

Using the Wii for Functional Improvements in Individuals with Brain Injuries

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Years: 2004 -2014

Databases: Academic Search Premier, CINAHL, ERIC, Google Scholar, MEDLINE, PsycArticles, SPORTDiscus

Number of Articles: 6

Summary of Research Findings

Individuals who have experienced brain injuries often require rehabilitative services to address impairments in cognitive, physical and/or psychosocial functioning (Gil-Gómez, Lloréns, Alcañiz, & Colomer, 2011). In recent years, use of the Nintendo Wii and similar gaming systems has become increasingly popular in rehabilitation settings (Lange, Flynn & Rizzo, 2009) as therapists have recognized their potential for addressing a variety of treatment goals. In addition to being readily available and low in cost, the Wii offers activities that are entertaining and engaging which can often motivate patients during therapy (Pessoa et al., 2014).

This six article literature review focused on use of the Wii to promote functional improvement in individuals with brain injuries. Four of the six articles reviewed presented interventions specifically utilizing the Nintendo Wii (De Kloet, Berger, Verhoeven, Van Stein Callenfels, & Vliet Vlieland, 2012; Celinder & Peoples, 2012; Lange, et al., 2009; Pessoa et al., 2014;), while one study used easy Balance Virtual Rehabilitation (eBaViR) which is described as a Wii balance board type system (Gil-Gómez et al., 2011), and another used video games controlled using a center-of-pressure system (Betker, Desai, Nett, Kapadia, & Szturm, 2007).

Participants included individuals across the lifespan (6 – 95 years of age) with diagnoses of traumatic brain injury (Betker et al., 2007; Lange et al., 2009), acquired brain injury (DeKloet et al., 2012; Gil-Gómez et al., 2011) and CVA (Celinder & Peoples, 2012; Lange et al., 2009). Some studies did not focus exclusively on individuals with brain injuries, so patients receiving rehabilitative services for other conditions including SCI (Lange et al., 2009), spina bifida and paraplegia (Betker et al., 2007) were also included.

Results indicated that interventions using the Wii and similar video game activities contributed to improvements in physical, cognitive and psychosocial functioning in individuals with brain injuries. Documented physical improvements included increased static balance (Gil-Gómez et al., 2011) and dynamic short-sitting balance (Betker et al., 2007); improved coordination (Pessoa et al., 2014); enhanced gross motor functioning and quality of movement (De Kloet et al., 2012). Improvements in cognitive functioning included increased attention, memory, and information processing (DeKloet et al., 2012). Psychosocial benefits included increased social engagement and self-esteem, reduced depression and improved quality of life (Pessoa et al., 2014). Additionally, individuals reported that therapies using the Wii helped motivate them and gave them something to talk about with family and friends (Betker et al., 2007; Lange et al., 2009).

Although some studies were limited by small sample sizes and/or lack of control groups, results indicate that therapeutic interventions using the Wii are viable treatment options in the rehabilitation of individuals with brain injuries and can lead to a variety of functional improvements.

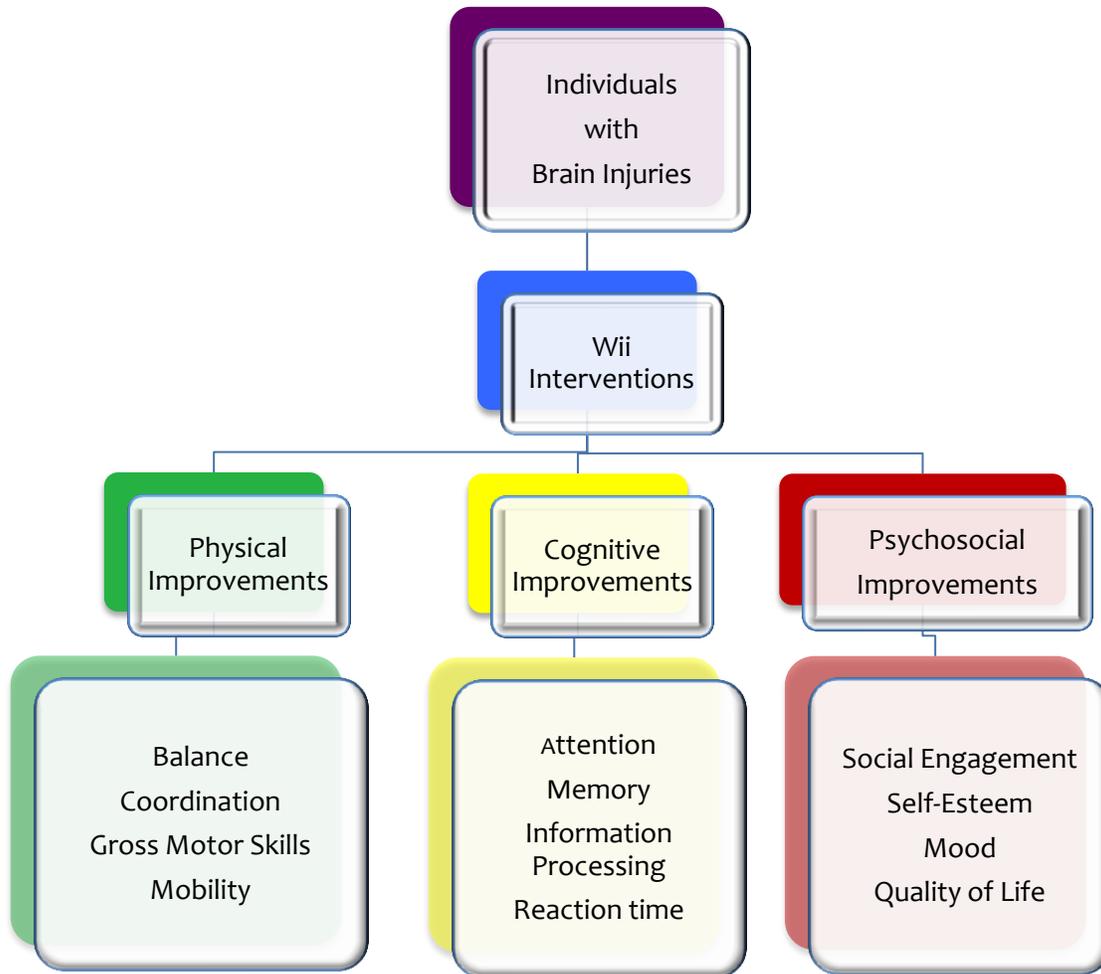
Knowledge Translation Plan

Recreation Therapists should consider interventions using the Wii when treating individuals with brain injuries since gaming devices like the Wii are often well received in rehabilitation (Lange et al., 2009) and can help clients meet a variety of treatment goals (De Kloet et al., 2012).

In order to achieve maximum results, therapists should select games that align with client needs, skills and interests. Additionally, the therapist should ensure clients are performing tasks appropriately during the game and that they understand the device set-up, menu navigation, game selection options and proper positioning (Lange et al., 2009). Given the large number of game options available, the website www.therapwii.nl/ may be a helpful tool in matching games with client goals and quickly selecting appropriate activities (DeKloet et al., 2012). Most Wii activities offer variations based on number of participants, so therapists can consider both individual and group treatment sessions.

Sessions should be structured to last approximately 30 to 60 minutes (Betker et al, 2007; Celinder & Peoples, 2012; De Kloet et al., 2012) since longer sessions may result in frustration and fatigue in this population (Celinder & Peoples, 2012). Therapists should take the time, however, to allow clients to create a personal avatar (Mii) since individuals report higher satisfaction with games when they do (Pessoa et al., 2014).

In order to encourage use outside of treatment sessions, the Certified Therapeutic Recreation Specialist (CTRS®) should also educate family and friends on games best suited for the client and provide information regarding equipment purchase if home gaming systems are not in place. Not only will additional participation in Wii activities outside the treatment setting provide increased opportunities for improved functional outcomes, but also it can facilitate positive social interaction with family and friends.



References

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