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## The use of the Nintendo Wii platform as a means of diagnosing balance deficit in active senior citizens

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**Introduction:** The loss of functional independence is a severe consequence of collapses in senior citizens. Virtual reality can be a powerful tool in the evaluation and rehabilitation of senior citizens with balance deficit.

**Objective:** To use the Nintendo Wii platform therapy as a tool to diagnose balance deficit in active senior citizens participating in the Third Age Open University.

**Methods:** Transversal descriptive study, approved in the Ethics and Research Committee n. 1.214.862 carried out with senior citizens in the Third Age Open University. The instruments which were used were the Mini-Mental Test, Timed Up and Go (TUG), Functional Reach Test (FRT), grip strength and the Nintendo Wii Platform. Other variables were collected such as sex, average age, BMI, physical exercise, and category, use of medication and reported physical alterations by collapsing and non-collapsing senior citizens. The Nintendo Wii platform does a weight distribution analysis on its surface and demonstrates the dislocation of the Center of Gravity (CG) in upper/lower and left/right quadrants. An inferential analysis was done with the average, standard deviation, minimum, maximum, confidence interval, frequency, and percentage. Comparison of the subgroups “collapsing” and “non-collapsing” senior citizens average values in variable scales, using the T-Student test for interdependent variables.

**Results:** The sample was composed of 26 senior citizens with preserved cognition (Mini-Mental 26,6) of which 25 (96%) were women, the average age was  $69,68 \pm 5,59$ , 4% had a BMI of 27,7 (evaluated on the Nintendo Wii platform by weight/height/age) and 8% took more than 2 different medications. The regular physical exercise was identified in 25 (96%) of the sample, among which the most common activities were bodybuilding/weight training 14 (43%) and aquarobics 12 (37%). Of the 25 senior citizens, 12 (37%) exercised 2 or more times during the week with a duration of 60 minutes, 14 (59,3%) reported having fallen in the last 12 months, in which 6 (25%) of them either fractured or had serious injuries – most of which occurred in the lower limbs. It was observed that most collapses, 9 (31,24%), occurred outside of their place of residences, such as streets and sidewalks. During the balance tests, the average of the group was within normality for the Functional Reach test ( $27,7 \pm 11,5$ ) and the Timed Up and Go ( $11,7 \pm 2,6$ ); however, most senior citizens presented a CG dislocation towards the lower right quadrant 24 (75%).

**Conclusion:** The following study shows the use of the Nintendo Wii platform as an effective technological tool in identifying balance deficit.

### Biography

Kelly Cristina Borges Tacon is a post doctoral student in the Universidade Federal de Goias, Brazil. She has published many papers in various journals. She has keen interest in the field of aging and gerontology.

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