Effect Playing the Nintendo Wii Sports has on Depression Symptoms in Older Adults

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Abstract

Objective: Depression is a major mental illness that is largely prevalent in the geriatric population, diagnosable in 15 out of 100 adults over age 65 in the United States (Late). Recent studies have shown that exergames, video games with a physical component, have a positive effect on Subsyndromal Depression symptoms (Rosenberg). The goal of this study is to assess the effect playing Wii Sports has on an individual at an adult day center with signs and symptoms of depression.

Method: The individual will play the Wii Sports 3 times a week for 30 minute intervals for a total of 2 weeks. The participant will be assessed for depressive signs and symptoms using the Geriatric Depression Scale (GDS) and the Life Satisfaction Scale (LSS).

Results: The results proved to be inconclusive due to participant declining the intervention more than 50% of the time. Although the results were inconclusive, the participant showed increased positive mood and emotions when playing the Nintendo Wii.

Key Words: depression, Wii, geriatrics, games, adult day care, quality of life

Purpose

The purpose of this case study is to investigate the effects that playing Wii Sports has on a participant with signs and symptoms of depression. Exergames have been shown to have positive therapeutic effects on individuals with Subsyndromal Depression (Rosenburg). Studies have also found that participating in pleasant activities can decrease depressive signs and symptoms. This study based its process on this evidence.

Literature Review


Rosenburg studied the effects that exergames have on subsyndromal depression. Exergames include videogames that are specifically made to have a physical activity component. The Nintendo Wii Sports used in this study is an example of an exergame. This 12 week study assessed 19 participants from senior community centers and retirement communities. The participants played the Wii Sports (tennis, bowling, golf, baseball, and boxing) for 35 minute sessions, 3 times a week. The participants played the Wii at either the senior community center or retirement community. The Quick Inventory of Depressive Symptoms was used to measure depressive symptoms and the Beck Anxiety Inventory was used to assess anxiety levels. The Medical Outcomes Study was used to measure physical and mental health, along with The Repeatable Batter for Assessment of Neurocognitive Status to measure cognitive
function. At the end of the 12 week intervention, depressive symptoms, mental health quality of life, and cognitive functioning had improved drastically.


This journal article is a review of case studies that explore interventions that can be used to treat depression, anxiety, dementia, and other disorders that are common in older adults. It discussed two different studies that investigated the impact internet based interventions have on depressive symptoms. Spek and Cuijpers used an internet-based cognitive behavioral self-help intervention to explore the effects it has on depression. The study showed that the intervention had positive effects on the participants’ symptoms and that these results continued over time. Another study used the Butler system as a depression intervention. This internet-based intervention contains two parts, the book of life and virtual environments. Both of these parts uses the process of life review, meaning the participants reminiscence on past positive experiences and memories. The study showed that the Butler system resulted in an increase in positive emotions and a decrease in negative emotions.


This document created by the Substance Abuse and Mental Health Services Administration (SAMHSA) discusses evidence-based practice for older adults with depression. It starts off by explaining what evidence-based practice is and the process that should be followed when deciding to implement them with a client. It then explores different types of evidence-based practices that have been proven to decrease symptoms of depression in clients. Some of the interventions they explore include Cognitive Behavioral Therapy, Behavioral Therapy, Problem Solving Treatment, Interpersonal Psychotherapy, Reminiscence Therapy, Cognitive Bibliotherapy, Antidepressant Medications, Multidisciplinary Geriatric Mental Health Outreach Services, and Collaborative and Integrated Mental and Physical Health Care. I included this document in my research because it specifically discussed that participating in recreation and pleasant activities is a beneficial intervention for depression. The Program to Encourage Active, Rewarding Lives for Seniors (PEARLS) is a program that uses problem solving treatment with pleasant recreational activities to treat depressive symptoms. Participants learn how to recognize their depressive symptoms and find solutions for them. They also participate in pleasant recreational, social, and physical activities. A study found that individuals that participated in this program were 50% more likely to drop depressive symptoms and 36% more likely to achieve remission.

Content Summary

This study will explore the impact playing Nintendo Wii Sports has on a participant named Brittany with signs and symptoms of depression. Brittany is an 86 year old Caucasian female. Her diagnoses and other medical problems include hypertension, osteopenia, transient ischemic attack, extreme weakness, unsteady gait, anxiety, and confusion. Two of the assessment tools used for her initial assessment completed on July 2nd, 2014, included the Geriatric Depression Scale (GDS) and the Life Satisfaction Scale (LSS). She scored 8 out of 15 on the GDS and 9 out of 32 on the LSS, indicating that she has signs and symptoms of depression and low life satisfaction. The GDS is an assessment tool and
can not be used to diagnose depression, but does assess the probability of depression signs and symptoms. The LSS assessed for current life satisfaction and also is not used to diagnose depression. This study will focus on the effects playing the Nintendo Wii Sports have on Brittany’s depressive signs and symptoms. Social history, disease and disability, assessments, plan of care, interventions, and an evaluation will be included in this study.

Biographic and Demographic Information

A. Social History

Brittany is an 86 year old Caucasian female that attends an adult day center 5 days a week. She currently lives alone and has a night watcher assist her at night. Her son lives across the street from her and drives her to the center every day. Brittany grew up in Prescott, Arizona. She received a college degree as a Registered Nurse. She worked for 5 years and then became a housewife. Brittany has 7 children, 14 grandchildren, and 5 great grand children. Her husband was a colonel in the Air Force, causing them to move to many different places. Brittany has lived in Arizona, California, Texas, Alabama, Alaska, England, Newfoundland, New York, and Virginia. Her husband passed away in 2006. Brittany grew up Catholic but is not currently practicing. Her interests include gardening, golf, tennis, current events, bridge, card games, and watching television.

B. Disease/Disability

Brittany has been diagnosed with hypertension and osteopenia. She also suffers from confusion, anxiety, unsteady gait and extreme weakness. Hypertension, or high blood pressure, can often go undetected unless checked because symptoms are typically not present (High). However, the increased force of blood against artery walls, heart, and other organs damages the tissue and can cause major medical issues (High). Brittany has unspecified hypertension, meaning that there is no specific cause of the disease (Carretero). Some causes could include obesity, insulin resistance, high alcohol or sodium intake, aging, sedentary lifestyle, stress, and low potassium or calcium intake (Carretero). Hypertension can be treated with medication and lifestyle changes, but there is not a cure (High). Some lifestyle changes include a healthy diet with low sodium, increased physical activity, managing stress levels, and avoid tobacco and alcohol use (High). If a patient’s blood pressure is 140/90 or above doctors could prescribe medication to manage the disease (High). Brittany takes Lopressor, Catapress, and Tiazac by mouth daily to treat her hypertension. Osteopenia, or low bone density, is not a disease, but rather an indication of one’s fracture risk (Torpy). The body naturally starts to lose bone density starting around age 30 because old bone cells are being reabsorbed by the body faster than new bone cells are being produced (Osteopenia). The body will lose bone density at a slower rate the more bone density is made before age 30 (Osteopenia). Some risk factors of osteopenia include being female, family history of low bone density, low body weight, use of tobacco or alcohol, a sedentary lifestyle, and drinking soda regularly. The risk may also be increased if the patient has had chemotherapy, radiation, an eating disorder, or history of using steroids (Osteopenia). Osteopenia can be treated with medications such as bisphosphonates, estrogen receptor modulators, and estrogen hormones (Torpy). Maintaining a healthy weight, diet, physical activity level, and calcium and vitamin D levels can also help slow the progression
of osteopenia (Torpy). On May 1st, 2014, Brittany had a transient ischemic attack. She takes Aspirin by mouth daily for a blood thinner. She also suffered a fall in 2005 which caused a subdural hematoma, or an accumulation of blood on top of the brain (Subdural). She underwent surgery, but the incident left her with extreme left side weakness. Brittany also takes Lortab or Motrin for pain as needed. She currently uses a wheelchair at home and a walker while at the adult day center. She needs assistance with transferring and ambulating. She wears Depends and her son indicates that she is incontinent at night. Brittany is allergic to Penicillin and Amoxicillin. She has signed a Durable Do Not Resuscitate Order, indicating she would not like to have life sustaining procedures such as CPR performed on her in an emergency.

Brittany’s Interdisciplinary Care Plan at the adult day center indicates that she needs staff assistance with toileting, dressing, transferring, walking, wheeling, and climbing stairs due to unsteady gait, confusion, and extreme weakness. The staff will provide assistance to her in these areas while at the center. Brittany also needs assistance with meal preparation, housekeeping, laundry, transportation, home maintenance. Although Brittany will not be expected to do these activities at the adult care center, the staff will model how to do these necessities. This will be done by staff preparing meals and providing cooking interventions, keeping the center clean, doing the centers laundry, securing transportation when needed, and maintain safety around the center. The care plan also includes requirements of staff in maintenance of allergies, nutritional intake, continence, hypertension, confusion, TIs, and anxiety. The staff will record solid and fluid intake, alert the family of changes to weight or appetite, and offer a low sodium lunch. Staff will make sure that Brittany does not ingest Amoxicillin or Penicillin while attending the center. A sticker will also be placed on her chart to indicate the allergy. Brittany will wear Depends while attending the center. The staff will assist in cleaning if Brittany is incontinent of bowel or bladder and will monitor for skin break down. The staff will monitor Brittany’s blood pressure two times a month and encourage participation in active programs, such as games, walks, and exercise. To provide minimal confusion, the staff will provide multiple opportunities for therapeutic activities of interest. These activities include card games, current events, gardening, golf, and music. The staff will monitor Brittany for signs and symptoms of a transient ischemic attack. If one should occur, staff will check for signs of a TIA, check will a penlight that eyes are equal size and reacting to the light, call 911, monitor her vital signs, and give a full description of the incident when the EMTs arrive. The staff will also provide a low anxiety environment. They will encourage her to verbalize her worries and participate in current activities or individual, less stimulating activities.

Case Content

A. Assessment

An initial assessment was done with Brittany 2 weeks before the intervention began. The assessments used include the Geriatric Depression Scale (GDS), the Life Satisfaction Scale (LSS), the Mini-Mental State Exam (MMSE), and the Measurable Assessment in Recreation for Resident-Centered Care (MARRCC). Brittany was very willing to answer the questions, but was unwilling to move to a separate room to complete the assessments. She stated, “I will answer your questions right here, but I’m not going into that room with you.” It was early in the morning so there were few staff and other
participants around that could possibly overhear the conversation. I explained that we could do the assessment in her chair, but we would need to keep our voices down so her privacy was not violated.

The assessments revealed that Brittany had a mid-range cognitive function (MMSE=20/30), but displayed signs and symptoms of depression and low life satisfaction. She scored 8/15 on the GDS and 9/32 on the LSS. When asked to explain some of her negative answers, she stated, “My life is done. I’m just ready to die”. When completing the leisure interests section of the MARRCC, Brittany expressed very few current leisure interests. She had several past leisure interests, but when asked if she would like to continue those activities she said, “No, I don’t”. Some current interests she had included watching television, napping, holiday celebrations, and current events. When discussing her physical activity interests, she mentioned that she used to play bowling, golf, and tennis, but that she couldn’t play them anymore because she “can’t walk”. I asked her if she would be interested in learning how she could still play those games sitting down. She paused and said “well, okay”. I explained to her that the Wii is a game you play on the television that detects your movement. It allows you to play sports such as tennis, bowling, and golf without having to stand up. She displayed an interested affect and stated, “Well, that sounds interesting”.

B. Plan

Judging by Brittany’s GDS and LSS scores, I determined that she would benefit from 1:1 recreation therapy. I assessed her problems and needs before creating goals and objectives for her. I found that her problems included signs and symptoms of depression, low life satisfaction, and lack of leisure interests. However, she possessed a strength of many past leisure interests. Using this information, I determined two goals with objectives. The study will focus mainly on the first goal.

1. To decrease signs and symptoms of depression.
   a. To decrease GDS score by 4 points by the end of the intervention.
   b. To increase LSS score by 5 points by the end of the intervention.

2. To increase number of leisure interests.
   a. To express 3 new current leisure interests on the MARRCC by the end of the intervention.
   b. At the end of the intervention, write one new leisure interest that participant wants to learn.

I used information from my literature review, and Brittany’s leisure interest from the MARRCC to decide on an intervention to use. I found several pieces of evidence that supported using the Wii to decrease Brittany’s depressive symptoms. First, Brittany expressed little interest in new activities while completing the MARRCC, but did show some interest when I mentioned the Nintendo Wii. Secondly, My research of the Wii when used with patients that have depression showed that it can significantly improve depression symptoms. Rosenburg found that after a 12 week intervention with the Wii, “37% of participants had ≥ 50% or greater reduction in depressive symptoms”, and, “53% of participants reporting ≥ 50% reduction in symptoms” after 24 weeks (Rosenburg). Thirdly, The document created by SAMHSA also encouraged, “pleasant activity scheduling, in which the older adult is encouraged to engage in a pleasant activity (i.e., gardening, reading a magazine, taking photographs)”(Selecting). Brittany expressed that she used to like to play golf, tennis, and bowling, but can’t anymore because she can’t walk. Since these activities are pleasant to her, I felt that giving her a way to play them again would
increase her positive mood, therefore decreasing depressive symptoms. After researching and assessing her interests and abilities, I felt using the Nintendo Wii as an intervention had promising odds of improving her depressive symptoms.

Rosenburg’s study had the participants play the Wii 3 times a week for 35 minutes each. I was aware that I would only be capable of doing the intervention for a total of 4 weeks and Rosenberg’s study was for 12 weeks. I decided to keep the dosing of 35 minutes, 3 times a week, because I felt increasing it would become too much. It is painful for Brittany to ambulate and she needs assistance by a CNA, so asking her to play for a longer time or more than 3 times a week may have deterred her from wanting to participate. I decided that if the intervention proved to be beneficial, I would find someone to play with her after I became unavailable.

C. Intervention

Brittany was only able to play the Wii twice in a two week period. She agreed three times, but I was unable to play with her due to being needed to watch the floor during a staff meeting. The first time Brittany played the Wii she tried using the remote, but was unsure how to use it. She was able to maneuver the pointer and push a few buttons, but asked if she could watch first. I let her watch me play a game of bowling and golf. I explained the game as I played and had her give me suggestions, such as which club to use during different golf strokes. We reminisced about her past experiences in playing those sports. At the end of the session, Brittany stated, “that was fun. Thank you so much for showing me”. She had a very positive affect and smiled when discussing the experience with other staff afterwards.

Although Brittany showed signs of enjoying watching the Wii, it became increasingly difficult to get her to agree to play again. I asked her in several different ways. I made statements such as, “will you join me”, “would you like to watch me play”, “I want you to play with me”, “I thought you would enjoy playing”, and “I need your help”. However, I was unable to interest her enough to get her to join me. I decided to try asking her earlier in the day. That seemed to prove more affective, but I was unable to complete the intervention, because I was needed on the floor.

I thought having another participant play with Brittany might motivate her to move to the other room. I asked another participant at the center if she would ask Brittany to join us. Brittany declined at first, but the other participant was very persistent and was able to encourage her to come play. Brittany watched the other participant play at first. Another intern was with us and encouraged Brittany to play tennis with the other participant. She agreed to try it. She had a hard time understanding how to swing the remote so that the motion sensor detected her movements. She also had difficulty serving the ball, because she was unsure how to time when to swing. However, when we told her to serve it like she used to, she served the ball as hard as it could go. The other participant exclaimed, “that scared me to death”. Brittany had an accomplished expression on her face and was determined to hit it again. She tried again several times, but was not able to time it right to serve it again. She had the other intern play in her place, but kept a positive affect the rest of the intervention.

I tried asking her to play again the next day, but she declined. She had displayed signs of being in a negative mood that day, such as not talking a lot and making negative comments towards some of the other activities.

D. Evaluation

I found that after two weeks of attempting to play the Wii with Brittany, the intervention had not been implemented enough to provide adequate results. However, this does not mean that the Nintento Wii is not effective in decreasing depressive symptoms. For this particular participant, the
intervention did not interest her enough to motivate her to put in the work (ambulate from the recliner to the other room) to make the activity possible. Although the results were inconclusive, Brittany did show signs of increased mood and positive emotions when playing the Wii. She showed great gratitude and appreciation for being able to play the Wii and made positive comments about the game. She also shared her experience with other staff and participants, indicating that she was excited about getting to play.

If I were to go back and do this intervention again, I would introduce Brittany to the Wii with the rest of the participants at the center. I would implement a large group Wii activity once a week for 4 weeks. This would give Brittany a chance to learn how to play the Wii along side of the rest of the participants. I would then do a Wii small group with Brittany and 3 other participants. I would continue this for 4 weeks, twice a week. I would then ask Brittany if she would like to increase the amount of time she plays the Wii by playing it individually 2 times a week and with the small group once a week. I would continue this for 4 more weeks, making 12 weeks in all. I would assess her progress with the GDS and LSS after each 4 weeks to see if the large group, small group, or small group/1:1 helped decrease depressive symptoms more.
Works Cited


