Music Therapy and Quality of Life: The Effects of Musical Interventions on Self-Reported and Caregiver-Reported Quality of Life in Older Adults with Symptoms of Dementia

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The purpose of this study was to determine the effects of music therapy on the quality of life of people with symptoms of dementia. Both self-reported and caregiver-reported quality of life scores were recorded before and after an eight-week treatment period. A control group of discussion and an experimental group of music therapy were included in the study, with a sample size of $N = 13$. Analysis of the data was done with $t$ tests. No statistical significance was found when comparing the average quality of life scores in the discussion group or the music therapy group from pretest to posttest, in either the self-reported or caregiver-reported scores. Also, there was no statistically significant difference in the changes of scores between the experimental or control group from pretest to posttest in either self-reported or caregiver-reported quality of life scores. Finally, there was no difference in the posttest scores between the self-reported and caregiver-reported quality of life scores. Recommendations for further research include using a larger sample size, comparing the results of participants with different levels of symptoms of dementia, and comparing different types of music therapy, including vocal versus instrumental, live versus recorded music, or active versus passive participation.
MUSIC THERAPY AND QUALITY OF LIFE: THE EFFECTS OF MUSICAL INTERVENTIONS ON SELF-REPORTED AND CAREGIVER-REPORTED QUALITY OF LIFE IN OLDER ADULTS WITH SYMPTOMS OF DEMENTIA

by

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I would first like to thank all of the residents and staff at Grandhaven Living Center. The staff’s willingness to help with residents made my work possible. The residents made me smile every week—I will never forget our time together, making music and enjoying life. I would also like to thank my committee, who helped me bring this study to completion. Without their guidance and encouragement, I would have been lost. Finally, I would like to thank my family, including my parents and husband, for their support, assistance, and encouragement throughout this entire process. I would not have finished this without them.

Alisha Snyder
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INTRODUCTION

According to the U.S. Census Bureau, the number of people age 65 and older is projected to increase by 2.5 times in the next 30 years, due to the aging of the baby boomer generation (“Federal Interagency Forum,” 2008). The number of elderly people age 85 and older may increase from 5.3 million in 2006 to 21 million in 2050. As the elderly population increases, so does the need for appropriate geriatric care. While life expectancy has been increasing and mortality rates have been decreasing (“Federal Interagency Forum,” 2008), there is a pressing need for appropriate support services as older adults reach the end of their lives. Many adults will face a weakening of the senses, changes in mobility, and changes in cognition as they age (Kukull & Ganguli, 2000). One possible cause for changes in cognition is the onset of dementia, which affects close to 5% of elderly adults ages 71-79 (Plassman et al., 2007). To provide the best care for the elderly, and to continually improve interventions, it is important to understand how the elderly perceive their need for extended care, including specific interventions. Very little research was found in the extant literature that connects music therapy, a research-based intervention for people with dementia, and self-reported quality of life (QOL) in people with dementia.

While little research was found specifically connecting music therapy to QOL, there are a number of studies that support the reliability of both self-reported and the caregiver’s perception of QOL in people with dementia. In addition, research in the field of music therapy has shown that music therapy interventions can positively affect aspects
that are generally measured as part of QOL. Therefore, there may be a connection between aspects of QOL and levels of QOL being affected by music therapy interventions that can be measured quantitatively. The research questions that will be addressed in the following study are:

1. Will there be a difference in the mean self-reported and caregiver-reported QOL scores for the control (discussion) group from pretest to posttest?
2. Will there be a difference in the mean self-reported and caregiver-reported QOL scores for the experimental (music therapy) group from pretest to posttest?
3. Will there be a difference in the change in mean self-reported QOL scores between the discussion group and the music therapy group?
4. Will there be a difference in the change in mean caregiver-reported QOL scores between the discussion group and the music therapy group?
5. Will there be a difference in mean QOL scores between posttest self-reported QOL scores and posttest caregiver-reported QOL scores?

While aspects of QOL in people with dementia have been shown to be influenced by music therapy interventions, no studies were found that directly relate music therapy interventions to quality of life. The purpose of this study is to determine if music therapy interventions will positively affect the self-reported QOL and caregiver perception of QOL of people with mild to moderate dementia.
REVIEW OF LITERATURE

Dementia

As the size of the elderly population increases, there is a growing need to understand their physical, mental, and emotional health problems. These include a general weakening of the senses, declining mobility, and changes in cognition (Kukull & Ganguli, 2000). A decline in cognitive abilities is often associated with the onset of dementia. As defined by the Alzheimer’s Association (2010), dementia is a “general term for the loss of memory and other intellectual abilities serious enough to interfere with daily life.” More specifically, dementia is a decline in memory and cognitive functioning in comparison to past performance (McKhann et al., 1984). In addition to memory loss, symptoms include impaired judgment and reasoning, changes in language and motor function, and behavioral changes including depression and agitation (Teri, Logsdon, & McCurry, 2002). Studies show that the prevalence of dementia in the average population of elderly people aged 71 to 79 is close to 5%, and that prevalence for elderly people over age 90 is above 37% (Plassman et al., 2007).

One of the most common causes of dementia is Alzheimer’s disease (AD) (Kukull & Ganguli, 2000). AD is a progressive dementia resulting from plaques and tangles of fibers in the brain, as well as the degeneration of specific nerve cells (McKhann et al., 1984). The Alzheimer’s Association (2010) lists the stages of AD as mild or early-stage, moderate or mid-stage, moderately severe or mid-stage, and severe or late-stage. During mild AD, family and friends may start to notice changes in their loved ones, including a decrease in short-term memory for people and events, a decline in the ability to plan and
organize, and some social withdrawal in challenging situations. Moderate AD is characterized by larger gaps in memory and assistance being necessary for some activities of daily living. Generally, individuals with moderate AD still remember their own personal history and the names of family members. Moderately severe AD tends to be accompanied by more severe changes in personality as well as deficits in cognition. Individuals may start to experience hallucinations, suspicion of caregivers, and may begin to wander and become lost. Finally, individuals with severe AD lose their ability to react to their environment, speak, and control their movements (Alzheimer’s Association, 2010).

**Treatments for Symptoms of Dementia**

While there are no pharmacologic treatments that have been found to cure AD, there are currently four drugs approved by the Food and Drug Administration that may help slow the onset of symptoms of AD (National Institute of Neurological Diseases and Stroke [NINDS], 2010). Aricept, Exelon, and Reminyl have been approved to treat mild to moderate symptoms, while Namenda has been approved to treat moderate to severe symptoms. In addition, some studies have looked at using pharmacologic treatments to reduce inflammation in proteins in the brain, which may contribute to neurological damage in AD (Aisen et al., 2003; McGeer, Schulzer, & McGeer, 1996).

In addition to prescription drugs, there are many nonpharmacologic treatments that have been used to help relieve symptoms of AD. Nonpharmacologic treatments are often chosen based on the symptoms presented by the individual. Because there are no side effects or drug interactions, nonpharmacologic treatments are generally perceived as
safe approaches that often have the added benefit of involving the caregiver directly in 
the treatment (Teri et al., 2002). Teri et al. (1992) developed a behavior assessment 
checklist that helps describe levels of depression, disruption, and memory-related 
problems in people with dementia. This assessment gives caregivers both an overall 
objective view of their loved one, as well as more specific information about the 
behaviors that the loved one is struggling with the most. This can help focus treatment on 
a particular area, behavior, or symptom. One program that focuses on changing specific 
behaviors is called the “A-B-C’s of Behavior Change” (Teri et al., 1998, 2002). 
Caregivers learn that “A” is the trigger or antecedent to “B,” the behavior. “C” is the 
consequence of the behavior. Once the chain of events is understood in this way, changes 
can be made to influence either the antecedent or the consequence. Behavior management 
programs can also help treat agitation, which affects between 70 and 90% of people who 
are diagnosed with dementia (Teri et al., 1998).

Depression is another symptom of AD that can occur in up to 70% of people 
diagnosed with the disease (Teri et al., 2002). Not only does depression affect the mood 
of the individual and the caregiver, it can negatively impact cognition and functional 
ability of the person with AD (Fitz & Teri, 1994). Experts suggest encouraging enjoyable 
activities, redirecting the thoughts and activities of the person with AD, increasing 
enjoyable social activities, and removing sources of frustration (Teri et al., 2002). In 
addition, prescription antidepressants can be prescribed when depressed symptoms are 
present (Small et al., 1997).

Exercise is also an effective way to treat symptoms of dementia (Heyn, Abreu, & 
Ottenbacher, 2004; Logsdon, McCurry, & Teri, 2005; Teri et al., 2003). In a meta-
analysis of 30 studies that used randomized trials to evaluate exercise in adults over 65 with dementia, Heyn et al. (2004) found that those involved in some type of exercise program had increased physical fitness and strength, as well as increases in cognitive functioning and positive behavior. Reducing Disability in Alzheimer’s Disease (RDAD) is an exercise program designed specifically for people with AD (Logsdon et al., 2005). The program consists of endurance training, strength training, and balance and flexibility exercises that are tailored to the individual and taught by home healthcare providers to both the individual with AD and the caregiver. In addition, RDAD includes sessions with just the caregiver to discuss behavior management techniques. Logsdon et al. found that RDAD was an effective way to decrease physical, psychological, and behavioral symptoms in individuals with AD. In a second study using RDAD, Teri et al. (2003) found that a community-based approach to RDAD was effective in increasing levels of physical activity and decreasing rates of depression. Physical function and improvements in depression were maintained 24 months posttest.

Reality orientation is a technique that can be used with people with dementia to improve cognition and behavior. It can be done one of two ways: in a continuous model, where staff members bring concepts of reality into every contact throughout the day, and a classroom model, where a group of people meet to discuss the weather, the day, the date, current events, and other daily details (Spector, Davies, Woods, & Orrell, 2000). After reviewing 6 randomized controlled trials, Spector et al. (2000) found that reality orientation may benefit both cognition and behavior in people with dementia. A second study looked at the effectiveness of maintenance reality orientation, also known as cognitive stimulation therapy (CST), on people with dementia. Orrell, Spector,
Thorgrimsen, and Woods (2005) compared the effects of short-term CST, maintenance CST, and a control group not receiving CST. They found that individuals in the maintenance CST group continued to show improvements in cognition, whereas cognition declined after discontinuation of CST in the short-term group. A similar study of CST by Spector et al. (2003) demonstrated increases in cognition as measured by the Mini-Mental State Examination, as well as improvements in a quality of life measurement.

**Quality of Life**

It is important to periodically assess whether or not the symptoms of elderly people with dementia are being managed well and treated appropriately. One such assessment is the measure of quality of life for the individual. Quality of life (QOL) is a vague term that is defined depending on the context in which it is used. QOL can cover multiple domains, including physical, social, emotional, cognitive, financial, and spiritual. The World Health Organization (WHO) defines QOL as:

> The product of the interplay between social, health, economic and environmental conditions which affect human and social development. It is a broad-ranging concept, incorporating a person’s physical health, psychological state, level of independence, social relationships, personal beliefs and relationship to salient features in the environment. (WHO, 2004)

Ultimately, measures of QOL can be used to help determine both if a treatment was effective and the overall cost of the treatment compared to its effectiveness (Selai & Trimble, 1999).

Providing a concise definition is made more difficult by the subjectivity of each of the aforementioned domains. As people age, their outlook on these domains may be
altered by losses in independence, physical functioning, and social roles, thus changing their subjective QOL. Instruments have been constructed to determine QOL for the well elderly, measuring both single domains and multiple domains (Volicer & Bloom-Charette, 1999), as well as general QOL versus health-specific QOL (Lawton, 1991). It is difficult to make comparisons across studies since each study used a different instrument with a slightly different population and a different definition of QOL.

Quality of Life and Dementia

The QOL definition and domains measured may again change if a person develops dementia. Whitehouse and Rabins (1992) state that the difficulty in measuring QOL in an individual with dementia is that the very ability to assess one’s own QOL and communicate the assessment is affected by the disease. Because of this, QOL is usually judged both objectively and subjectively. The objective perspective of QOL involves social norms, whereas the subjective perspective of QOL may demonstrate mental shifts that have accommodated for changes in QOL (Lawton, 1991). However, the question remains as to whether an individual with dementia can accurately discuss QOL, or if caregivers and family members should report QOL for the individual.

Lawton, Van Haitsma, Perkinson, and Ruckdeschel (2000) state two reasons why it is important to let individuals with dementia self-report their QOL. First, all people, including people with dementia, have the right to enjoy good moments and quickly pass through bad moments. Secondly, assuming that everyone has good and bad moments, we know that people’s own preferences shape these moments. In addition, even people with dementia have some way of expressing these likes and dislikes, most likely through
emotion. Allowing people with dementia to express their QOL can give insight to caregivers about the effectiveness of interventions used in their treatment (Arnold, 1991). QOL reported by caregivers also has an important place in the care of people with dementia. Caregiver-reported QOL gives a consistent measure of QOL even as the disease progresses. However, caregiver-reported QOL can be influenced by the caregiver’s expectations for the individual, the caregiver’s emotional and psychological state, as well as their own thoughts and feelings about caring for the individual. Studies have shown that caregiver-reported QOL is consistently lower than self-reported QOL in people with dementia (Logsdon, Gibbons, McCurry, & Teri, 2002; Karlawish, Casarett, Klocinski, & Clark, 2001). Therefore, it is essential to understand the bias and perspective of the person reporting QOL.

Smith et al. (2005) studied the results of self-reported and caregiver-reported health-related quality of life (HRQL). After identifying and categorizing the conceptual frameworks that both groups considered to be important in HRQL, they compared the results. They found that although individual and caregiver responses were similar in each of the domains (daily activities, health and well-being, cognitive functioning, social relationships, and self-concept), some responses were only included in the individual group. Also, the caregivers had a difficult time not projecting their own frustrations onto the HRQL of the individual with dementia. Smith et al. concluded that while caregiver reports may be appropriate in some circumstances, self-reported HRQL may be more accurate for people with dementia.
Quality of Life Assessments

A variety of QOL tests have been developed to measure both self-reported and caregiver-reported QOL for the well elderly and people with dementia. One such test is the Sickness Impact Profile (SIP). This instrument measures functioning across twelve health-related domains and can be self-administered or administered by a trained interviewer. The SIP has been shown to be reliable and valid across many populations, including the elderly, but gives a narrow view of QOL based only on health (Arnold, 1991).

The Lancashire Quality of Life Profile (Residential) (LQOLP(R)) is an adapted instrument from the original Lancashire Quality of Life Profile (Mozley et al., 1999). It measures life-related domains, such as leisure, family relations, health, and living situations in people with dementia. These areas can be individually scored as well as scored together for a global QOL score.

The Quality of Life Assessment Schedule (QOLAS) was created as an instrument that can be tailored for each individual subject (Selai, Trimble, Rossor, & Harvey, 2000). It includes questions regarding the following domains: physical, psychological, social/family, daily activities, and cognitive. This assessment gives both qualitative information by allowing the subject to state what is important to them, as well as quantitative information by asking each subject for ratings in the various domains. It has been found to be valid and reliable in early studies, as well as the ability to be more sensitive to changes that occur post-treatment.

The Alzheimer Disease Related Quality of Life (ADRQL) uses similar domains to the QOLAS, including social interaction, awareness of self, feelings and mood, and
enjoyment of activities. It was developed with two specific objectives: to develop an instrument that would be consistent with other health-related quality of life instruments, and to develop an instrument that would yield quantitative results (Rabins, Kasper, Kleinman, Black, & Patrick, 2000). The domains and items within the domains are weighted to give a more sensitive for each individual.

In 1999, Brod, Steward, Sands, and Walton described a 29-item instrument specifically designed to measure quality of life in people with dementia. Named the Dementia Quality of Life (DQoL) instrument, it was first tested on 99 subjects and found to be both reliable and valid. The DQoL uses the domains of self-esteem, positive affect, negative affect feelings of belonging, and sense of aesthetics, to determine a self-reported quality of life for people with dementia. The authors firmly believe that self-reported QOL is a necessary measurement so that people with dementia can be appropriately assessed and for whom appropriate care can be given.

Smith et al. (2003) compared the results of a health-related quality of life survey given to people with dementia and the results of the same survey given to the caregivers and nurses of these people. They found that people with mild and moderate dementia could give an accurate account of their personal quality of life, but that as dementia progressed to severe, there were unacceptable areas of missing data. When both self-report and caregiver observation were used to determine quality of life, the data tend to be more accurate.

Logsdon, Gibbons, McCurry, and Teri (2000) developed the Quality of Life-AD (QOL-AD) instrument to rate both the individual and caregiver responses to questions about quality of life. Thirteen questions are asked, covering physical health, energy,
mood, living situation, memory, family marriage, friends, self, ability to do chores, ability to do things for fun, money, and life as a whole. Subjects are asked to give a score of 1 to 4, with “1” being poor and “4” being excellent. Concise wording, as well as a brief interview and the option of combining caretaker and patient scores make the QOL-AD an appealing instrument for clinical trials (Selai & Trimble, 1999). Many studies have used the QOL-AD and found it to be both valid and reliable (Aisen et al., 2003; Hoe, Katona, Roch, & Livingston, 2005; Logsdon et al., 2002; Moyle, Mcallister, Venturato, & Adams; 2007; Orrell et al., 2005; Selwood, Thorgrimsen, & Orrell, 2005; Spector et al., 2003; Vogel, Mortensen, Hasselbalch, Andersen, & Waldemar, 2006).

When reviewing the various QOL instruments that are available, there are certain similarities in measured characteristics. These include levels of physical functioning (Brod et al., 1999; Logsdon et al., 2000; Selai et al., 2000; Smith et al., 2005), levels of social interaction and participation (Brod et al., 1999; Logsdon et al., 2000; Rabins et al., 2000; Selai et al., 2000; Smith et al., 2005), positive and negative feelings (Brod et al., 1999; Logsdon et al., 2000; Rabins et al., 2000; Selai et al., 2000; Smith et al., 2005), and cognitive functioning, including language and memory (Brod et al., 1999; Logsdon et al., 2000; Selai et al., 2000; Smith et al., 2005). These characteristics are common goal areas when trying to improve QOL in people with dementia.

**Music Therapy**

Many nonpharmacologic treatments are utilized to help relieve symptoms of AD. Nonpharmacologic treatments are often chosen based on the symptoms presented by the individual. Because there are no side effects or drug interactions, nonpharmacologic
treatments are generally perceived as safe approaches that often have the added benefit of involving the caregiver directly in the treatment (Teri, Logsdon, & McCurry, 2002). Music therapy is one such treatment. According to the American Music Therapy Association (2010), music therapy is defined as “… the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program.”

**Music Therapy and Dementia**

Several articles have been published reviewing the research literature describing the use of music in the care of elderly people, particularly those with dementia (Brotons, Koger, & Pickett-Cooper, 1997; Kneafsey, 1997; Koger, Chapin, & Brotons, 1999; Lou, 2001; Sung & Chang, 2005). Koger, Chapin, and Brotons (1999) reviewed 21 studies that met the qualifications of (a) involving more than 2 subjects, (b) being research-based papers, and (c) including a control group and specifically testing for an aspect of music therapy efficacy. A mean effect size of 0.7879 was found, with a confidence interval of 0.62 to 0.95. This indicates that there was a significant effect of music therapy on improving symptoms of dementia. Individual studies reported an improvement in social behaviors and vocalizing, and a reduction in wandering, irritability, and agitation.

Lou (2001) studied the results of seven studies that have used music to decrease agitated behavior in elderly people with dementia. Based on the findings from these studies, she concluded that music is a useful intervention for decreasing agitation. However, there were many variables in how the music was presented to the subjects. Four of the seven studies used background music and three used individually preferred
music. There were also many types of music included in the background music, including relaxing music, pop, rock, stimulation music, and sedative music. The music was presented at various times, including lunchtime, dinnertime, during bathing, and during unstructured time. While this study shows a trend toward the usefulness of music to decrease agitation in elderly people with dementia, the findings are inconclusive depending on types of music used, when it is presented, and the preferences of the subjects.

Goddard and Abraham (1994) considered the specific symptom of agitation during meals exhibited by elderly subjects with cognitive impairment. They studied 29 subjects during the noontime meal as the subjects participated in a four-week experiment. The first week was used for baseline observation. The second week introduced relaxing music. During the third week, music was removed, and music was reintroduced during the fourth week. A significant change in agitated behaviors was discovered. Agitated behaviors decreased by 54% from week 1 to week 2. When the relaxing music was removed, there was a 38% increase in agitated behaviors. During the fourth week, there was a decrease of 43% from the levels at during week 3. Overall, there was a total reduction of agitated behaviors of 63.4% from week 1 to week 4. The authors also noted a total reduction of 74.5% of verbally agitated behaviors. This demonstrates a strong connection between the levels of agitation in elderly people and the effects of music on those levels of agitation. Overall, these studies have indicated that music is a viable treatment to help reduce levels of agitation and anxiety in elderly people with dementia.

According to de l’Etoile (2002), one of the most consistently reliable ways of reducing agitation and inducing mood states is by using music. Many of the faults of
traditional mood induction procedures, including the Velten Mood Induction Procedure, can be avoided using musical mood induction. Musical mood induction has a higher success rate than non-musical methods and works equally well with male and female subjects. Also, the mood that is being induced is not as obvious in musical mood induction, which can lower the rate of subjects following the desire of the experimenter.

de l’Etoile (2002) tested musical mood induction by asking subjects to recall internally-generated information under four conditions: (1) musical mood induction before encoding of information, (2) musical mood induction before recall of information, (3) no musical mood induction before encoding or recall, and (4) musical mood induction before encoding and recall. She found that musical mood induction was effective for the majority of subjects. Subjects in the second condition reported the greatest change in mood between encoding and recall. This significant change in mood may have inhibited their recall of information. Subjects in the fourth condition were able to recall more information than subjects in the other conditions, suggesting that musical mood induction before encoding and recall assisted the recall. The results of this study help strengthen the idea of mood state-dependence. If a positive mood can be induced through music, it may activate a part of the associative network of thoughts, ideas, events, and emotions that leads to a positive mood. In summary, musical mood induction can be used to cue memory and recall information that was first encoded in the same mood state.

When used in a therapeutic setting with clients diagnosed with dementia or AD, music can affect change in memory as well as social interaction and language functioning. Brotons and Koger (2000) studied the effects of music therapy versus group conversation in maintaining and improving language function in people with dementia.
Twenty-six subjects were part of a counterbalanced design, where one group first experienced music therapy for two weeks and the other group was first treated in a conversation group. This was reversed for the second part of the study. Subjects were evaluated by the Western Aphasia Battery prior to treatment, after the first treatment condition, and after the second treatment condition. Analysis of the results suggests that subjects performed significantly better under the music condition than the conversation condition, in both speech content and speech fluency. This study supports the position that music therapy is beneficial in improving speech and fluency in persons with dementia.

In addition to the deterioration of language skills, individuals with dementia also face the deterioration of social skills. Olderog Millard and Smith (1989) hypothesized that physical and social interactions of people with AD would increase during and after music therapy sessions as compared to discussion sessions and that verbal participation would increase in music therapy sessions as compared to discussion sessions. Ten subjects diagnosed with AD were chosen to participate in the study in either the experimental group that participated in group singing or the control group that participated in discussion. The design of the experiment was a reversal ABABA, with A being the control and B being the experimental group. Each subject was his or her own control. The authors found that physical and social behaviors significantly increased during and after music therapy sessions. The experimenters also found that sitting and walking with others during the session and walking with others after the session increased in the experimental group. In addition, they reported that participation was significantly higher in the music group as compared to the discussion group. Positive
interaction within the subject group and with the experimenters may also lead to a positive mood state, which in turn can produce positive memories. Therefore, it is reasonable to conclude that social interaction, whether positive or negative, can affect memory.

Just as social behaviors can be affected by dementia, so can cognitive abilities and short-term memory. Gregory (2002) studied the effects of music listening on the attention of older adults with cognitive impairments including dementia, AD, and complications from stroke. Attention to the environment is a necessary part of short-term memory. Included in this study were 12 older adults with a cognitive impairment, 6 older adults without a cognitive impairment diagnosis, and 6 college students. The second two groups were used as a control for the older adults with cognitive impairments. Each subject listened to a cassette tape that had seven excerpts from well-known songs with a period of silence in between. Subjects used a Continuous Response Digital Interface (CRDI) to indicate what song they were hearing or whether it was a period of silence. There was a section of the dial labeled “WAIT” for the periods of silence. The author found that, though the group of older adults responded more slowly to changes in music, they were still able to stay focused on the music for the 3.5 minute duration of the experiment. When asked about the task afterwards, many subjects said that the game was enjoyable. This suggests that older adults with cognitive impairments are able to focus on structured musical interventions and that the task is an enjoyable one. In addition, the author concludes that structured music listening activities can help maintain attention in elderly people with cognitive impairments and may be used to encourage socialization among the elderly participants.
When attention and focus are achieved, it is possible to address memory problems in a person with AD. Irish et al. (2006) studied the effects of music being used to improve recall of autobiographical memories (ABM). They used 10 subjects with mild AD and matched them with 10 healthy elderly individuals. Each subject was exposed to both a musical condition and a silent condition as background for taking part in the Autobiographical Memory Interview, used to measure ABM in elderly populations. This test asks questions about major events in childhood, early adult life, and recent life. The authors found a significant effect of music on recall of ABM in patients with AD. There was also a reduction of anxiety, measured by galvanic skin response, in subjects in the musical condition. Because of multiple significant results, there is ambiguity as to whether the reduction in anxiety, brought on by music, increased recall, or if the music itself increased recall of ABM.

In addition to recalling autobiographical memories, music therapy has been used to assist individuals with dementia in recalling concepts of day, year, time, and place. Riegler (1980) compared a reality orientation program paired with music to a traditional, non-musical reality orientation program. Both treatment programs emphasized the same material, and worked toward teaching the same objectives during the eight-week treatment trial. After analyzing pre- and post-test data, the author found that the experimental group showed marked improvement in answering questions about time, place, and person, compared to the non-musical reality orientation program.

Lipe (1991) describes a case study in which an individual diagnosed with dementia participated in music therapy. After an interview to determine musical preferences, the therapeutic goals of maximizing existing cognitive function and
increasing self-expression through music were established. Sessions were held weekly in which therapist brought recorded music to listen to, sing with, and discuss. After two months of weekly sessions, nursing staff noticed more positive behaviors and affect after music therapy sessions. Over the three-year treatment period, and as the subject’s disease progressed, the subject continued to make appropriate comments related to the music, despite increased auditory hallucinations. Lipe notes that the music helped reorient the subject which reduced agitation, as well as increasing satisfaction and sustaining attention.

Takahashi and Matsushita (2006) performed a two-year study on the effects of music therapy on elderly diagnosed with moderate to severe dementia. Twenty-four subjects participated in once weekly music therapy sessions involving greetings, light exercises, vocalization, singing songs, and playing in a concert. Nineteen subjects did not receive music therapy and were used as controls for the study. The researchers measured the subjects’ systolic blood pressure, cortisol levels in saliva, and intelligence before and after the first session, after 6 months, and after one and two years. Although no statistically significant differences were found, the control group had a slight increase in cortisol levels, indicating physical or mental stress, when compared to the experimental group. The mean systolic blood pressure of the control group significantly increased over the two-year period as compared to the experimental group. An increase in systolic blood pressure can lead to a higher risk of cardiovascular and cerebral bleeding problems. In addition, intelligence scores were maintained in the experimental group, whereas a decline in scores was seen in the control group. Overall, the authors found a positive long-term effect for music therapy in elderly people with dementia.
Music Therapy and Quality of Life

Research has shown that the right hemisphere is generally the area of the brain that responds to music, and that this area is among the most frequently preserved parts of the brain in people with dementia (Sifton, 2000). Therefore, music can be an important medium for bringing pleasure through familiar music, bringing comfort and peace to promote sleep, as well as distraction during times of agitation. These are important aspects in enhancing QOL. In addition, Logsdon, McCurry, and Teri (2007) found that programs that increase pleasant events, improve mood, and decrease negative behaviors such as agitation are use interventions in helping to improve QOL. Both Teri, Logsdon, and McCurry (2002) and Small et al. (1997) include musical interventions as methods for enhancing QOL.

Using anecdotal evidence, as well as information regarding specific techniques and research, Hanser (1999) described how music therapy can be beneficial to those with dementia. She identified specific interventions that can be especially useful when planning music therapy sessions to address aspects of QOL, including singing familiar songs, dance and movement activities, performance, improvisation, song-writing, and relaxation. The interventions can be adapted to fit group or individual music therapy, music therapy with families, and music therapy at the end of life. She concluded that music therapy “can enhance the overall quality of life” (Hanser, 1999, p. 162).

In summary, while certain aspects of quality of life in people with dementia have been shown to be positively affected by music therapy interventions, the extant literature directly linking specific music therapy interventions with enhanced quality of life is limited. The purpose of this study is to determine if music therapy interventions will
positively affect the self-reported QOL and caregiver perception of QOL of older adults with symptoms of dementia.

**METHOD**

**Participants**

Participants of this study were residents living in a Midwestern licensed adult foster care facility that provides assisted living services to the elderly. The majority of the participants had decreased short-term memory, but could perform many activities of daily living on their own. Some participants needed assistance with activities of daily living and had larger gaps in memory. Overall, participants were in the early to moderate stages of dementia. Participants enjoyed a variety of activities and services at the facility, including group games, exercise groups, discussion and reminiscence groups, musical concerts, hair and nail services, religious services, crafts, movies, outings, and other special events. Residents were encouraged to attend activities, but were not required to do so. Participants had not experienced music therapy before this study.

Before participants were solicited, the study was reviewed and approved by the researcher’s thesis committee, the Human Subjects Institutional Review Board at Western Michigan University (see Appendix A), and the Director of Clinical Services at the facility. After the study was approved, all 80 residents in the facility were invited to participate via a letter from the researcher. The letter briefly described what residents would need to do to participate in the study and that they would need to meet specific criteria to participate. In addition, the facility administrator and life enrichment coordinator verbally invited the residents to participate. Residents who had a legal
representative were invited to participate after their legal representative gave consent. Legal representatives received a letter in the mail from the researcher, explaining the study and inviting their loved one to participate. Of the 80 residents invited to participate, 40 residents signed informed consent forms or assent forms (see Appendices B and C).

After consenting to participate, each participant was screened using the Mini-Mental State Exam (MMSE), a common standardized test in evaluating levels of dementia (Folstein, Folstein, & McHugh, 1975). Administration of the MMSE took approximately 10 minutes and measured orientation to time and place, language and recall abilities, registration, attention, and praxis. Thirty points were possible, with a score under 24 being abnormal. Participants scoring between 10 and 25 were randomly assigned to either the control or experimental group. While some studies have shown that the QOL-AD is valid and reliable for subjects with MMSE scores as low as 3, more conservative studies have limited the score range to between 10 and 25 (Selai & Trimble, 1999). Of the 40 residents that signed consent forms, 33 were able to complete the MMSE, and 25 residents qualified to continue with the study. Those who did not qualify for the study were still invited to join either the music therapy or discussion sessions, but were not asked to answer any further questions.

**Instrument**

The instrument chosen for this study was the Quality of Life-AD (QOL-AD) (Logsdon et al., 2000). The QOL-AD contains only 13 questions covering physical health, energy, mood, living situation, memory, family, marriage, friends, self, ability to do chores, ability to do things for fun, money, and life as a whole. Subjects were asked to
rate each item on a scale of 1 to 4, with “1” being poor and “4” being excellent. The scores for each question were added and divided by 52 (the total possible). In cases where participants were not able to answer a question, the total score was divided by the possible score. All scores were recorded in percentages for consistency. Concise wording, as well as a brief interview and the option of combining caretaker and patient scores made the QOL-AD an attractive instrument for clinical trials of individuals with dementia and an MMSE score between 10 and 25 (Selai & Trimble, 1999).

Thorgrimsen et al. (2003) assessed the QOL-AD for reliability and validity. The authors assessed two separate samples of people with dementia, as well as conducted five focus groups with people with dementia and caregivers, and interviewed 71 health care professionals. They found that the instrument has good content validity with all items necessary and no additional questions required. It correlated with other similar well-established instruments. It was found to have very good interrater reliability across all of the questions, as well as good test-retest reliability. The authors concluded that, “the QOL-AD is well placed to become the mainstay of QOL measures in dementia” (p. 207). Multiple studies have used the QOL-AD and found it to be both valid and reliable for individuals with dementia (Aisen et al., 2003; Hoe et al., 2005; Logsdon et al., 2002; Moyle et al.; 2007; Orrell et al., 2005; Selwood et al., 2005; Spector et al., 2003; Vogel et al., 2006).

**Procedure**

After signing consent forms, each participant was administered the MMSE by the researcher. This was done in order to determine whether the subject was eligible to
participate in the study. Participants who scored between 10 and 25 on the MMSE were randomly assigned to either the control or experimental group. The week before music therapy sessions began, the researcher asked each participant to complete the QOL-AD assessment. Questions were read orally by the researcher, and verbal responses were recorded by the researcher. For participants that could easily read the assessment on their own, the questions were not read aloud, but the verbal responses were still recorded by the researcher. Some participants did not understand the question the first time it was read; the researcher rephrased the question according to the guidelines of the assessment until the participant understood what was being asked.

Treatment sessions, for both the experimental and control groups, were held every Monday morning after breakfast for eight weeks. While some longitudinal studies reported changes in affect and aspects of QOL over many months (Selwood et al., 2005; Takahashi & Matsushita, 2006), Lipe (1991), Riegler (1980), and Olderol Millard and Smith (1989) found that involvement in music therapy visibly changed behavior and memory of participants in their respective studies in as little as two months. Both the control and experimental group sessions lasted approximately 45 minutes and included interventions that addressed a variety of characteristics found in QOL tests, including energy level, mood, and memory.

Both the control and experimental groups used the same visuals for each session. While there was no specific script, the same list of key topics and questions were used in both the control and experimental groups (see Appendix D). Each experimental session was led by the researcher, a board-certified music therapist and was planned using the structure set forth by Hanser (1999). This meant that every experimental session included
a greeting song, vocal and physical warm-ups, movement, singing of familiar songs, performance, improvisation, and a closing song. Music was chosen based on the age of the participants in the experimental group (see Appendix D), so that music was familiar and from the young adult time period of the participants’ lives (Gibbons, 1977; Moore, Staum & Brotons, 1992).

The control group sessions were led by a member of the activity staff at the facility. Each control session addressed the same characteristics of QOL as the experimental sessions, including energy level, mood, and memory, but did so without musical interventions. Both the control sessions and experimental sessions covered the same materials; however, only the experimental group included music. After eight weekly sessions, the participants in both the experimental and control groups were again asked to take the QOL-AD. Throughout the treatment period, all participants, both experimental and control, continued to participate in activities besides the treatment that were provided by the assisted living facility. See Appendix E for detailed session plans for both the experimental and control groups.

To compare self-reported and caregiver perception of QOL, the QOL-AD was given to a caregiver for each resident before the study began, and again at the end of the eight-week treatment period. Caregiver was defined as an individual who interacts with and assists the participant with daily activities at least three times per week. In this study, the caregiver for each participant was a staff member of the facility. All staff members had been trained to work in a geriatric care facility, but did not need to have a specific certification. Staff members were asked to participate in the study via a letter from the researcher, and those who agreed to participate signed informed consent forms (see
Appendix F). With the help of the facility life enrichment director, who was familiar with which wing each staff member typically worked in, the caregivers were paired with a participant for whom they cared on a regular basis. The QOL-AD was then given to the caregiver, and the caregiver was asked to fill it out and return it within one week to the researcher. The same procedure was followed at the end of the eight-week treatment period. The same caregiver was paired with the same resident before and after the treatment period, with the exception of one caregiver, who terminated employment at the facility during the treatment period. For this participant, a new caregiver was assigned for the QOL-AD after the treatment.

RESULTS

In this study, 80 residents of a Midwestern assisted living facility were invited to participate in a study investigating the effects of musical interventions on self-reported and caregiver-reported QOL for older adults with symptoms of dementia. Of the 80 residents invited to participate, 25 residents qualified for the study and agreed to participate. Participants had to attend 7 out of 8 weekly sessions as part of a music therapy group or a discussion group in order for their data to be included in the analysis. They were asked to answer a short QOL assessment before the treatment began and after the treatment was completed. Thirteen participants completed the study—seven in the experimental group, and six in the control group. The 12 that did not complete the study stopped because of a number of factors, including health concerns, conflicting appointments, family events, and deciding not to continue.
The results of this study were analyzed using $t$ tests. While the sample size was small, the $t$ test can still be cautiously used to analyze hypotheses. While the ANOVA was considered, the $t$ test seemed to be a better choice of statistical analysis due to the nature of the data. All comparisons were pretest to posttest or comparing two groups on one aspect, and all data were intervallic. The construct validity of the QOL-AD was high based on the participants reactions compared to other similar settings.

The first research question that was considered was if there would be a difference in the mean self-reported and caregiver-reported QOL scores for the control (discussion) group from pretest to posttest. The null hypothesis, that there would be no difference in mean scores, was accepted. The $t$ test examining the difference between the mean self-reported QOL scores for the discussion group ($t = 1.25, p = .27$) showed that there was no statistically significant difference from pretest to posttest. In a similar comparison, the $t$ test examining the difference between the mean caregiver-reported QOL scores for the discussion group ($t = -1.38, p = .23$) showed that there was no statistically significant difference from pretest to posttest (see Figure 1). The median percentage of caregiver scores went up from pretest to posttest, whereas the median percentage of self-reported scores went down from pretest to posttest, indicating that the caregivers rated QOL higher than the individuals.

The second research question that was considered was if there would be a difference in the mean self-reported and caregiver-reported QOL scores for the experimental (music therapy) group from pretest to posttest. The null hypothesis, that
there would be no difference in QOL scores in the experimental group, was accepted. The
\( t \) test examining the difference between the mean self-reported QOL scores for the music
therapy group (\( t = 1.17, p = .28 \)) showed that there was no statistically significant
difference from pretest to posttest. The \( t \) test examining the difference between the mean
caregiver-reported QOL scores for the music therapy group (\( t = -1.34, p = .22 \)) showed
that there was no statistically significant difference from pretest to posttest (see Figure 2).
The graph shows that the median percentage of QOL in each group, self-reported and
caregiver-reported, went up from pretest to posttest, indicating that both groups reported
a small increase in QOL over the treatment period. Overall, the range of caregiver-
reported percentages was higher from pretest to posttest, whereas the range of self-reported percentages was lower.

Figure 2. QOL scores for experimental group.

The third research question that was considered was whether there would be a difference in the change in mean self-reported QOL scores between the discussion group and the music therapy group. The null hypothesis, that there would be no difference in the change in mean self-reported QOL scores between the discussion group and the music therapy group, was accepted. When comparing the difference in the change in mean self-reported QOL scores between the discussion and music therapy groups, the \( t \) test \( (t = -0.50, p = .63) \) found that there was no statistical significance between the two
groups (see Figure 3). While the change in average QOL percentages was negative in both groups, the experimental group was slightly less negative. A negative change means that the QOL percentage went down from pretest to posttest. Often with this population it is important to work to maintain QOL, and not to necessarily try to improve it. Therefore, because the experimental group was slightly less negative, their QOL may have been maintained more than the control group. Also, the range of change of QOL percentages in the experimental group was overall higher than the control group, indicating that some participants did have a positive change in QOL score.

Figure 3. Change in self-reported QOL scores.
The fourth research question that was considered was if there would be a difference in the change in mean caregiver-reported QOL scores between a discussion group and music therapy group. The null hypothesis, that there would be no difference in the change in mean caregiver-reported QOL scores between the discussion group and music therapy group, was accepted. When comparing the difference in the change in mean caregiver-reported QOL scores between the discussion and music therapy groups, the $t$ test ($t = -0.40, p = .70$) reveals that there was no statistical significance (see Figure 4). While the median change in mean QOL percentages was lower in the experimental group, there was a much broader range of scores in the experimental group, suggesting that some caregivers’ scores went up from pretest to posttest.

*Figure 4.* Change in caregiver-reported QOL scores.
The fifth research question that was considered was if there would be a difference in mean QOL scores between posttest self-reported QOL scores and posttest caregiver-reported QOL scores. The null hypothesis, that there would be no difference in QOL scores, was accepted. A $t$ test ($t = 0.10, p = .92$) found that there was no statistical significance between the two groups (see Figure 5). While it appears that the average posttest caregiver-reported QOL score was a little lower than the self-reported QOL score, the general trend of scores was higher for caregivers than it was for individuals.

![Self- and caregiver-reported QOL scores](image)

*Figure 5. Self- and caregiver-reported QOL scores.*
DISCUSSION AND CONCLUSIONS

Thirteen participants completed this study; 6 in the control group, and 7 in the experimental group. When comparing self-reported and caregiver-reported QOL scores in both the control and experimental groups, there were no statistical differences found. There was no statistical difference found between the change in self-reported QOL scores between the control and experimental groups. There was no statistical difference found between the change in caregiver-reported QOL scores between the control and experimental groups. Finally, there was no statistical difference between the mean self-reported and caregiver-reported posttest QOL scores.

Because of the small sample size of this study, any statistical test used to analyze results would have a very small chance of detecting a statistically significant change. This is not uncommon in clinical studies that use vulnerable populations like older adults with symptoms of dementia (McHugh, Gardstrom, Hiller, Brewer, & Diestelkamp, 2012). One possible explanation for the small sample size was the lack of involvement by residents’ legal representatives. While only about 10 of the 80 residents at the facility had a legal representative, only one called with questions, and none requested that their resident be allowed to participate in the study. Some family members were seen in the facility and asked in person; this resulted in one legal representative signing an informed consent form. However, many residents who would have qualified for the study attended groups but were not included in the study because of the lack of a legal representative’s signature.

While the quantitative data revealed no statistical significance, there were several examples of client behaviors that indicated the music therapy group may have been more
effective than the discussion group. For example, the discussion group lost more participants than the music therapy group. In fact, residents not participating in the study, when given the opportunity to join one of the groups, exclusively chose to join the music therapy group, with the exception of one resident. The activities staff reported that it was easier to get residents, especially lower-functioning residents, to attend and participate in the music therapy group than the discussion group. Because of this, the staff decided to implement this program on their own after the study was completed. After one session, a resident sent to the researcher, “Thank you so much for the music. You made my day.”

While not statistically significant, it is interesting to note that the caregiver-reported QOL scores appeared to go up in the posttest more than the self-reported QOL scores. By definition, the caregiver worked with each resident closely, and therefore knew which group, either control or experimental, the participant was in. It is possible that knowing that the resident was participating in an extra group, and understanding that the purpose of the study was to compare QOL scores from pretest to posttest, the caregivers may have unknowingly rated the participant higher at the end of the treatment period than at the beginning.

This brings into question the difference between self-reported and caregiver-reported QOL. While the caregivers may have understood that new treatment could potentially have benefits for their resident, this knowledge may have skewed what they viewed as the outcome. This questions the reliability of a caregiver reporting on an individual. However, because the individuals may not have remembered the new treatment when asked about QOL, it may not have affected them. In addition, it is possible that the treatment was only enough to maintain QOL, not increase QOL, for the
individual. Therefore, it is important to look at both caregiver-reported and self-reported data when making decisions about the care of an individual with symptoms of dementia. This will help to eliminate the bias that is inherent in both perspectives.

**Recommendations for Further Research**

While efforts were made to be as thorough as possible during the research process, there were several limitations in this study. Further studies should use a larger group of subjects from a variety of types of facilities to determine the effectiveness of music therapy in QOL across more than one geriatric group living facility. Having a larger sample size would also increase the power of the statistical analysis. Part of increasing the sample size could involve having better communication with legal representatives of residents.

Even with a small sample size ($n = 10$), a study conducted by Olderog Millard and Smith (1989) saw positive changes in from the experimental music therapy group. One difference between this study and the Olderog Millard and Smith study is the dosage of the control and experimental treatment; that is, how often subjects participated in treatment. It is possible that meeting twice a week, as in the Olderog Millard and Smith study, is a better dosage for this population. Participants also met for a shorter period of time (30 minutes vs. 45 minutes), which may have helped participants stay focused and actively engaged during the entire session. Studying the appropriate dosage of music therapy is an important part of future research.

Another aspect of expanding this area of research would be to use a different type of control group, to see if that had a different effect on the results. Music therapy groups
could be compared to a group with background music, or a different type of therapy. Groups could compare different techniques in music therapy, including vocal versus instrumental, live versus recorded music, or active versus passive participation.

In addition to changes in how groups are arranged, further studies could focus on a specific range of MMSE scores to determine if individuals with mild dementia benefit more than individuals with moderate or severe dementia, or vice versa. It would be interesting to see if there is a difference between groups with a mixture of MMSE scores versus groups with a very small range of MMSE scores.

Future studies that focus on this topic should strive to hire a clinician to run both the control and experimental groups. This would reduce bias from the researcher when running the groups, as well as reduce the bias of using different leaders for the separate groups.

Further studies could also focus on the caregivers, possibly using family members as caregivers. If this study was done with participants who live at home and are cared for by a family member, it would be possible for the family member to bring them to a group session, but not know if they were participating in the control or experimental groups.
REFERENCES


Appendix A

Human Subjects Institutional Review Board
Letter of Approval
Date: June 5, 2012

To: Brain Wilson, Principal Investigator
    Alisha Synder, Student Investigator for Thesis

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number 12-04-21

This letter will serve as confirmation that your research project titled “Music Therapy and Quality of Life; the Effects of Musical Interventions on Self-Reported and Caregiver Reported Quality of Life in Older Adults with Symptoms of Dementia” has been approved under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may only be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., you must request a post approval change to enroll subjects beyond the number stated in your application under “Number of subjects you want to complete the study”). Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

Re-approval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: May 16, 2012
Appendix B

Informed Consent Form for Individuals
Western Michigan University  
Music Department

Principal Investigator: Brian Wilson, MM, MT-BC  
Student Investigator: Alisha Snyder, MT-BC  
Title of Study: Music therapy and quality of life: The effects of musical interventions on self-reported and caregiver-reported quality of life in older adults with symptoms of dementia

You have been invited to participate in a research project titled "Music therapy and quality of life: The effects of musical interventions on self-reported and caregiver-reported quality of life in older adults with symptoms of dementia." This project will serve as Alisha Snyder's thesis for the requirements of the Masters of Music in Music Therapy. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely and please ask any questions if you need more clarification.

What are we trying to find out in this study?  
The purpose of this study is to evaluate if there is a change in quality of life, measured by the Quality of Life-AD (QOL-AD) scale, after 8 weeks of music therapy treatment. The music therapy treatment will be compared to a discussion group that will cover the same topics as the music therapy group, but will not use music. You will be randomly assigned to either the discussion group or the music therapy group. In addition, both you and a caregiver will complete the QOL-AD, to see if there is a difference between your perception of your own quality of life, and the caregiver's perception of your quality of life.

It is important to continuously look at new ways that we can care for elderly people. Studies on the efficacy of music therapy have shown that it can help alleviate some of the behaviors associated with dementia. However, there has been no research to see if music therapy would change the level of quality of life for an individual. In addition, it is important to consider the individual's opinions and thoughts on their treatment, not just the caregiver's opinions. This study seeks to evaluate both of these topics.

Who can participate in this study?  
All residents of Grandhaven Living Center will be given the opportunity to participate in this study. After a consent form is signed and returned, you will be given the Mini-Mental State Exam (MMSE). This is a common test for evaluating cognitive skill levels. If you score between
10 and 25 on the MMSE, you will be able to continue participating in the study. In addition, you will need to attend 7 of the 8 sessions to be included in the final analysis of data.

**Where will this study take place?**
This study will take place at Grandhaven Living Center in Lansing, MI.

**What is the time commitment for participating in this study?**
You will need to participate in at least 7 of the 8 sessions. Sessions will be held weekly at Grandhaven Living Center. Sessions will be 45 minutes in length, and will not conflict with other activities at the facility. In addition, data will be collected before the 8 weeks of sessions begin, and after the sessions have concluded. The QOL-AD questionnaire takes 5 minutes to complete. In summary, you will need to commit at least 8 hours for the study, including data collection and sessions.

**What will you be asked to do if you choose to participate in this study?**
You will be randomly assigned to one of two groups. This means you will not get to pick the group you are a part of, but will be assigned to a group randomly. One group will attend a weekly music therapy session. Music therapy sessions will include singing, playing instruments, movement activities, improvisation, and reminiscence. The second group will attend a weekly discussion group. The discussion group will talk about the same topics and themes as the music therapy group, but will not use music. You do not need to actively participate in the sessions, but you do need to attend and be awake during the session. Before the first session and after the final session you will be asked to take the QOL-AD, a short questionnaire that will take 5 minutes to complete. You will be given a private place to complete the QOL-AD

**What information is being measured during the study?**
You will be asked to take the Mini-Mental State Exam before the sessions begins. This will evaluate the level of cognitive functioning. If you score between 10 and 25, you and a caregiver will be asked to take a 13-question survey about your quality of life. The same quality of life test, for both you and the same caregiver, will be repeated at the end of the study.

**What are the risks of participating in this study and how will these risks be minimized?**
There may be slight risks associated with participating in this study, including discomfort related to movement activities and sadness related to reminiscence. If you appear uncomfortable, you will be asked if you would like to stop. You will only be asked to move to the degree that you are comfortable, and you will not be asked to stand. If you are upset, efforts will be made to change the topic of discussion. In addition, resident caregivers, including nurse aids and activity staff members, will be available to comfort you if needed. If you continue to feel upset after the
sessions concludes, you can ask for a referral to a mental health specialist. You may stop participating at any time, for any reason.

**What are the benefits of participating in this study?**
You may benefit from participating in this study by feeling better about your life situation and socializing with others. In addition, this research may benefit older adults with symptoms of dementia as it is used to increase knowledge about specific treatments, including discussion, reminiscence, and music therapy.

**Are there any costs associated with participating in this study?**
The only cost associated with participating in this study is the cost of your time for data collection and attending sessions.

**Is there any compensation for participating in this study?**
There is no compensation for participating in this study.

**Who will have access to the information collected during this study?**
Only the researchers will have access to the information collected. If the results of the study are presented at a conference or published, data will be presented in its collective form. Individual participants will be identified only as a letter (i.e. Participant A and Participant B).

**What if you want to stop participating in this study?**
You can choose to stop participating in the study at any time for any reason. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience no change in care if you choose to withdraw from this study. The investigator can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact the primary investigator, Brian Wilson at 269-387-4679 or brian.l.wilson@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.
I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.

Please Print Your Name

Participant’s signature

Date
Appendix C

Individual Assent Form
Western Michigan University
Music Department

Principal Investigator: Brian Wilson, MM, MT-BC
Student Investigator: Alisha Snyder, MT-BC

You have been invited to participate in a research project titled "Music therapy and quality of life: The effects of musical interventions on self-reported and caregiver-reported quality of life in older adults with symptoms of dementia." The purpose of this study is to evaluate if there is a change in quality of life after 8 weeks of music therapy treatment or 8 weeks of a discussion group. The music therapy treatment will be compared to a discussion group that will cover the same topics as the music therapy group, but will not use music. You will be randomly assigned to either the discussion group or the music therapy group, so you cannot pick your group. In addition, someone who helps to take care of you will be rating your quality of life. Your ideas and the caregivers’ ideas will be compared.

Before participating in one of the two groups, you will be given the Mini-Mental State Exam to see if you qualify for the rest of the study. If you qualify, you will be randomly assigned to either the music therapy group or the discussion group. The groups will meet every week for 8 weeks over the summer. Each session will last for 45 minutes. You will also be asked to rate your quality of life using the Quality of Life-AD (QOL-AD). This is a short, 13 question survey. The questions will be read to you, and you can either circle your answer or say your answer out loud. You will be asked to do this again after the 8 weeks of sessions. Anytime you are asked to answer these questions, you will be in a private place at Grandhaven Living Center.

Some of the topics that are discussed might make you uncomfortable or sad. You can stop participating at any time, for any reason. You might be asked to participate in a movement activity, and this may cause some physical pain. However, you will only be asked to move to the level you are comfortable. You can stop moving or participating at any time.

You may benefit from participating in this study by feeling better about your life situation and socializing with others. In addition, this research may benefit older adults as it is used to increase knowledge about helpful treatments, including discussion, reminiscence, and music therapy.

It does not cost anything to participate in this study other than the time to answer questions and attend sessions. You will not be paid for answering the questions or attending sessions. Only the researchers will see your answers to the questions. You name will not be on any of the forms. The researchers will use a code number instead.
You may choose to stop participating at any time. Even if you sign this form today, you can still decide not to participate.

If you have any questions or concerns about this study, you can contact the primary investigator, Brian Wilson, at 269-387-4679, or the student investigator, Alisha Snyder, 616-425-7619. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if you have questions during the study.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.

I have read this document and agree to take part in this study.

Please Print Your Name

Investigator’s signature Date
Appendix D

Comparison of Discussion and Music Therapy Topics
Week 1 – Theme: Weddings

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wedding clothing</td>
<td>• “Put on Your Old Grey Bonnet”</td>
</tr>
<tr>
<td>• Traditions during the</td>
<td>• “Great Is Thy Faithfulness”</td>
</tr>
<tr>
<td>ceremony</td>
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</tr>
<tr>
<td>• Songs for professional and</td>
<td>• “Bridal March,” “Trumpet Voluntary”</td>
</tr>
<tr>
<td>recessional</td>
<td></td>
</tr>
<tr>
<td>• Honeymoons</td>
<td>• “Aba Daba Honeymoon”</td>
</tr>
<tr>
<td>• Anniversaries/Love</td>
<td>• “Let Me Call You Sweetheart,” “I Love You Truly”</td>
</tr>
</tbody>
</table>

Week 2 – Theme: Independence Day

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pride for our country</td>
<td>• “God Bless America,” “America”</td>
</tr>
<tr>
<td>• Meaning of the parts of the</td>
<td>• “You're a Grand Old Flag”</td>
</tr>
<tr>
<td>US flag</td>
<td></td>
</tr>
<tr>
<td>• Fourth of July traditions</td>
<td>• “Stars and Stripes Forever”</td>
</tr>
<tr>
<td>• Branches of the military</td>
<td>• “Caisson Song,” “Marine’s Hymn”</td>
</tr>
<tr>
<td>• Freedom</td>
<td>• “My Country 'Tis of Thee”</td>
</tr>
</tbody>
</table>
### Week 3 – Theme: Modes of Travel

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reasons to travel</td>
<td>• “Sentimental Journey”</td>
</tr>
<tr>
<td>• Traveling around town</td>
<td>• “Walkin' after Midnight”</td>
</tr>
<tr>
<td>• Railroad system</td>
<td>• “Wabash Cannonball”</td>
</tr>
<tr>
<td>• Different types of cars</td>
<td>• “Hey Good Lookin','” “In My Merry Oldsmobile”</td>
</tr>
<tr>
<td>• Riding bicycles</td>
<td>• “Daisy, Daisy”</td>
</tr>
</tbody>
</table>

### Week 4 – Theme: Places to Travel

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reasons for travel</td>
<td>• “Sentimental Journey”</td>
</tr>
<tr>
<td>• Travel across the country</td>
<td>• “Route 66,” “I’ve Been Everywhere”</td>
</tr>
<tr>
<td>• National landmarks and tourist destinations</td>
<td>• “Give My Regards to Broadway,” “Meet Me in St. Louis”</td>
</tr>
<tr>
<td>• Travel across oceans</td>
<td>• “Hawaiian Rainbows,” “Jamaican Farewell”</td>
</tr>
<tr>
<td>• Favorite vacation spots</td>
<td>• “Gone Fishin”</td>
</tr>
</tbody>
</table>
### Week 5 – Theme: Gardens/Farming

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Flower gardens</td>
<td>• “When You Wore a Tulip,” “Tip-Toe Through the Tulips”</td>
</tr>
<tr>
<td>• Vegetable gardens</td>
<td>• “Yes, We Have No Bananas”</td>
</tr>
<tr>
<td>• Working on farms</td>
<td>• “Oats, Peas, Beans, and Barley Grow”</td>
</tr>
<tr>
<td>• Orchards</td>
<td>• “Don’t Sit under the Apple Tree,” “In the Shade of the Old Apple Tree”</td>
</tr>
<tr>
<td>• Favorite things to plant</td>
<td>• “English Country Garden”</td>
</tr>
</tbody>
</table>

### Week 6 – Theme: Olympic Games

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bringing the international community together</td>
<td>• “I'd Like to Teach the World to Sing,” “He's Got the Whole World in His Hands”</td>
</tr>
<tr>
<td>• Summer Olympic games</td>
<td>• “Camptown Races,” “Sweet Georgia Brown”</td>
</tr>
<tr>
<td>• Winter Olympic games</td>
<td>• “Skating”</td>
</tr>
<tr>
<td>• Olympic traditions</td>
<td>• “Olympic Fanfare and Theme”</td>
</tr>
<tr>
<td>• Locations of Olympics</td>
<td>• “Meet Me in St. Louis,” “A Foggy Day”</td>
</tr>
</tbody>
</table>
### Week 7 – Theme: Summer

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talk about boating</td>
<td>“Cruisin' down the River”</td>
</tr>
<tr>
<td>Favorite summer activities</td>
<td>“Those Lazy Hazy Crazy Days of Summer,” “In the Good Old Summertime”</td>
</tr>
<tr>
<td>Summer weather</td>
<td>“Summertime”</td>
</tr>
<tr>
<td>Summer relationships</td>
<td>“That Sunday That Summer”</td>
</tr>
<tr>
<td>Summer vacations</td>
<td>“Surfin' USA”</td>
</tr>
</tbody>
</table>

### Week 8 – Theme: Summer Dance Party and Back to School

<table>
<thead>
<tr>
<th>Discussion Group</th>
<th>Music Therapy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of Dances</td>
<td>“Hokey Pokey, Hand Jive, Swing Dance”</td>
</tr>
<tr>
<td>Dance partner</td>
<td>“Slow Dance”</td>
</tr>
<tr>
<td>Going back to school</td>
<td>“School Days”</td>
</tr>
<tr>
<td>Excitement about school</td>
<td>“Be True to Your School”</td>
</tr>
<tr>
<td>Favorite/least favorite subjects</td>
<td>“I'd Like to Teach the World to Sing”, “What A Wonderful World”</td>
</tr>
</tbody>
</table>
Appendix E

Detailed Plans for Control and Experimental Groups
Detailed Plans for Control and Experimental Groups

Session 1: June 25, 2012
Theme: Weddings

Discussion Group Questions:
- June is a popular month for anniversaries. Was anyone married in June? Can you share your anniversary?
- “Something old, something new, something borrowed, something blue.” Have you heard this phrase before? Did you follow it for your wedding? What did you use?
- What other traditions are part of weddings?
- What was your dress like? What color, what fabric, did you wear a veil?
- Where did you get married? In a church? At the courthouse? Did you elope?
- What was your wedding ceremony like? Was there special music or singing? Was it simple or elaborate?
- Did you have a reception after the ceremony? Was there cake? What was the reception like?
- Did you go on a honeymoon? One of the most popular places to go on a honeymoon is Niagara Falls. Did anyone go there?
- How long have you been/were you married?
- How many children do you have? Grandchildren? Great-grandchildren?

Music Therapy Group Plan:
Hello: Roll Out the Barrel
    I’ve got Love in My Hands

It’s Love That Makes the World Go ‘Round (beach ball)
Going to the Chapel (sing)
Bridal Processional (scarves)
Great is Thy Faithfulness (lyric sheets)
Put on Your Old Grey Bonnet (clothing traditions)
Let Me Call You Sweetheart
For me and My Gal (lyric sheets)
Aba Daba Honeymoon (recording, instruments)
I Love You Truly

Good-bye: Side by Side
Session 2: July 2, 2012
Theme: Independence Day

Discussion Group Questions:
- What are some of the sights of Fourth of July? (fireworks, sparklers, parades, flags, campfires, grilling…)
- What are some of the sounds of Fourth of July? (loud fireworks, bands playing patriotic songs…)
- Did you say the Pledge of Allegiance at school? What was the routine (hand over heart, look at flag)? Try reciting it together.
- What is the original meaning of “Independence Day”? What did you learn in school about the war against the British? (Boston Tea Party, Declaration of Independence…)
- What were some of your family’s traditions? Barbeques, baseball games, parades, fireworks?
- What is the meaning behind different parts of the flag? How many stars are there? What do they mean? How many stripes are there (13- for 13 colonies)? What colors are they? What do they mean (red- valor and bloodshed, white- purity and innocence, blue- justice and freedom)?
- Discuss nicknames for flags—“Old Glory” “Stars and Stripes” “Star Spangled Banner”
- Who is Uncle Sam? What is he best known for (same initials as United States, he’s a personification of the U.S. government, he helped recruit people for the army “I want YOU.”

Music Therapy Group Plan:
Hello: In the Good Old Summertime
God Bless America
Build flag together; sing songs/do activities mentioned on each stripe as time allows

My Country ‘Tis of Thee
- add tone chimes for “let freedom ring”
  Show flags, offer a flag to residents
- “You’re a Grand Old Flag”
- Discuss meaning of stars and stripes/flag trivia
  Sing “Yankee Doodle Dandy”
- rhythm sticks, discuss Fourth of July traditions
  Say Pledge of Allegiance
- discuss school experiences, hand over heart
  Listen to “Stars and Stripes Forever”
- conduct or play instruments
  Sing “America”
- lyric sheets
  Sing “Yankee Doodle”
- discuss meaning of “doodle” (fool), and “macaroni” (macaroni wig was fashionable, thought they could be fashionable with feather in hat)
  Sing “Star-Spangled Banner”
- discuss when it’s sung, history of song

Good-bye: “God Bless America”

Session 3: July 9, 2012
Theme: Types of Transportation for Summer Travels

Discussion Group Questions:
- What are some different ways of traveling?
- Can you describe any family vacations?
- Who took a road trip in a car?
- Has anyone flown for a fun trip?
- Any traveling as part of the military?
- Has anyone ridden on a tandem bicycle before? Who did you ride with? Who was in front or in back? Why?
- Has anyone ever gone on a trip on a train? Where to?
- Have you ever traveled by boat?
- How did you get around town when you were younger? Walking, horse?
- Have you ever gone horseback riding? Did you enjoy it?
- Did your family ever go camping? What did you sleep in?
- What are some favorite vacation spots for your family?

Music Therapy Group Plan:
Hello: Roll Out the Barrel
  Zip a dee do dah
Sentimental Journey
This Land is Your Land
On Foot: Walking after Midnight (pat legs)
By Railroad: Wabash Cannonball (lyric sheets)
  I’ve Been Workin’ on the Railroad
By Car: Hey Good Lookin’ (sing, then listen to Hank Williams, tap sticks)
  In My Merry Oldsmobile
By Bicycle: Daisy, Daisy
By Airplane: Come Fly with Me (instruments)
  Volare (scarves)
By Horse: Put on Your Old Grey Bonnet

Good-bye: Side by Side
Session 4: July 16, 2012
Theme: Travel and Vacation Locations

Discussion Group Questions:
- Why do we travel? (vacation, work, visit family, special occasions like a wedding, birth of a baby, or funeral)
- Where have you traveled in Michigan? (Mackinaw Island, Sleeping Bear Dunes, Tahquamenon Falls, Henry Ford Museum…)
- Where have you traveled around the country?
- What are some National Parks and tourist destinations that you know of or have visited? (Grand Canyon, Yellowstone, Old Faithful, Golden Gate Bridge, Mt. Rushmore, Disney World, Empire State Building, Sears Tower, Niagara Falls…)
- Where have you traveled around the world?
- Do you have a favorite vacation spot?
- What are your favorite things to do on a vacation (sight see, visit new places, shop, camp, go fishing, relax, read…)

Music Therapy Group Plan:
Hello: Oh What a Beautiful Morning
       You Are My Sunshine
       This Land is Your Land (with globe)
Sentimental Journey
Cross-Country Travel
       Route 66 (pat legs or march)
       I’ve Been Everywhere
Specific U.S. Locations
       Give My Regards to Broadway
       Carolina in the Morning (lyric sheets)
       New York, New York (recording, paddle drum)
       Meet Me in St. Louis
       Deep in the Heart of Texas (sing with cow bell)
       Walkin’ to Missouri (recording, sing with chorus, rhythm sticks)
Across the Ocean
       Hawaiian Rainbows (reverie harp)
       Jamaican Farewell
Other Countries
       Faraway Places (recording, parachute)
Favorite Vacations
       Gone Fishin’ (ribbons, for fishing)

Good-bye: Happy Trails
Session 5: July 23, 2012
Theme: Gardening and Farming

Discussion Group Questions:
- Did you ever have a garden? Who was in charge of the weeding and watering?
- What did you grow? Fruits, vegetables, flowers? What types?
- How big was your garden? Was the food for just your family? Did you can it? Did you sell some of it?
- What was your favorite thing to grow, and why?
- How many types of flowers can you think of? What grew well where you lived?
- How many of you grew up on a farm? Did everyone in the family help tend the crops? What crops did you grow?
- Was it a family farm? Is it still in the family?
- Did anyone grow up on or near an orchard?
- What are some different varieties of apples? What is your favorite?
- What are some different foods you can make with apples?
- What other fruits could you go pick when you were younger?

Music Therapy Group Plan:
Hello: Oh What a Beautiful Morning
When I Hear that Music
You Are My Sunshine

Flowers
When You Wore a Tulip
Tip-Toe through the Tulips (flower shakers)
Yellow Rose of Texas (lyric sheets)
Daisy Daisy
New San Antonio Rose (recording, instruments)

Vegetable Gardens
Yes! We Have No Bananas (identify vegetables)

Farms
Oats, Peas, Beans, & Barley Grow (movement with scarves)

Fruit/Orchards
Don’t Sit under the Apple Tree (apple shakers)
In the Shade of the Old Apple Tree
Apple Blossom Time (lyric sheets)

English Country Garden (listen, identify names you hear)

Good-bye: Happy Trails
Session 6: July 30, 2012
Theme: Summer Olympics

Discussion Group Questions:
Things to discuss and reminisce about:
- Where are the Olympics being held this year?
- Did you watch any of the opening ceremony on Friday night? What parts do you remember?
- What are some of the traditions of the Olympics (lighting the Olympic flame, gold, silver, and bronze medals)
- What are some of the summer Olympic sports? What's your favorite? Have you ever played any of these sports?
- What are some of the winter Olympic sports? What's your favorite? Have you ever played any of these sports?
- How often are the Olympics held? (every 4 years, but other season Olympics are in between)
- Why are the Olympics held? (promote sportsmanship and athleticism, bring the international community together) Do you think they do this?
- What are some other locations the Olympics have been held? (last winter Olympics were in Vancouver, BC, last summer Olympics were in Beijing, China)
- Do you remember the Olympic games being canceled for WWI, WWII?

Music Therapy Group Plan:
Hello: Oh What a Beautiful Morning
    When I Hear that Music
    You Are My Sunshine
    He’s Got the Whole World (beach ball)
Summon the Heroes (paddle drums)
I’d Like to Teach the World to Sing (lyric sheets)
Location: London
    A Foggy Day (in London Town)
    London Bridge
    It’s a Long Way to Tipperary (marching song)
Summer Olympics—think about different events
    Camptown Races (castanets)
    Sweet Georgia Brown (ball toss)
Winter Olympics – think about different events
    Skating (scarves)
Winning Events- Make New Friends (gold, silver, bronze)
Olympic Fanfare and Theme (listen, parachute)

Good-bye: Happy Trails
Session 7: August 6, 2012
Theme: Summertime

Discussion Group Questions:
Things to discuss and reminisce about:
- Ask residents to name the 4 seasons, and the season that we are in.
- When does summer officially start (June 21)?
- What are some of your favorite summer activities? (swimming, going to the beach, golfing, fishing, camping, vacations, walking outside, grilling, going to parks, going to carnivals, gardening, watching baseball)
- Did you ever meet someone special over the summer?
- What is the weather usually like?
- Does the weather impact what you like to do?
- What did you do during the summer when you were growing up? Was it different than what your kids did during their summer vacations?
- Did you have a summer job? What was it?

Music Therapy Group Plan:
Hello:  Roll Out the Barrel
When I Hear that Music
Oh What a Beautiful Morning (names)
Zip a dee do dah
Tossing a beach ball to the Beach Boys
Roll out those lazy hazy crazy days of summer
  – discuss how things have been lazy, hazy, or crazy
In the Good Old Summertime
  • rhythm sticks in 3 pattern
In the Shade of the Old Apple Tree
  • rhythm sticks, in 3 pattern
Summertime (Porgy and Bess)
  • props (fan, fish, cotton, money, mirror, baby)
Wait Till the Sun Shines, Nellie
  • lyric sheets
Cruising Down the River
  • lyric sheets
  • theraband, sway back and forth
On the Sunny Side of the Street
  • sing first
  • listen to recording with instruments
That Sunday, That Summer (new relationships, Natalie and Nat King Cole)
  • parachute

Good-bye: Side by Side, Show Me the Way
Session 8: August 13, 2012
Theme: Dance Party, End of Summer/Back to School

Discussion Group Questions:
- Did you ever go to a dance growing up? Was dancing allowed in your family?
- If dancing wasn't allowed, why not?
- Name some different types of dances (waltz, polka, ballet, foxtrot, jitterbug, tango, swing dance, etc...)
- Have you been to a wedding where there's been dancing? Did you participate? What kind of dances were there (chicken dance, hokey pokey, first dances)? Did you dance at your own wedding?
- Have you seen any back-to-school commercials on tv?
- Do you remember when you went back to school? Was it before or after Labor Day? Was it determined by the area that you lived in (farming families usually went back after Labor Day so kids could help on the farm)?
- What kinds of back-to-school supplies did you need for going to school? What did you bring with you on a regular basis?
- Do kids now need more or less when they go to school? Maybe just different things?
- Are most kids ready to go back to school, or would they rather stay on vacation? Why do you think that?
- Were you ready to go back to school when the time came? Did you enjoy school or vacation more?
- Did you have a favorite subject or a least favorite subject?

Music Therapy Group Plan:
Hello: When I Hear that Music
Tossing a beach ball to the Beach Boys (Be True to Your School)
The Band Played On (read words, use lyric sheets to sing)
The Twist (dance with hula hoops)
Hand Jive (teach motions (skip clap, half time), try it with music)
Polkas
   - Name that Tune (Put Another Nickel In, PA Polka, Too Fat, Beer Barrel)
   - sing Roll Out the Barrel
Hokey Pokey
Swing Music (with instruments)
Slow Dance (with scarves)
School Days (talk about 3 Rs)
I’d Like to Teach the World to Sing (lyric sheets)/What a Wonderful World

Good-bye: Side by Side
Appendix F

Informed Consent Form for Caregivers
Western Michigan University
Music Department

Principal Investigator: Brian Wilson, MM, MT-BC
Student Investigator: Alisha Snyder, MT-BC
Title of Study: Music therapy and quality of life: The effects of musical interventions on self-reported and caregiver-reported quality of life in older adults with symptoms of dementia

You have been invited to participate in a research project titled "Music therapy and quality of life: The effects of musical interventions on self-reported and caregiver-reported quality of life in older adults with symptoms of dementia." This project will serve as Alisha Snyder's thesis for the requirements of the Masters of Music in Music Therapy. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely and please ask any questions if you need more clarification.

What are we trying to find out in this study?
The purpose of this study is to evaluate if there is a change in quality of life, measured by the Quality of Life-AD (QOL-AD) scale, after 8 weeks of music therapy treatment. The music therapy treatment will be compared to a discussion group that will cover the same topics as the music therapy group. In addition, both you and the participant will complete the QOL-AD, to see if there is a difference between an individual's perception of quality of life and your perception of the participant's quality of life.

It is important to continuously look at new ways that we can care for elderly people. Studies on the efficacy of music therapy have shown that it can help alleviate some of the behaviors associated with dementia. However, there has been no research to see if music therapy would change the level of quality of life for an individual. In addition, it is important to consider the individual's opinions and thoughts on their treatment, not just the caregiver's opinions. This study seeks to evaluate both of these topics.

Who can participate in this study?
Staff members at Grandhaven Living Center who meet the criterion of caregiver are invited to participate in this study. For the purposes of this study, the definition of caregiver is "a person who helps an individual with activities of daily living at least 3 days per week."

Where will this study take place?
This study will take place at Grandhaven Living Center in Lansing, MI. You will be given a private place to fill out the survey.

**What is the time commitment for participating in this study?**
Each caregiver will be asked to fill out a short, 13 question survey about a resident's quality of life. The survey will take 5 minutes to fill out. The survey will be done before the 8 weeks of treatment begins, and again after the 8 weeks of treatment. Therefore, the total time commitment will be 10 minutes for each resident for whom you are asked to fill out a survey. The number of surveys you are asked to fill out will be based on the number of subjects in the study.

**What will you be asked to do if you choose to participate in this study?**
If you choose to participate, you will be asked to think about the quality of life for a particular resident. You will then be asked to fill out a short 13 question survey in regards to the resident's quality of life. This will be done before the resident participates in one of the treatment groups for 8 weeks, and again after the resident has completed the 8 weeks of treatment.

**What information is being measured during the study?**
The researcher is measuring the quality of life of residents before and after 8 weeks of music therapy, before and after 8 weeks of participating in a discussion group, and comparing these two groups. In addition, the researcher will be comparing self-reported quality of life to care-giver-reported quality of life in both of the treatment groups.

**What are the risks of participating in this study and how will these risks be minimized?**
There are no risks to the caregiver in participating in this study. The answers that you give to the survey are only your thoughts; there are no right or wrong answers.

**What are the benefits of participating in this study?**
There is no specific benefit to the caregiver for participating in the study. However, this research may benefit older adults as it is used to increase knowledge about specific treatments, including discussion, reminiscence, and music therapy.

**Are there any costs associated with participating in this study?**
The only cost associated with participating in this study is your time. You will be given the time during your regularly scheduled work hours to participate in the study, if you choose to participate.

**Is there any compensation for participating in this study?**
There is no compensation for participating in this study.
Who will have access to the information collected during this study?
Only the researchers will have access to the information collected. If the results of the study are presented at a conference or published, data will be presented in its collective form. Individual participants will be identified only as a letter (i.e. Participant A and Participant B).

What if you want to stop participating in this study?
You can choose to stop participating in the study at any time for any reason. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience no consequences, professionally or personally, if you choose to withdraw from this study. The investigator can also decide to stop your participation in the study without your consent.

Should you have any questions prior to or during the study, you can contact the primary investigator, Brian Wilson at 269-387-4679 or brian.l.wilson@wmich.edu. You may also contact the Chair, Human Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-387-8298 if questions arise during the course of the study.

This consent document has been approved for use for one year by the Human Subjects Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board chair in the upper right corner. Do not participate in this study if the stamped date is older than one year.

I have read this informed consent document. The risks and benefits have been explained to me. I agree to take part in this study.

Please Print Your Name

Participant’s signature   Date