The Effect of a Cardiac Rehabilitation Exercise Program Based on the Borg RPE Scale on Heart Rate Variability and The Six-Minute Walk Test

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Summary of the research

The ability of cardiac rehabilitation interventions to reduce mortality in those with cardiovascular disease (CVD) is well established. Despite its widespread use in the clinical setting, the Borg Rating of Perceived Exertion (RPE) scale is yet to be validated for its ability to produce equivalent physiological health outcomes to those achieved in programs where exercise intensity was prescribed on the basis of a maximal or submaximal exercise test. Heart rate variability (HRV) analyses provide insight into cardiac autonomic balance and have also shown to be valid independent predictors of recurrent cardiac events and cardiac-related mortality. Fifteen participants were assessed using HRV analysis prior to and following completion of a cardiac rehabilitation program where exercise was prescribed according to the Borg RPE scale. Pre and post Six-Minute Walk Test (6MWT) scores were also obtained to determine the impact of this program on functional walking capacity. Frequency domain measures of HRV analysis demonstrated an improvement in participants’ cardiac autonomic balance. However, there was no significant improvement in DFA, suggesting the training stimulus was insufficient to decrease participants’ risk for secondary cardiac events. The findings of this study indicate that cardiac rehabilitation programs, where exercise prescription is based on the Borg RPE scale, are capable of improving both heart function and exercise capacity. However, these programs may not directly decrease participants’ risk of cardiac-related mortality.