The Impact of a Physical Activity Program in Persons with SCI

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Abstract:

Research Objectives: To determine the effectiveness of a physical activity program on ASIA motor scores and HDL in persons with SCI.

Design: Randomized clinical trial.

Setting: Outpatient hospital setting.

Participants: Inclusion criteria were ≥1 year post-injury, SCI diagnosis, and ages 18-80 years. Those with cognitive deficits preventing learning, medical problems posing health risks, or a primary disability other than SCI were excluded. Thirteen participants with complete paraplegia (TSI: 13.1±7.3 years), 9 participants with incomplete paraplegia (TSI: 8.2±9.6 years), 13 participants with complete tetraplegia (TSI: 20.7±14.5 years), and 7 participants with incomplete tetraplegia (TSI: 8.6±6.4 years) were completely randomized to either the physical activity program (n=21) or control group (n=21).

Interventions: Participants attended 6 workshops that were 4 hours in duration over 3 months. Workshops educated participants on how to engage in different physical activity modes, achieve their goals, and overcome barriers related to their goals.

Main Outcome Measure(s): ASIA motor scores and HDL were measured pre-post program.

Results: Although no significant differences were found in participants with tetraplegia, those randomized to the physical activity program

saw a 2.3 point increase on ASIA motor scores (p=0.03; CI: 1.2-5.0) in participants with incomplete paraplegia and 2.1 mg/dL increase in HDL (p=0.04; CI: 1.2-4.7) for participants with complete paraplegia, compared to the control group.

Conclusions: The results of this investigation indicate participating in a physical activity program has the potential to improve ASIA motor scores in persons with incomplete paraplegia and HDL in persons with complete paraplegia compared to a no-program control. These results suggest a physical activity program may improve motor function and some cardiometabolic health markers in persons with SCI. A similar study design should be employed with a larger sample to further validate our results.

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