

Clinical Case at Home: Occupational Therapy in Neurorehabilitation based on video games at home

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Abstract

Occupational therapy (OT) can be defined as “the therapeutic use of everyday life activities (occupations) with individuals or groups for the purpose of enhancing or enabling participation in roles, habits, and routines in home, school, workplace, community, and other settings” The goal of OT is to maximize independence in all areas of occupations, including activities of daily living (ADLs), instrumental activities of daily living (IADLs), rest and sleep, education, work, play, leisure, and social participation. This chapter discusses occupational therapy’s role in neurological rehabilitation after acquired brain injury. In this specialized setting, occupational therapists utilize remedial and compensatory approaches to address underlying physical, cognitive, and/or visual and perceptual skills to facilitate improved performance and safety during engagement in meaningful and realistic occupations. The client, caregivers, occupational therapist, and interdisciplinary team all collaborate to promote a functional and meaningful recovery during and following rehabilitation for acquired brain injury. Emerging research and new technologies provide the research area and clinical practice of OT with treatment strategies and novel devices. Especially, neurorehabilitation (NR) is offering quite promising ideas to help patients with common neurological and cognitive disorders. NR tries to improve the quality of care and to explain the various responses to treatment by analyzing the correlation between central nervous system lesions and clinical findings Treatment sessions of OT focus on engaging patients in significant activities in order to help them in achieving their goals and reach their sufficient level of satisfaction, productivity, and independence. This allows the patients to have a sense of increased competence, self-efficacy, independence, purpose and, especially wholeness. Acquired Brain Injury is disability caused by a sudden injury to the brain. It is characterized by its sudden onset and by the varied set of sequelae depending on the area of the brain injured and the severity of the damage. These sequelae cause abnormalities in perception, physical, cognitive and functional alterations. The use of technologies for neurological rehabilitation could be beneficial for the treatment of this pathology. Alexander at age 16 suffers a fall causing brain damage acquired by a head injury. He is currently 18 years old and during these last two years he has been in different rehabilitation treatments that have improved his physical, cognitive and functional condition. Due to confinement due to Covid-19, Alex begins to receive Occupational Therapy at his home. Regarding the limitations that it presented, the impairment of motor coordination, spastic right arm without functionality, impairment in Perceptual-Cognitive aspects such as memory, attention and impairment in executive abilities stood out. Our goal is to develop an intervention plan in order to regain motor control, manual dexterity and train social and communication skills through video games on your home computer. The plan is based on the theoretical framework of learning and motor control and the Canadian model of occupational performance. We show the remarkable functional improvement experienced by Alex after eight weeks of home treatment. The rehabilitative approach complemented with video games seems to be useful to improve motor coordination, functional independence and motivation during the intervention, so it could constitute a therapeutic tool in neurological rehabilitation.

Keywords: Occupational therapy; head injury; central nervous system; cognitive disorders; cognitive rehabilitation therapy; neurorehabilitation;

Biography

Cristina Nieves Perdomo Delgado is PhD student in Design (Assistive Technologies) at the São Paulo State University of Brazil. She studied Occupational Therapy at the University of Salamanca (Spain). She has professional training, practical and research experience in the area of neurorehabilitation an assistive technology.
