

FEASIBILITY OF A VIRTUAL EXERCISE COACH TO PROMOTE WALKING IN COMMUNITY-DWELLING PERSONS WITH PARKINSON'S DISEASE

Nancy K Latham,¹ Terry Ellis,² Tamara De Angelis,² Katy Hendron,² Cathi A Thomas,³ Marie Saint-Hilaire,³ Timothy Bickmore⁴

¹Boston University School of Public Health, ²Boston University, ³Boston University Medical Campus, ⁴College of Computer and Information Science, Northeastern University

Journal MTM 1:4S:7

DOI: 10.7309/jmtm.29

www.journalmtm.com

ABSTRACT

OBJECTIVE Exercise improves function and quality of life in persons with Parkinson's Disease (PD), but few people adhere long-term to home-based programs. A Virtual Exercise Coach (VEC) is an animated character viewed on a notebook computer in the subject's home that emulates face to face interactions. The effectiveness of VECs to improve exercise adherence in people with PD or any other neurodegenerative disease has never been explored. The aim of this study is to explore the feasibility, acceptability and preliminary evidence of efficacy of a VEC to promote daily walking in community dwelling persons with PD over a one month period.

METHODS 20 sedentary subjects with a diagnosis of PD participated in this Phase I clinical trial. Subjects were instructed to interact with the VEC for 5 minutes, wear a pedometer and walk daily for one month. Mobility (six-minute walk and gait speed) and exercise self-efficacy were assessed at baseline and one-month. Retention rate, satisfaction and interaction history were assessed at 1-month.

RESULTS Participants were 55% female, mean age 65.6. At study completion, there was a 100% retention rate and subjects had an average satisfaction score of 5.6/7 (with seven maximal satisfaction) with the VEC. Mean adherence to daily walking was 85% of prescribed sessions. Both gait speed and the 6-minute walk test significantly improved ($P < 0.05$) from baseline to one month. No adverse events were reported.

CONCLUSIONS Sedentary persons with PD successfully used a computer and interacted with a VEC. Retention, satisfaction and adherence to daily walking were high over one-month and significant improvements were seen in mobility assessments. Longer, controlled trials are needed to assess the effectiveness of the VEC in promoting adherence to long-term exercise in persons with PD.