

Effects of Community-Based Exercise Training Among Older Individuals with Metabolic Disease, Cardiovascular Disease, or Muscle Atrophy

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ABSTRACT

Exercise training is associated with increased health benefits such as improved quality of life, mental health, and physical functioning. **PURPOSE:** The purpose of this study is to quantify the effects of structured aerobic and resistance exercise training on body composition, functional tests, and quality of life in older individuals in a community-based facility. We hypothesized that at least moderate participation in the program would decrease fat mass, improve outcomes on grip and timed movement tests, and increase quality of life. **METHODS:** Twenty subjects who were members from a community-based institute participated in the study (7M:13F; 69.10 ± 6.40 yrs [mean ± sd]; 166.88 ± 10.52 cm; 76.40 ± 16.42 kg) and had metabolic or cardiovascular disease, or muscle atrophy. Subjects were expected to participate in 3, 30-min sessions/week for 8 weeks. The program was 30 min aerobic conditioning of intervals and 6-7 full-body resistance exercises and basic stretches. We measured height (cm), weight (kg), fat mass (kg), lean mass (kg), grip strength (kg), timed-up-go (TUG, s), 10-meter walk forwards (s), 10-meter walk backwards (a novel movement) (s), 6-minute walk tests (m), the Health-Related Quality of Life (CDC HRQOL-4) survey, and 36-Item Short-Form Health (SF-36), before and after the completion of exercise training. We performed paired t-tests on testing variables and the 8 subsections of the SF-36 and one-sample t-tests on the delta of questions on the HRQOL-4. Alpha <0.05. **RESULTS:** There were no significant differences in any of the SF-36 subsections or testing variables ($p > 0.05$) except for increased right-hand grip strength (2.02 ± 4.35 kg, $p = 0.05$) and decreased time in the backwards 10-meter walk (0.52 ± 0.88 s, $p = 0.02$). Concerning the HRQOL-4, no members had fair to poor self-rated health before or after the program, more members experienced fewer but non-significant physically unhealthy days (delta = -3.61 ± 8.67 days, $p = 0.10$), and a similar number of mentally unhealthy days and days when poor mental/physical health kept them from usual activities ($p > 0.05$). **CONCLUSION:** These preliminary findings suggest that there may be clinically meaningful improvements in strength and novel movement in these older individuals after an 8-week prescribed and training program in the community setting. Different measurements of quality of life in this population should be explored.