1553.47). It may, therefore, be said that there was a significant improvement in vital capacity after the aerobic dance when compared with the control group.

4) For comparing the adjusted mean scores of resperatory rate of the students subjected with training programmes of aerobic dance and Control Group by considering pre- respiratory rate as covariant, ANCOVA was employed for analyzing the data. It was found that adjusted F value was, which was significant at 0.01. Which showed that adjusted mean difference exist among the students subjected with training programmes of aerobic dance and Traditional

Group 40.37. Further, the adjusted mean score of students belonging to the experimental group (17.06) was significantly lower than those belonging to Control Group (18.32). It may, therefore, be said that the respiratory rate was significantly improved after the aerobic dance when compared with the control group.

FINDINGS

The following were the findings of the study:

1. The resting pulse rate was significantly improved after the aerobic dance when compared with the control group.
2. There was a significant improvement after the aerobic dance on breath holding time when compared with the control group.
3. There was a significant improvement in vital capacity after the aerobic dance when compared with the control group.
4. The respiratory rate was significantly improved after the aerobic dance when compared with the control group.

IMPLICATIONS

The results of the study indicated that aerobic dance has significant effect on the physiological variables of boys. Thus this exercise should be included in the curriculum of physical Education for all classes at college level. This will help in promoting life-long physical activity and enhancing children's quality of life. Aerobic dance seem to be particularly influence physical education lessons that can enhance physical activity in students.

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