

Title: Feasibility of Virtual Exercise Coach to Promote Walking in Community-Dwelling Persons with Parkinson Disease

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Objective: To evaluate the acceptability and usability of a virtual exercise coach (VEC) in promoting daily walking in community dwelling persons with Parkinson Disease (PD) over a one month period

Background: There is a growing body of literature revealing the benefits of exercise for persons with PD over the short-term. However, the long-term benefits of exercise are largely unknown as persons with PD often fail to adhere to exercise over a prolonged period. Interactive technologies have been increasingly used to improve health behaviors in older adults. The VEC is an animated character that emulates face to face interactions. Subjects “talked” to the VEC using touch screen input on a netbook computer in their homes.

Methods: 10 sedentary subjects with a diagnosis of PD participated in a feasibility trial. At baseline, exercise stage of change, exercise self-efficacy and attitude towards computers were assessed. Subjects were instructed to wear a pedometer and walk daily for one month and to interact with the VEC 5 minutes daily. At one month, retention rate, satisfaction and interaction history with the VEC were assessed and daily steps were examined.

Results: Participants were 80% male, mean age 65 and total UPDRS score of 53.9. At baseline, 30% of subjects were in the “contemplation” stage of exercise; 70% in the “preparation” stage; mean exercise self-efficacy was low to moderate; 30% rated their attitude towards computers as “OK”, 30% “useful” and 40% “enjoy them”. At study completion, there was a 100% retention rate with 70% very satisfied and 30% moderately satisfied with the VEC. On average, subjects had 22 conversations with the VEC over a one-month period. Mean adherence to daily walking was 95% with mean daily steps ranging from 2618 to 6957. 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. Longer, controlled trials are needed to assess the effectiveness of the VEC in promoting adherence to long-term exercise in persons with PD.