The concept of neuroplasticity, a dynamic system of function and its programs combine auditory stimulation with balance, movement and visual motor activities which may improve functional changes after intervention.

Demographics

Sample of convenience, individuals aged 65 to 90 y/o meeting inclusion criteria from Sarpy County YMCA.

Inclusion criteria: individuals must not have had a serious medical surgery, illness or hospitalization in the past 6 months.

Exclusion criteria: individuals receiving rehabilitation services, if they have a diagnosis, such as cerebrovascular accident, traumatic brain injury, multiple sclerosis or other neurological pathologies or fluctuating Meniere’s; individuals with Meniere’s disease as well to examine if quality of life measures changed after intervention.

Background

Impaired balance is a high risk factor for falls (Bazener, et al., 2008). One in 3 adults ages 65 and older will fall each year which can cause moderate to severe injuries and fall related mortality increases with advancing age, especially in those older than 70 years of age (Rubenstein, 2006).

Loss of confidence in one’s ability to ambulate can result in a functional decline, depression, feelings of helplessness, and social isolation (Aschkenasy & Rothenhaus, 2006). (Rao, 2005).

Methods used to prevent falls and for improving vestibular disorders and balance testing and it has been theorized that exercise may offer a protective effect in slowing the transition to disability and decreased quality of life (Gottshall, Topp, & Hoffer, 2010).

• Methods used to prevent falls and for improving vestibular disorders and Meniere’s disease include vestibular rehabilitation.

• Individuals who are physically active demonstrate better results on gait and balance testing and it has been theorized that exercise may offer a protective effect in slowing the transition to disability and decreased mobility (Dietrich, 2007).

• Brown and de Bruin found that a music-based multitask exercise program improved gait, balance and decreased the risk of falling among community living older adults and that the improvement was maintained over a 6 month period (Brown & de Bruin, 2011).

• Integrated Listening Systems (ILS) is a multi-sensory program for facilitating brain function and it’s programs combine auditory stimulation with balance, movement and visual motor activities.

• Multisensory approach was more effective than sound alone based on the concept of neurolastity, that conceptually, the brain is a dynamic system of neural networks capable of growth under favorable circumstances and input (Chakraborty, Chatterjee, Choudhary, & Chakraborty, 2007).

Objective

The purpose of this study was to assess the impact of the Integrated Listening System (ILS) program on the balance and movement abilities of individuals with Meniere’s disease as well as examine if quality of life measures changed after intervention.

Discussion

Final outcomes to be determined; it is hypothesized that use of ILS as an adjunctive method may facilitate outcomes in patients with balance issues including Meniere’s disease.

Implications for Practice

• ILS and the exercises may provide therapists with another approach to use when treating patients with balance issues and at risk for falls.

• The ear must be stimulated to improve rhythm and balance. (Borsch, 2000).

• Exercise may provide a more effective means of stimulating neural pathways and reeducating formation providing cortical input and effect rhythm and balance.

• Use of ILS adds a multi-sensory component by combining the auditory stimulation with balance, movement and visual motor activities which may improve functional abilities and decrease the risk of falls in the elderly.

References


This study is currently in progress and results will be available after data analysis is completed. For more information please contact Dr. Alfred Bracciano.

Results

INVESTIGATING THE USE OF INTEGRATED LISTENING SYSTEMS (ILS) IN THE ELDERLY WITH BALANCE DYSFUNCTION

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