

WiiNWALK: Feasibility of the Nintendo WiiFit for Improving Walking in Older Adults with a Lower Limb Amputation

Introduction: Prosthetic rehabilitation programs for individuals with lower limb amputation (LLA) are designed to enhance mobility primarily through walking retraining. Continual cuts to health care resources have reduced the number of rehabilitation hours to such a great degree that older adults often do not receive sufficient training to learn to walk using the prosthesis; therefore, innovative rehabilitation programs are needed. The objective of this study was to determine the feasibility of a home-oriented Nintendo WiiFit™ program for improving walking in older adults with unilateral LLA.

Method:

Design: parallel evaluator-blind randomized controlled trial (RCT).

Subjects: 50 years or older and ≥ 1 year post a unilateral transtibial (TT) or transfemoral (TF) amputation (recruitment and data collection ongoing at time of abstract submission).

Procedure: Subjects were randomly allocated to the intervention or control group. The intervention consisted of 3 x 40-minutes sessions/week of WiiFit training for 4 weeks (initially group training at the clinic, graduating to home training). Controls underwent an identical process using cognitive video games to account for attention, device and activity exposure.

The outcomes of interest were feasibility indicators consisting of recruitment, adherence, attrition and adverse event rates, and post-intervention fatigue and pain levels.

Results: Thirteen participants were recruited within 4 months. To date, 3 participants (2TT; 1TF) with a median age of 62 years (range=53-66) have completed the WiiFit intervention. Median adherence was 100% (range=58-100). Two participants experienced a fall during the intervention but were not injured. Mean (SD) fatigue and pain levels were 4.2/10 (1.5).

Conclusion: Our preliminary data suggest that the WiiFit intervention is feasible in older adults with unilateral LLA.

Keywords: Older adults; lower limb amputation; Nintendo Wii; Randomized controlled trial; feasibility