

The Effectiveness of a Community Based High Intensity Interval Training Program on Markers of Physical Health

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ABSTRACT

Community outreach programs targets at low Social Economic Status (SES) have been established to improve living conditions and educational programs in hopes of improving SES status. Despite community outreach programs targeting low SES, there has been no research looking at the efficacy of a High Intensity Interval Training (HIIT) exercise intervention program to improve wellbeing. The primary purpose of this study is to examine how 8 weeks of HIIT will affect markers of physical health. The secondary purpose of this study is to determine if HIIT is sufficient enough to benefit low SES or if other interventions are needed to sustain positive results. Participants (n= 18) were recruited through local churches located near low income areas. Criterion for this study included: the age of participants to be between 18- 75, no current musculoskeletal injury, and clearance from a physician to perform physical activity. Pre testing measurements (height, weight, blood pressure, heart rate, and strength assessments) were taken at Texas Tech Human Performance Lab. Strength assessments consisted of Maximal voluntary isometric contractions of the leg flexors and extensors at 60° of flexion, maximal voluntary isokinetic contraction of the leg flexors and extensors at 60 and 240°/sec. Participants also performed vertical jumps on a force platform. An 8 week HIIT program was then implemented which required the participant to exercise on stationary bikes 2x a week. The program was designed to start out at a low intensity over longer periods then progress to higher intensities over short time periods. Throughout the study, participants wore activity tracker watches that counted the amount of movement performed. This allowed for controlled activity levels outside of HIIT. Only eleven participants completed both pre and posttest measurements as there was a 38% drop out rate. Data analysis revealed that no changes in HR, blood pressure, Max force (N), RPD (W/s), isometric or isokinetic strength. However, participants did show an increase in weight (P=.0096), Vertical Jump Height (P= .0475), and Max Power (P=.0153). Although participants did show improvement in certain areas of strength no markers of health improved and even an increase in weight was observed. Based off of the activity trackers, physical activity levels went down. We determined that the participants weren't as physically active once joining the study because they figured our intervention was enough. Based on our results we suggested that future studies or community outreach programs incorporate other interventions with HIIT such as a weight loss programs and education in order to maximize health improvement in low income family's physical health.