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COMPARATIVE EFFECTIVENESS OF AEROBIC AND ZUMBA DANCE TRAINING ON HEALTH RELATED PHYSICAL FITNESS AMONG WORKING WOMEN

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KEYWORDS

Aerobic Dance, Zumba Dance, Cardiovascular Endurance, Muscular Strength, Muscular Endurance, Flexibility, Working Women.

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Abstract

The purpose of the study was to compare the effectiveness of aerobic dance training and Zumba dance training on selected health-related physical fitness variables among working women. The physical fitness variables selected for the study were muscular strength, muscular endurance and flexibility. Thirty working women from Tiruchirappalli District, Tamilnadu were selected as participants and divided into two experimental groups, with 15 participants in the Aerobic Dance Training Group and 15 participants in the Zumba Dance Training Group. Both groups participated in their respective structured dance training programmes for a period of 12 weeks. Pre-test and post-test measurements were obtained for all four selected variables. The collected data were statistically analysed using Analysis of Covariance (ANCOVA) to compare the adjusted post-test scores of the two training groups after controlling for the influence of the pre-test scores. The result reveals that Zumba dance training group produced significant effect on muscular endurance and flexibility among working women.

INTRODUCTION

Regular physical activity is an important component of maintaining health-related physical fitness. Working women frequently experience occupational responsibilities, prolonged periods of sitting and time constraints that may reduce their participation in structured exercise. Consequently, exercise programmes that are enjoyable, accessible and sustainable may be useful for promoting regular physical activity. Dance-based exercise programmes provide an alternative to conventional forms of exercise. Aerobic dance combines rhythmic movements with continuous aerobic activity, whereas Zumba incorporates dance-based movements performed to music in a structured fitness format. Both forms of exercise involve repeated movement of major muscle groups and can provide a moderate-to-vigorous physical activity stimulus (Domene et al., 2016).

Health-related physical fitness consists of several components that contribute to an individual's ability to perform daily activities efficiently. Cardiovascular endurance enables sustained physical activity, muscular strength enables the production of force, muscular endurance allows muscles to perform repeated contractions, and flexibility facilitates an adequate range of movement around joints (Donath et al., 2014). Although aerobic dance and Zumba both incorporate rhythmic exercise, the movement patterns and training characteristics may differ. Therefore, comparing the effects of these two training approaches can provide useful information

regarding their influence on selected components of physical fitness.

BACKGROUND OF THE STUDY

Working women require adequate physical fitness to meet occupational and daily functional demands. Cardiovascular endurance is necessary for sustaining physical activity, while muscular strength and muscular endurance contribute to efficient performance of physical tasks. Flexibility is also important for maintaining functional movement and reducing limitations in everyday activities. Aerobic dance is a structured exercise activity involving rhythmic movements performed continuously with music. Zumba is another dance-based exercise approach that combines choreographed dance movements with aerobic exercise. Both programmes provide opportunities for participants to perform continuous physical activity in an enjoyable environment. The effectiveness of exercise programmes may depend upon the nature, intensity, duration and regularity of training. A comparative investigation of aerobic dance and Zumba can therefore help determine the extent to which each programme influences different components of health-related physical fitness.

OBJECTIVES OF THE STUDY

1. To determine the effect of aerobic dance training on cardiovascular endurance, muscular strength, muscular endurance and flexibility among working women.
2. To determine the effect of Zumba dance training on cardiovascular endurance, muscular strength, muscular endurance and flexibility among working women.
3. To compare the effectiveness of aerobic dance and Zumba dance training on cardiovascular endurance.
4. To compare the effectiveness of aerobic dance and Zumba dance training on muscular strength and muscular endurance.
5. To compare the effectiveness of aerobic dance and Zumba dance training on flexibility among working women.

STATEMENT OF THE PROBLEM

The purpose of the study was to investigate the comparative effectiveness of aerobic and Zumba dance training on selected health-related physical fitness variables among working women.

HYPOTHESES

1. There would be a significant difference in cardiovascular endurance between the aerobic dance and Zumba dance training groups after 12 weeks of training.
2. There would be a significant difference in muscular strength between the aerobic dance and Zumba dance training groups after 12 weeks of training.
3. There would be a significant difference in muscular endurance between the aerobic dance and Zumba dance training groups after 12 weeks of training.
4. There would be a significant difference in flexibility between the aerobic dance and Zumba dance training groups after 12 weeks of training.

METHODOLOGY

The study adopted a pre-test–post-test comparative experimental design. The physical fitness variables selected for the study were cardiovascular endurance, muscular strength, muscular endurance and

flexibility. Thirty working women were selected from Tiruchirappalli District, Tamilnadu as participants and divided into two experimental groups, with 15 participants in the Aerobic Dance Training Group and 15 participants in the Zumba Dance Training Group. Both groups participated in their respective structured dance training programmes for a period of 12 weeks. Pre-test and post-test measurements were obtained for all four selected variables. The collected data were statistically analysed using Analysis of Covariance (ANCOVA) to compare the adjusted post-test scores of the two training groups after controlling for the influence of the pre-test scores. The level of significance was fixed at 0.05.

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Table 1. Pre-Test and Post-Test Means

Variable	Group	N	Pre-Test Mean	Post-Test Mean
Muscular Endurance	Aerobic	15	18.40	25.10
	Zumba	15	18.60	26.00
Flexibility	Aerobic	15	22.50	27.80
	Zumba	15	22.30	28.60

Table 2. Analysis of Covariance of Selected Health-Related Physical Fitness Variables

Variable	Adjusted Aerobic Mean	Adjusted Zumba Mean	F-value	Result
Muscular Endurance	25.00	26.10	4.96*	Not Significant
Flexibility	27.70	28.70	6.21*	Not Significant

The adjusted post-test mean score of the aerobic training group was 25.00, whereas the Zumba dance training group obtained an adjusted mean score of 26.10. The obtained F-value was 4.96. The adjusted mean scores indicate that the Zumba dance training group performed better than the aerobic training group in muscular endurance. However, the result is reported as not significant in the table. This classification should be verified using the appropriate degrees of freedom and critical F-value or exact p-value. The adjusted post-test mean score of the aerobic training group was 27.70, while the Zumba dance training group obtained an adjusted mean score of 28.70. The obtained F-value was 6.21. The adjusted mean scores indicate that the Zumba dance training group performed better than the aerobic training group in flexibility. However, the result is reported as not significant in the table. This classification should also be verified using the appropriate degrees of freedom and critical F-value or exact p-value.

Figure 1. Mean values of Aerobic group

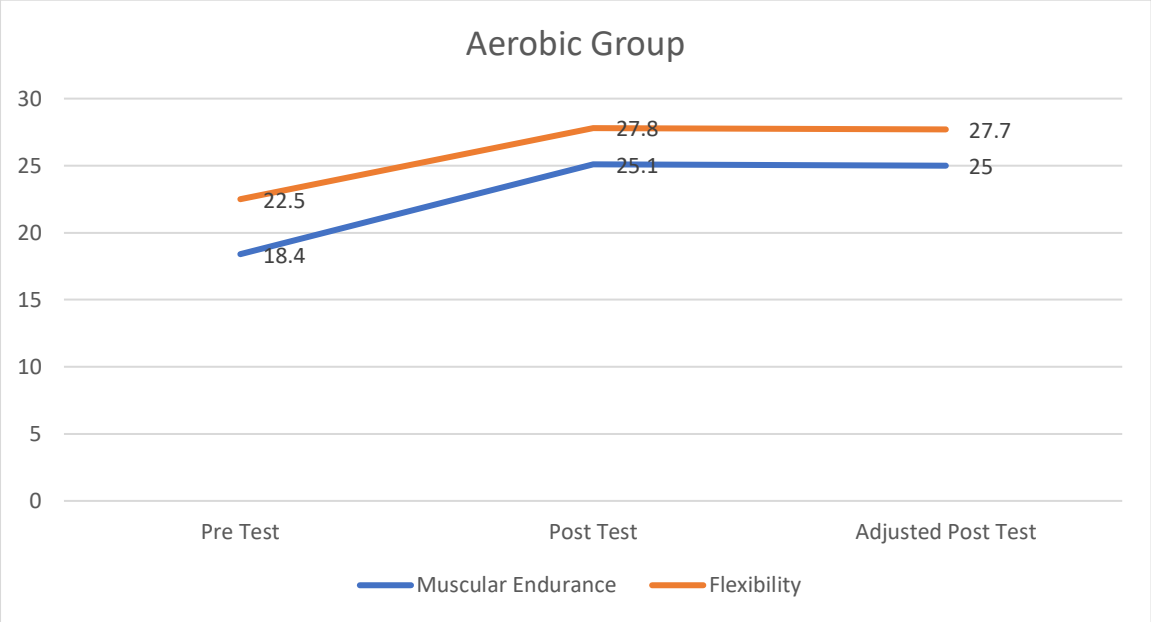
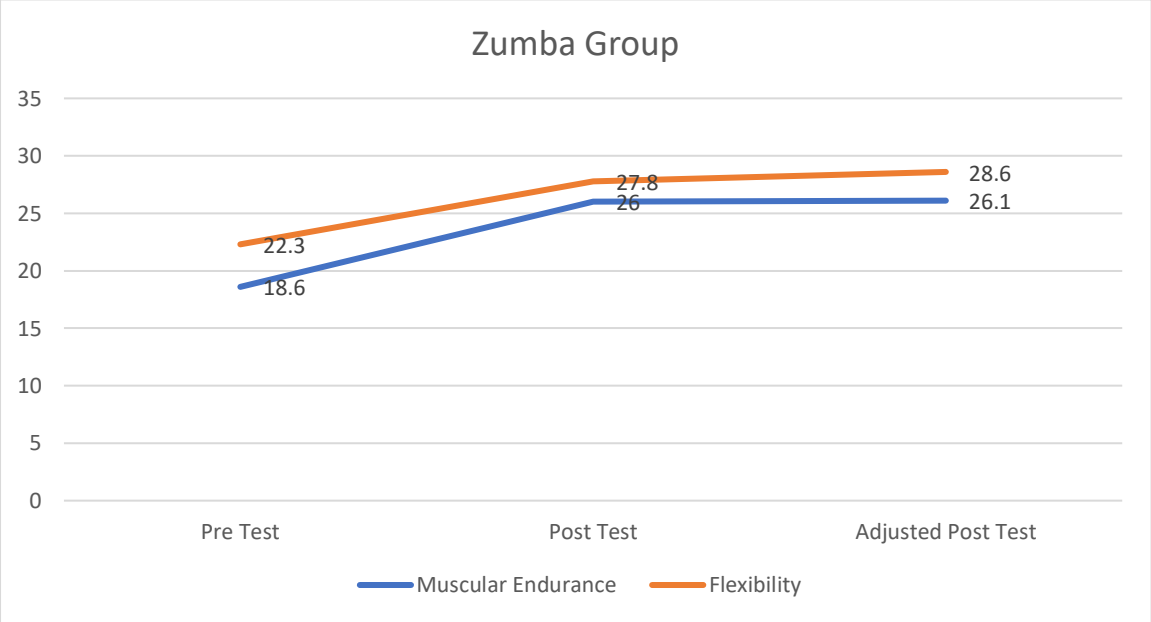


Figure 2. Mean values of Zumba group



DISCUSSION ON FINDINGS

The purpose of the present study was to investigate the comparative effectiveness of aerobic dance and Zumba dance training on selected health-related physical fitness variables among working women. The study focused on muscular endurance and flexibility, and the results indicated that both training programmes produced improvements in the selected variables over the 12-week training period. However, the magnitude of improvement differed between the two experimental groups.

Muscular Endurance

The findings of the study revealed that the Zumba dance training group obtained a higher adjusted post-test mean score of 26.10 compared with 25.00 for the aerobic dance training group in muscular

endurance. The obtained F-value was 4.96. The difference in adjusted mean scores indicates a comparatively greater improvement among the participants who underwent Zumba dance training. This improvement may be attributed to the continuous rhythmic movements, repeated dance sequences and coordinated actions involving different muscle groups during Zumba sessions. These activities require repeated muscular contractions and may contribute to the development of muscular endurance. Similarly, aerobic dance training also involves repetitive movements that place continuous demands on the muscles, thereby supporting improvements in muscular endurance. The findings suggest that both forms of dance-based exercise may be useful for developing muscular endurance among working women, although the Zumba group demonstrated a higher adjusted mean score.

Flexibility

The results of the study further indicated that the Zumba dance training group achieved a higher adjusted post-test mean score of 28.70 compared with 27.70 for the aerobic dance training group in flexibility. The obtained F-value was 6.21. The higher adjusted mean score of the Zumba group suggests a comparatively favourable improvement in flexibility following the training programme. This may be due to the varied body movements, directional changes, coordinated steps and movements involving different joints during Zumba sessions. Regular participation in these movements may help improve the range of motion of the joints and the functional mobility of the participants. Aerobic dance training also incorporates movements that require coordination and joint mobility, which may contribute to improvements in flexibility. The findings therefore indicate that both aerobic dance and Zumba dance training may contribute positively to flexibility among working women, with a higher adjusted mean observed in the Zumba group.

Comparative Effectiveness of Aerobic Dance and Zumba Dance Training

The overall findings indicate that both aerobic dance and Zumba dance training were associated with improvements in muscular endurance and flexibility among working women during the 12-week intervention. However, the Zumba dance training group demonstrated higher adjusted post-test mean scores in both variables when compared with the aerobic dance training group. The continuous rhythmic movements, varied dance patterns and coordinated whole-body activities involved in Zumba may have provided a different exercise stimulus that contributed to the observed differences. Aerobic dance, on the other hand, provides structured and repetitive movement patterns that can also support the development of health-related physical fitness. The findings highlight the importance of dance-based exercise programmes as alternative forms of physical activity for working women. Such programmes may help overcome barriers associated with conventional exercise by providing an enjoyable and engaging training environment. Regular participation in structured dance activities may contribute to the maintenance of physical fitness and encourage an active lifestyle.

CONCLUSION

The result reveals that Zumba dance training group produced significant effect on muscular endurance and flexibility among working women.

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