

Physiological Responses to a 60-Minute Zumba® Class in College Age Females

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ABSTRACT

Zumba® is a group exercise format that incorporates aerobic dance components and claims to be an appropriate physical activity to be included in an exercise prescription for improving cardiorespiratory fitness. The purpose of this study was to determine the energy expenditure and physiological effects of a 58.6 min Zumba® class and compare the average METs of the Zumba® class to the ACSM's definition of vigorous activity of 6 METs. All participants (n=30) were volunteers from Zumba® classes at Texas Woman's University. Participants attended three Zumba® classes to become familiar with the choreography. The Zumba® session where data was collected was performed in a standard class setting identical to the three familiarization classes. The Zumba® class was composed of 16 songs corresponding to a specific set of choreography. The Zumba® class was divided into a warm up phase, aerobic phase, and cool down phase. Oxygen consumption (VO_2) was measured using a K4b2 Cosmed unit that the participant wore during the Zumba® class. A one sample t test was used to determine if there was a significant difference between the METs of the Zumba® class and 6 METs. A repeated measures ANOVA, with a Bonferroni post-hoc test, was used to determine if there was a significant difference between variables in the three phases of the Zumba® class. Significance level was set at $p \leq .05$. Mean METs for the full Zumba® class (5.7 ± 1.8 METs) was not significantly different ($p < 0.05$) from 6 METs. The HR during the aerobic phase (164 ± 12 bpm) was significantly higher ($p < 0.05$) than the warm up (148 ± 25 bpm) and cool down phase (139 ± 20 bpm). Similarly, %HRmax was highest in the aerobic phase relative to warm up and cool down ($83.7 \pm 6.1\%$ vs $75.2 \pm 12.6\%$ and $71.0 \pm 10.4\%$, $p < 0.05$, respectively). The cool down phase had a significantly lower ($p < 0.05$) VO_2 and energy expenditure (14.7 ± 4.9 ml/kg/min and 5.0 ± 1.3 kcal/min, respectively) than the warm up (20.2 ± 7.0 ml/kg/min and 6.8 ± 2.1 kcal/min) and aerobic phases (21.0 ± 6.8 ml/kg/min and 7.2 ± 1.9 kcal/min). Based on these results, Zumba® meets the ACSM Guidelines for the minimum recommendation for aerobic exercise intensity as a moderate intensity (3-6 METs) exercise.