

M. RIBEIRO MARQUES, C. SILVA SANTANA. *Analysis of the Nintendo Wii in rehabilitation*. *Gerontechnology* 2012;11(2):303; doi:10.4017/gt.2012.11.02.477.00 **Purpose** New technologies like the Wiimote have proven useful in rehabilitation¹. The virtual reality interventions have been directed to motor rehabilitation, but the use of this for the training of basic activities of daily living² has also been researched. The purpose of this study is to evaluate the simulation game of meal preparation 'Cook or be Cooked' of the Nintendo Wii and discuss the feasibility of using the game as a therapeutic resource in the intervention of occupational therapists. **Method** We conducted an analytical, exploratory, and qualitative study. The data collected included the following: (i) A description of the game (number of meals, complexity, time required, controls involved, tasks performed, score and kinesiological analysis). This allowed finding factors that can influence the performance, analyze the complexity of movements and motivational aspects. (ii) The description of the game (composition, ergonomic aspects of the controls and accessories for cooking game). This showed the necessity (or not) of a good knack for manipulating controls and the accessories that can help the performance. (iii) The analysis of the task of meal preparation (description and stages) help to determine if the game contemplates all the steps that are required for a real meal preparation. (iv) The analysis of body functions (motor, sensory and mental functions). This is the main part that helped to verify the use of the game in therapeutic intervention, find the functions that are required and the functions that can be stimulated with the game. **Results & Discussion** The game has 12 meals (3 classed easy, 4 medium, and 5 difficult). Bimanual tasks are not essential to prepare the meal, but this does make the movements easier to execute. The complete movement isn't required, this facilitates the utilization for people with contractures or other limitations like joint pain which is common in the elderly. The judge's opinion about the meal, is offered in a playfully form, medals are provided to punctuate the activity and this becomes a motivation in the game. Complex manipulation of the buttons or good dexterity are not essential, making the game easier to use with people with deformities, like rheumatoid arthritis common in the elderly. The game does not include all the steps of a real meal preparation, some complex movements like fitting food on a fork are not made. The game requires cognitive skills rather than motor skills, for example handling divided, sustained and selective attention when different stimuli appear simultaneously. Cognitive flexibility also facilitates the use of the accessories (objects like a forks that are used through the Wii remote control), aiding in visualization of the real object during the virtual preparation. The motor skills required are a partial range of motion skills and the gripping of the controls. People with postural instability can be aided by positioning resources and technology. Low or high muscle tone can be adjusted according to the abilities of the person through techniques of reduction of spasticity, assistive technologies or the help of the therapist. The use of the game Cook or be Cooked as a resource in the intervention of occupational therapists could be applied to different target audiences such as people with stroke, dementia, Parkinson, who often lose this skill in real life. It can also be used with different intervention objectives in mind such as the acquisition of motor and cognitive skills, motivation, performance skills and discovering new abilities.

References

1. Ponce FJM, Flores JAV, Torreblanca JMM. Aplicaciones del controlador wiimote para personas con discapacidad. Sevilla: Departamento de Ingeniería de Sistemas y Automática Universidad de Sevilla Camino de los Descubrimientos; 2009
2. Laver K, George S, Ratcliffe J, Crotty M. Virtual reality stroke rehabilitation – hype or hope? *Australian Occupational Therapy Journal* 2011;58:215-219

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