The Effects of Zumba on Fitness Levels as Determined by The YMCA Submaximal Exercise Test

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Abstract

Introduction: Zumba is a dance fitness exercise with Latin rhythm including dance movements such as salsa, rumba, and merengue. Previous studies have shown that aerobic dance training programs do not necessarily produce the same aerobic adaptation responses in cardiorespiratory capacity as running, however exercise intensity can be assessed in different ways: blood pressure (BP), heart rate (HR), and Borg's rate of perceived exertion (RPE) scale. The purpose of this study was to evaluate the effect of Zumba on fitness levels during YMCA graded exercises testing in a two week period

Methods: Three women (W; age 40.0 + 4.16 yrs) and two men (M; age 32.5 + 10.67 yrs) who are regular participants of various Zumba classes in the Arlington. Each subject participated in 6-8 Zumba exercise classes for two weeks. Exercise testing was done prior to and following the two weeks of Zumba participation. Each subject had their weight, height, resting heart rate and blood pressure taken prior to testing. Subjects performed graded exercise testing on the bicycle ergometer with increasing work load at different stages, chosen based on HR response until a steady state was achieved in two different stages within HR of 110 and 150 bpm or at 85% estimated max HR.

Results: After two weeks of eight to ten sessions of Zumba, the values of resting HR (Pre Zumba 72 ± 10.5 bpm; Post Zumba: 64.9 ± 7.6 bpm), p = 0.01 and RPE (before Zumba 14.8 ± 1.6; After Zumba: 13.6 ±1.1), p = 0.03 were both significantly different. With the resting blood pressure before and after Zumba, both systolic and diastolic were analyzed separately (systolic before Zumba: 129 ± 15.6; post Zumba: 126 ±10.3), p = 0.4, Diastolic: before Zumba: 78.4 ± 11.6, post Zumba: 74.2 ±8.9), p = 0.1 were not significantly different (p > 0.05). The maximum work load was the same before and after Zumba training for two weeks

Conclusion: The results of this study indicate that there is a significant impact of Zumba on fitness level with resting HR and RPE in just 8 to 10 sessions however, no significant changes occurred in blood pressure or work load. This supports the finding that aerobic exercise increases parasympathetic control of the heart at rest. However, long duration of the exercise may be required for other cardiorespiratory improvements.

Purpose

The purpose of this study was to evaluate the effect of Zumba on fitness levels using a YMCA graded exercise test before and after a two weeks period of Zumba exercises.

Methods

Participants

Three women (W; age 40.0 + 4.16 yrs) and two men (M; age 32.5 + 10.67 yrs) who were new and regular participants of various Zumba classes in the Arlington, Texas area. , Each subject participated in 6-8 Zumba exercises for two weeks. Participants were cleared for any injuries or medical conditions. Subjects participated voluntarily.

Experimental Design

Two sets of testing for data collection were done. The first was right before the start of the two weeks and the second immediately after the two weeks of Zumba classes.

Each subject had their weight, height, resting heart rate and blood pressure taken prior to testing. Each subject performed a graded exercise test on the bicycle ergometer with increasing work load at different stage until a steady stage was achieved in two different stages within HR of 110 and 150 bpm or before 85% estimated max HR.

Statistical Analysis

Collected data were analyzed using a paired sample t-test ($p \leq 0.05$). Borg scale used for RPE, BP measured with a standard stethoscope, Heart rate monitor used for pulse.

Variable	Mean	±SD
SBP (mmHg)	129.6 (Pre)	15.6
	126.8(post)	10.3
DBP (mmHg)	78.4(Pre)	11.6
	74.2 (post)	8.9
Resting HR (bpm)	72(Pre)	10.5
	64 (post)	7.6
RPE	14.8(Pre)	1.6
	13.6(post)	1.4
Workload(Kgm/min)	840(pre)	134.2
	840(post)	134.2

Table 2. Experimental Variables

Results (cont'd)

Variable	Mean	±SD
Age (yrs)	37.4	7.5
Height (in)	66.8	1.3
Weight (kg)	77.9	15.3

Table 1. Demographic Variables

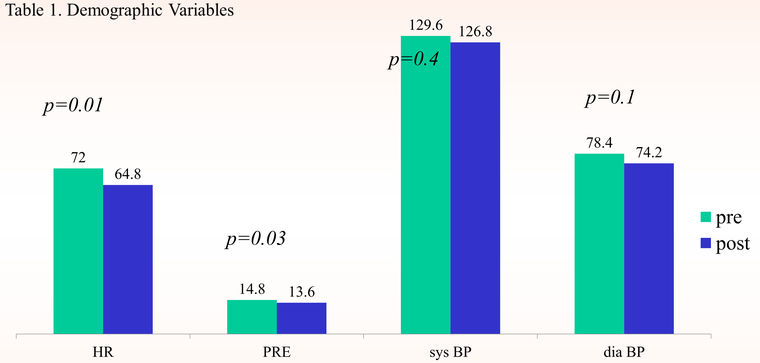

Fig 1: The Difference in Pre and Post HR, RPE, SBP, DBP with Eight Sessions Of Zumba Training

After two weeks of eight to ten sessions of Zumba, the values for Resting HR (Pre Zumba 72 ± 10.5 bpm; Post Zumba: 64.9 ± 7.6 bpm), p=0.01 and RPE (Before Zumba 14.8 ± 1.6; After Zumba: 13.6 ±1.1), p=0.03 both achieved a significant difference. With the Resting blood Pressure before and after Zumba, both systolic and diastolic were analyze separately (systolic before Zumba: 129 ± 15.6; post Zumba: 126 ±10.3), p= 0.4, Diastolic: before Zumba: 78.4 ± 11.6, post Zumba: 74.2 ±8.9), p=0.1 were not significantly different before and after Zumba ($p > 0.05$). The maximum work load was the same before and after Zumba training for two weeks

Conclusions

Further studies could be conducted using VO2max as an indicator of fitness level post Zumba.The results of this study indicate that there is a significant impact of Zumba on fitness level with resting HR and RPE in just 8 to 10 sessions however, no significant changes occurred in blood pressure or work load. This supports the finding that aerobic exercise increases parasympathetic control of the heart at rest. However, long duration of the exercise may be required for other cardiorespiratory improvements