Wii platform effectiveness on equilibrium and motor coordination improvement in patients with hemiparetic cerebral palsy A single blinded, controlled and randomized clinical trial

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ABSTRACT

Introduction: Patients with hemiparetic cerebral palsy (CP) develop equilibrium and unipedal/bipedal alterations, which manifest themselves as a diminished capacity to shift the gravity center during functional activities. Objective: Evaluation of the effect of the use of the Wii Fit platform on equilibrium and coordination, in children with hemiplegic cerebral palsy, patients at Valparaíso’s Teletón Institute, between June and December of 2011.

Patients and Methods: A controlled, randomized and simple blind clinical trial, was conducted with 32 hemiparetic CP patients, between 8 and 14 years of age, with mild to moderate functional impairment, and who could follow medium difficulty instructions. They were randomly assigned to control, kinesic and Wii groups. A progressively difficult exercise protocol that included coordination, equilibrium, and different levels of weight transference, was applied during thirteen sessions, except for the control group. Outcomes were assessed with functional Reach test, for equilibrium (Berg Balance Scale), standing gravity center for unipedal and bipedal positions (Wii Balance Board).

Results: The Wii Fit Platform intervention showed a statistically significant effect for the Berg Scale ($p \leq 0.001$). No other effects were observed.

Conclusion: Use of the Wii Fit platform generated partial improvements on functional activity items, without adverse effects for patients who participated in treatment.

Key words: Equilibrium, Wii Fit, coordination, cerebral palsy, virtual reality.