Wii: A Novel Approach to Improving Balance and Function in Persons with Parkinson's Disease

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Purpose:

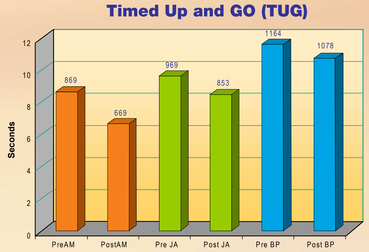
Our purpose for this program was to examine the effectiveness of the Wii in maintaining or improving balance ability in patients with Parkinson's disease.

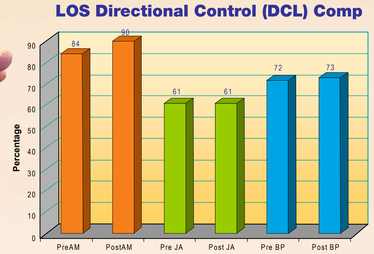
Foundation:

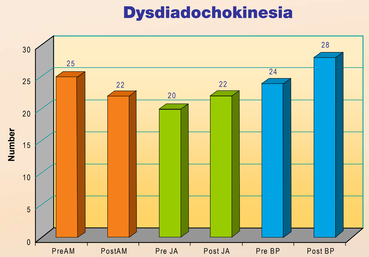
- Studies have demonstrated that repetitive task-specific agility training results in greater improvements in motor skills, as well as larger plasticity changes, than basic aerobic exercises.
- Virtual reality engages the patients in virtual reality task-specific activities.

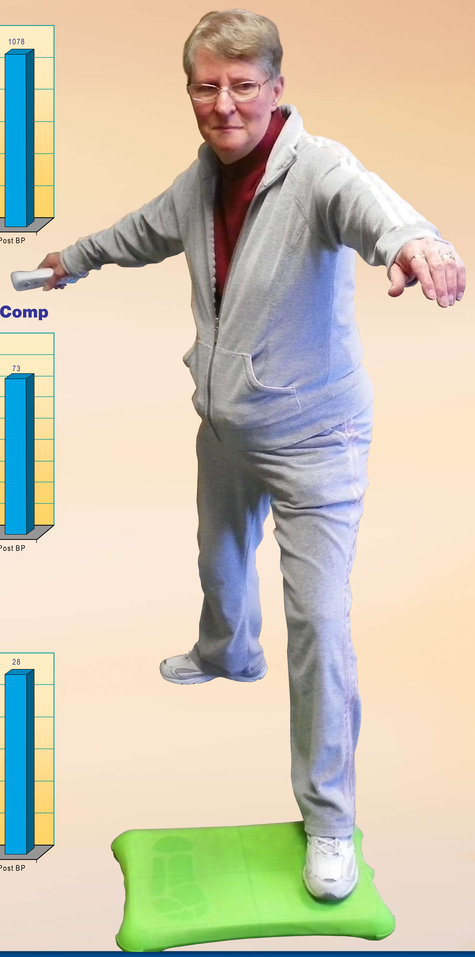
Description:

- Participants were identified from community dwelling fitness program for movement disorders.
- Assessment included: Timed Up and Go, timed disdiadochokinesia for upper extremity, and dynamic standing limits of stability utilizing computerized dynamic posturography.
- Participants attended twenty minute sessions each week, for six weeks.









Observation:

- Total of three participants
- Average decrease in Timed up and Go score 1-2 seconds
- Increased number of repetitions for upper extremity coordination assessment.
- Faster reaction time in limits of stability on posturography

Conclusions:

- Overall improvement in all our indicators for the three participants who completed the program.
- Demonstrated that the Wii, a low cost commercial virtual reality gaming device, may be used by the patient with Parkinson's disease in their home or clinic to help preserve functional mobility, balance and compliance with general fitness.
- In process of submitting to Institutional Review Board

References:

1. Holden, Maureen K. Virtual Environments for Motor Rehabilitation: Review. CyberPsychology & Behavior. 2005;8: 187-211.
2. King, Laurie A., Horak, Fay B., Delaying Mobility Disability in People with Parkinson Disease Using a Sensorimotor Agility Exercise Program. Physical Therapy. 2009; 89: 384-395.

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