INDIVIDUALIZED MUSIC THERAPY INTERVENTION TO DECREASE AGITATION IN PATIENTS WITH DEMENTIA

by

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Acknowledgments

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Dedication

I lovingly dedicate this to my beloved parents, Soo Ngor Leung and Yiu Poon Ng. I miss you every day and take comfort in knowing I will see you again. Thank you for your enduring love and sacrifices you made for your children. Your legacy continues to live on in your children and grandchildren. You live forever in my heart.
Abstract

Agitation is a significant behavioral problem in older persons with dementia and particularly distressing for the patient, caregiver, and family. Studies have supported the positive effects of individualized music therapy on decreasing agitation behaviors in persons with dementia. The aim of this evidence-based practice change was to implement an individualized music therapy (IMT) program, using MP3 players, with a personalized playlist that are tailored to the patient’s personal history of music preferences, as a nonpharmacological method to decrease agitation behaviors in residents with dementia within a long-term care facility.

Educational interventions for the staff included a 10-item Individualized Music Intervention Knowledge (IMIK) Assessment Test that was utilized to measure staff knowledge about IMT in pre and post educational sessions. The educational intervention with the staff indicated there was a 33% increase in knowledge on IMT during the education intervention. The Pittsburgh Agitation Scale (PAS) instrument was utilized pre and post IMT intervention over an 8-week period to determine if the IMT intervention was effective in decreasing agitation behaviors in residents with dementia. The results of the PAS for this group indicated the areas of aberrant vocalization, motor agitation and resisting care were affected suggesting the IMT was fairly effective in decreasing agitation scores. Electronic chart audits were utilized to evaluate the use of antipsychotic medications in the cohort. Chart audits revealed none of the residents in the cohort were on antipsychotic medications during the intervention period. However, three of the residents were on psychiatric medications including alprazolam, buspirone, and citalopram. There was no increase in dosage noted in these medications in subsequent chart audits. The findings indicated decreased levels of agitation and supported the benefits of IMT as a safe, nonpharmacological method in the treatment of agitation behaviors in older persons with
dementia. Further studies are warranted on a larger sample size, standardization of staff training, and monitoring for a longer period of IMT intervention to evaluate any long-term sequelae on agitation behaviors and medication usage in the promotion of optimal patient outcomes.

Key words: dementia, music therapy, individualized music therapy, agitation, agitation behaviors, behavioral problems, older persons, MP3 players, nonpharmacological method, Pittsburgh Agitation Scale
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Chapter One: Overview of the Problem of Interest

Dementia refers to an impairment of cognitive function, memory, language, reasoning, and judgment that interfere with daily living (American Psychiatric Association [APA], 2013). Dementia is not a specific disease but describes symptoms that can include memory loss and problems with cognitive thinking including problem solving and language. Dementia results when the brain is ravaged by disease or series of strokes. The most common types of dementia are Alzheimer’s disease (most common), vascular dementia, mixed dementia, Lewy-body dementia, and frontotemporal dementia. Dementia is characterized by a progressive decline in cognitive function and commonly involves behavioral symptoms. Behavioral and psychological symptoms of dementia (BPSD) may occur in up to 80% of those affected and can include agitation, aggression, and anxiety (Thornley, Hirjee, & Vasudev, 2015). Conventional treatments included pharmacological approaches using psychotropic medications, but these medications may have adverse side effects. Studies suggest that nonpharmacological therapies such as music therapy may decrease BPSD in persons with moderate to severe dementia (Raglio et al., 2015). Music therapy, if appropriately used, can shift mood, manage stress-related agitations, promote positive interactions, and facilitate cognitive functioning. The purpose of this chapter is to present how an evidence-based practice (EBP) change project employing a non-pharmacological, personalized approach using individualized music therapy can facilitate decreasing agitation behaviors in patients with dementia.

Background Information

Dementia is a global health challenge and is one of the most prevalent diseases affecting older adults. The World Alzheimer Report (2015) reveals there were 47 million people worldwide living with dementia with the number almost doubling every 20 years, reaching 74.7
million in 2030 and 131.5 million in 2050. The World Alzheimer Report (2015) points out the global costs of dementia have risen from US $604 billion in 2010 to US $818 billion in 2015, an increase of 35.4%. The Alzheimer’s Association report as the U.S. population age 65 years and older increases, the number of Americans with Alzheimer’s or other dementias is projected to almost double from 48 million to 88 million by 2050 (Alzheimer’s Association, 2017).

Dementia affects mainly older adults; about 14% of those 70 years and older having some form of dementia (Plassman et al., 2007). Upwards of 90% of those diagnosed with dementia will at some point display behavioral symptoms with more prevalence in the advanced stages of the disease (Trivedi et al., 2013). Agitation is a significant issue in persons with dementia because it intensifies burden onto the care provider, increases utilization of medical services, and decreases the overall quality of life (Park & Pringle Specht, 2009).

At the long-term care facility where the project has been implemented, it has been a challenge to decrease BPSD in dementia residents. Pharmacological treatment of BPSD includes antipsychotic medication therapy utilization which is higher than the state and national average. Nonpharmacological approaches have been advocated for BPSD to circumvent the inappropriate use of antipsychotic medications.

At the project site, there has been a lack of staff knowledge and access to nonpharmacological approaches in the treatment of BPSD. Furthermore, there has been a statewide initiative, since 2015, by the Texas Department of Aging and Disability Services (DADS) Quality Monitoring Program (QMP) to reverse the trend in antipsychotic usage in residents who exhibit BPSD through the MUSIC & MEMORY℠ program (Texas Health and Human Services, 2018). The Texas Health and Human Services uses Civil Money Penalty (CMP) funds to provide MUSIC & MEMORY℠ program funding and certification for 432 nursing homes in the
state in four phases with Phase III completion in 2018. Music therapy can assist in reducing the overuse of antipsychotic medications, can promote positive interactions with caregivers, enhance cognitive function, manage agitation behaviors, and alter mood (Long, 2016; Thomas, et al., 2017).

**Significance of the Problem**

Dementia is one of the most challenging and costly conditions to treat with $215 billion spent in 2010 on dementia care alone (Agency for Healthcare Research and Quality [AHRQ], 2014). The costliest aspect of care includes both formal care (long-term care) and informal care (unpaid care by family). Beeri, Werner, Davidson, and Noy, (2002) reported management of behavioral symptoms could increase the cost of informal and formal care by 25 - 35% respectively. Patients exhibiting behavioral symptoms of dementia are a challenge for formal and informal caregivers which can contribute to caregiver fatigue and decreased engagement and morale.

The prevalence of anxiety and agitation associated with early onset dementia and Alzheimer’s disease is relatively common affecting up to 70% of patients (Lonergan, Luxenberg, & Colford, 2002; Teri, Logsdon, & McCurry, 2002). Furthermore, agitation can occur in up to 90% of persons with moderate to severe dementia (AHRQ, 2014). As the demand for long-term care services increases, effective management of BPSD will be a significant issue affecting older adults with dementia. The management of BPSD has traditionally relied on pharmacological approaches, mostly antipsychotics.

Antipsychotic medications have limited efficacy for the treatment of behavioral symptoms and elevated risk for adverse effects including increased mortality (AHRQ, 2014). Concern over the use of pharmacological approaches and black box warnings associated with the
use of atypical antipsychotic drugs by the Food and Drug Administration (FDA) has led to clinical and evidence-based guidelines in recommending non-pharmacologic interventions as initial choice therapies for agitation and aggression in dementia (Mitka, 2012; Salzman et al., 2008). The clinical problem guiding the EBP change project are agitation symptoms in the older adults with dementia and using a non-pharmacological approach such as individualized music therapy intervention to alleviate these behavioral symptoms.

**Question guiding inquiry (PICO)**

EBP has been described as the conscientious use of current best evidence in making decisions about patient care (Sackett, Strauss, Richardson, Rosenberg, & Haynes, 2000). EBP is enhancing the patient care experience, providing the highest level of care at the lowest costs, implementing the best care available, and ensuring positive patient outcomes (Melnyk & Fineout-Overholt, 2015). To implement EBP into daily practice, EBP requires first asking a well-built question in PICO format (i.e., P: population of interest; I: intervention or issue of interest; C: comparison of interest; and O: expected outcome) (Melnyk & Fineout-Overholt, 2015). The PICO question guiding topic inquiry asks: Will an individualized music therapy (IMT) intervention decrease agitation behaviors in older persons with dementia within a long-term care facility?

**Variables of the PICO question.** The initial step in developing a well-constructed question is identifying the patient population or problem. Restricting the population and having a clear description of the population will facilitate retrieving the most relevant evidence (Melnyk & Fineout-Overholt, 2015). For the EBP project, the target population are older persons with dementia living in an urban long-term care facility in Texas. The target population for the EBP project are male and female nursing home residents at the facility with a diagnosis of dementia.
experiencing agitation behaviors. Identifying the intervention is the second step in the PICO process. This second step is to identify what is being done to the patient or population. It may be exposure, treatment, diagnostic test, prognostic factor or an issue of interest. The more explicit the intervention or issue, the more deliberate the search (Melnyk & Fineout-Overholt, 2015). BPSD affects up to 80% of the population and traditionally treated using pharmacological approaches with medications (Thornley et al., 2016). However, such medications may have serious adverse side effects and limited effectiveness in decreasing symptoms (Ballard et al., 2009). Certain studies have indicated music therapy as an effective non-pharmacological treatment for BPSD in decreasing aggressive behavioral symptoms while improving mood and quality of life in persons with dementia living in nursing homes (Chang, Huang, Lin, & Lin, 2010; Vink et al., 2013). Non-pharmacological approaches have been successful for treatment of behavioral symptoms in persons with dementia. Alternative therapies including bright light therapy, art therapy, pet therapy, reminiscence therapy, and massage therapy have been useful in treating behavioral symptoms of dementia. Similarly, music therapy has been deemed a safe and effective approach in managing agitation and anxiety in persons with Alzheimer’s patients (Svansdottir & Snaedal, 2006). The intervention for the proposed project is implementing an evidence-based, individualized music therapy program for older persons with dementia as a non-pharmacological strategy to alleviate behavioral symptoms of agitation. The comparison is the third step of the well-built PICO question and the only optional component in the PICO question. The comparison is the main alternative being considered and should be specific and limited to one alternative. There is no comparison group in this proposed project but a unique group of dementia residents who will be compared pre and post intervention to assess the efficacy of individualized music therapy on reducing agitation behaviors. The
outcome is the final step of the PICO question. The outcome specifies the result(s) of what is being accomplished, improved, or affected. The outcome of the project was to decrease agitation behaviors using an individualized music therapy program based on personal music preferences, utilizing portable digital music players, in older persons with dementia in a long-term care facility. Implementation of this intervention will reduce the frequency of behavioral symptoms of agitation in dementia residents by incorporating a non-pharmacological approach through the intervention of individualized music therapy. The Pittsburgh Agitation Scale (PAS) instrument was utilized to measure the frequency of agitated behaviors pre and post-intervention to assess the efficacy of the intervention (Rosen et al., 1994).

Summary

Behavioral symptoms of dementia are a worldwide problem with increasing costs to both formal and informal caregivers. Behavioral symptoms such as agitation are frequently seen in older persons with dementia in long-term care facilities. These symptoms are distressing for the resident, family, and long-term care staff. Individualized music therapy is an evidence-based intervention that has shown to be effective in alleviating agitation symptoms. Music therapy can be utilized by the nursing staff and interdisciplinary team as a nonpharmacological means to mitigate agitation in persons with dementia. Incorporating a personalized music playlist into the resident care plan can promote patient-centered care and be beneficial in decreasing overall incidence of agitation and the need for antipsychotic medication therapy.
Chapter Two: Review of the Literature

Dementia is a global health challenge and is one of the most prevalent diseases affecting older adults. The 2015 World Alzheimer Report states that 47 million people worldwide currently live with dementia (Alzheimer Disease International [ADI], 2015). The number doubles almost every 20 years, reaching 74.7 million by 2030 and 131.5 million by 2050. Nearly 80% of those affected with behavioral and psychological symptoms of dementia (BPSD) may experience agitation, aggression, anxiety, depression, and psychosis (Thornley, Hirjee, & Vasudev, 2016). Conventional treatments included pharmacological approaches such as antipsychotic medications. However, these drugs may have adverse side effects including increased risk of mortality (Agency for Healthcare Quality and Research [AHRQ], 2014; Maust et al., 2015; U.S. Food and Drug Administration [FDA], 2005). Nonpharmacological treatments for persons with dementia include concentrating on individualized care and modifying personal, behavioral, and environmental influences that may contribute to inappropriate behaviors.

Literature supports the use of nonpharmacological interventions in playing an essential role in the management of BPSD in persons with dementia (Douglas, James, & Ballard, 2004; Mitka, 2012; Salzman et al., 2008).

Studies suggest that nonpharmacological treatments such as music therapy may decrease BPSDs in persons with moderate to severe dementia (Blackburn & Bradshaw, 2014, Gerdner, 2005, 2010, 2013; Douglas et al., 2004; Raglio et al., 2008, 2015; Ueda, Suzukamo, Sato, & Izumi, 2013). One of the most predominant clinical manifestations of BPSD studied in the literature is agitation. The purpose of this integrative review of the literature is to examine the relevant evidence for the implementation of individualized music therapy (IMT) in older persons with dementia in long-term care facilities to decrease BPSD. Gerdner (1997) has described the
use of individualized music as music that has been integrated into an individual’s life and is based on personal music preferences.

**Methodology**

A comprehensive electronic literature search was completed to identify the most reasonable evidence to support IMT intervention for the evidence-based practice (EBP) change project. Databases included in the search were CINAHL, OVID, Cochrane Library, PubMed, Medline, Science Direct, PsychInfo, and EBSCO.

**Sampling strategies.** These databases were queried using the following key terms: music therapy, dementia or Alzheimer’s, agitation, relaxation techniques, psychomotor agitation, symptom distress, stress-psychological, memory, nonpharmacological interventions for dementia, and agitation management. The Boolean Operator ‘AND” was used to combine keywords to improved specific evidence yields. Literature was limited to full text from 1990-2016 in English language, related terms, full text, free full text, and academic journals (see Table 1). A search in EBSCO research databases from 1990-2016 revealed several redundant articles and music therapy (MT) interventions in cardiac, ventilator and OB/GYN patients which are not relevant to this paper. Studies considered relevant for inclusion as evidence to support the change project were assigned a level according to the new American Association of Critical-Care Nurses (AACN) evidence-leveling system hierarchy outlined to be discussed next (Armola et al., 2009). The numerical scale was changed to an alphabetical scale with the highest level represented by the letter “A” and the lowest level of evidence “M” which is manufacturers’ recommendation only. Level A, the highest level of evidence, includes meta-analysis of multiple controlled studies or meta-synthesis of qualitative studies with results that consistently support a specific action, intervention or treatment. Level B comprises of both randomized and
nonrandomized controlled studies which consistently support a specific action, intervention or treatment. Level C contains qualitative studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized control trials with inconsistent results. Level D comprises of peer-reviewed professional organizations standards with studies to substantiate recommendations. Level E consists of theory-based evidence from expert opinion or various case reports. Level M is considered the lowest level of evidence, consisting of manufacturers’ recommendation.

**Inclusion/Exclusion criteria.** Studies in the literature review were evaluated and scrutinized for inclusion in the change project based on its relevance to the clinical question, population of interest, and intervention. The clinical question guiding the inquiry asks: “Will an individualized music therapy (IMT) intervention decrease agitation behaviors in older persons with dementia within long-term care facilities?” Following a comprehensive review of the literature, each study selected for inclusion was critically appraised according to the AACN new alphabetical evidence-leveling system. A critical appraisal of the evidence included determining the level of evidence, how well it was conducted, usefulness to practice, design/method of the study, validity and reliability of the study, sample size, validity and reliability of the instruments used on primary variables, theoretical/conceptual framework, setting, and applicability to the change project. Evidence levels, from Level A to E, were considered for the literature review. However, most of the studies that supported MT as an intervention were Level B and C. An evidence table-matrix tool was utilized during the literature review to track pertinent articles that included significant data applicable to the EBP change project (see Appendices A). Studies not meeting the criteria for MT and management of BPSD and agitation were excluded. Only seven studies were selected based on their relevance and applicability to the EBP change project.
Some questions the author considered when appraising the body of literature to provide evidence to support the change project are delineated below (Fineout-Overholt, Melnyk, Stillwell, & Williamson, 2010, p. 49).

1) Was the purpose of the study clear?
2) What is the sample size? Were there enough participants in the study?
3) Were the instruments for the primary variables valid and reliable?
4) What statistics were used to analyze the data?
5) Did any unexpected events occur such as study participants dropping out of the study?
6) How do the results correspond with previous research in the area?
7) How did the researchers base their study on the literature review?
8) What do the results of this research imply for clinical practice?
9) Does the purpose of the study address an important clinical issue?

**Literature Review Findings**

Raglio et al. (2008) conducted a randomized controlled trial of 59 individuals with dementia, 30 were randomly assigned to the experimental group and 29 to the control group. The experimental group received three cycles of ten MT sessions (30 minutes per session) whereas the control group underwent educational and other entertainment activities. All participants underwent a multidimensional assessment including the Neuropsychiatric Inventory (NPI) at enrollment, 8th, 16th, and 20th weeks. NPI scores significantly decreased in the experimental group (p=0.002) but not in the control group. Specific BPSD such as agitation and anxiety significantly improved. Furthermore, the empathetic relationship and patient's active participation improved in the experimental group. Raglio et al. (2008) concluded MT was effective in decreasing BPSD in persons with moderate to severe dementia. Limitations of the
study include small sample size, criteria for randomization not standardized, and assessment for increased communication was only done for the experimental group.

Kong, Evans, and Guevara (2009) performed a systematic review and meta-analysis of the literature, published in English or Korean, regarding the effectiveness of nonpharmacological interventions in dementia. Fourteen studies (n=120) were included and data assessed by intervention category to include sensory intervention, social contact, activities, environmental modification, caregiver training, combination therapy, and behavioral therapy. Sensory interventions may include aromatherapy, thermal bath, calming music, and hand massage. Results indicated sensory interventions were statistically significantly effective in decreasing agitation ($p=0.002$) while other intervention categories were not as effective. Kong et al. suggest sensory interventions might be a practical alternative for decreasing agitation in older adults with dementia regarding cost, safety, ease of use and significance. MT is one such sensory alternative shown to be useful in managing agitation in older adults with dementia. Limitations of this study include a small number of studies, small sample sizes in respective studies, irregularity in nature and duration of the intervention, a broad range of sensory interventions, lack of consistent definition of agitation in studies, and variability in the measurement instrument and time. The systematic review implied sensory interventions had moderate efficacy in decreasing agitation in elderly adults with dementia.

Wall and Duffy (2009) conducted a comprehensive review of the nursing literature to explore how MT influences behavior in older adults with dementia. Thirteen studies were examined with most of the studies indicating that MT has a positive impact on behavioral symptoms of dementia by decreasing levels of agitation. Furthermore, studies identified a positive increase in patient mood and socialization skills with caregivers, with caregivers playing
a vital role in the use of MT. Limitations include lack of robust studies to corroborate findings and methodological limitations in all the reviewed studies.

Ueda et al. (2013) conducted a systematic review and meta-analysis to investigate the effects of MT on BPSD, cognitive functioning, and activities of daily living (ADLs) in patients with dementia. Ueda et al. (2013) reviewed 20 studies including randomized control trials, controlled clinical trials, cohort studies, and controlled trials. Study results indicated MT had modest effects on anxiety and secondary effects on behavioral symptoms. MT was associated with more positive effects on anxiety in studies of greater than three months’ duration. Additionally, the effects of MT were greater than other nonpharmacological interventions. Despite the small effects of MT compared with those of non-pharmacological interventions, MT is recommended for the management of BPSD, particularly considering the adverse effects associated with pharmacological therapy. Side effects linked to pharmacological approaches include sedation, falls, extrapyramidal signs, reduced quality of life, and increased cognitive decline (Douglas et al., 2004).

In a two-armed, exploratory randomized controlled trial to investigate the effects of individual MT on agitation in persons with moderate to severe dementia in nursing homes, Ridder, Stige, Qvale, and Gold, (2013) randomized 42 dementia residents to six weeks of MT and six weeks of standard care. Outcome measures included agitation disruptiveness, quality of life, and psychotropic medication usage. Ridder et al. observed that six weeks of MT decreased agitation and prevented psychotropic medication increases in nursing home residents with dementia. Limitations of this study were small sample size, lack of clarification on agitation frequency and quality of life, and the need for more subgroup analysis in determining the characteristics of those residents who benefited most from the intervention.
Blackburn and Bradshaw (2014) evaluated six randomized control trials to assess the efficacy of MT as a nonpharmacological intervention for dementia patients living in a residential care setting exhibiting challenging behaviors. It was noted that the effect of the intervention on anxiety was statistically significant ($p=0.004$) whereas the reduction in agitation was not statistically significant ($p=0.95$). The randomization methods appeared to be rigorous in all six studies. Limitations in the design of most of the studies was the potential for the control group being exposed to the MT intervention group which is referred to as "contamination." For example, residents from the control group may have been exposed to the MT intervention by simply wandering around the facility in various rooms. Other issues to consider include how much exposure to MT during the intervention is appropriate, whether MT is more effective delivered individually or in a group, and who is most suitable to administer the MT. The researchers concluded that the "true effect of MT in reducing depression, anxiety or agitated behaviors or improving the quality of life remains uncertain" (Blackburn & Bradshaw, 2014, p. 886). Nevertheless, the researchers maintain MT as a safe intervention beneficial in decreasing agitation behaviors in older adults with dementia and facilitating the therapeutic interaction between the patient and their caregiver (Blackburn & Bradshaw, 2014).

In a pilot study by Gerdner (2005) to evaluate the efficacy of individualized MT for the management of agitation behaviors in dementia residents in a long-term care facility, a statistically significant decrease in agitation ($p<0.0001$) was found during music presentation, and an overall decrease in agitation was observed on dayshift during weeks 1-8 ($p<0.0001$) and evening shift during weeks 5-8 ($p=0.027$). The instrument tool used to measure agitation was a modified version of the Cohen-Mansfield Agitation Inventory (MCMAI). The original instrument has established validity and reliability (Cohen-Mansfield, Marx, & Rosenthal, 1989;
Miller, Snowdon, & Vaughn, 1995). The Assessment of Personal Music Preference (APMP) was used to acquire information regarding the resident's music preferences and the importance of music in the resident’s life during independent living. Gerdner (2005) noted the effectiveness of the intervention was mainly due to the family being able to provide input on music selection that was meaningful to the resident and stimulated positive memories. Limitations of this study include small sample size, lack of randomization and a need for a more diversified sample.

Based on the review of literature there is moderate support for the EBP intervention of MT in the treatment of BPSD and agitation in patients with moderate to severe dementia. The instruments used to measure BPSD and agitation have established validity and reliability. Notable strengths of the studies indicated they were mainly Level B and C according to the AACN alphabetical evidence-leveling grading system. One study was an "A" which reported the highest level of evidence. Weaknesses noted in most of the studies were the small sample sizes, lack of randomization, and lack of detailed information on what type of music the patient preferred. However, one of the researchers did utilize an assessment tool to determine patient music preferences (Gerdner, 2005). Many studies did support MT as a nonpharmacological method of reducing BPSD in older adults with dementia. MT can be considered a practical, safe, and low-cost alternative in effectively managing BPSD in patients with dementia.

There has been limited research into the efficacy of nonpharmacological interventions in reducing BPSD in persons with dementia. The need to expand to other disciplines was required to generate more findings on the subject. Other disciplines included were medicine, geriatrics, music therapy, and psychiatry. Approximately half of the studies obtained during the literature search were from nursing journals. Lack of level A studies published within the last five years was apparent as indicated by only one level A study in the evidence table matrix. However, all
the level B and C studies supported music therapy as a nonpharmacological intervention in the management of BPSD in persons with dementia.

**Discussion**

The studies reviewed indicated MT as having a positive effect on patients with dementia and decreasing agitation behaviors. Nonpharmacological interventions such as IMT can be considered as a safe and effective therapy instead of antipsychotic medication usage which is associated with adverse side effects. Multiple studies support the EBP intervention of using IMT to decrease agitation behavioral symptoms in older persons with dementia.

**Limitations of literature review.** Literature regarding MT, BPSD, nonpharmacological methods and dementia was readily available. The nursing studies were limited to mostly literature reviews, a pilot study, and a randomized controlled trial. It was necessary to expand the search to include other disciplines such as medicine and psychiatry to generate higher levels of evidence to support the intervention. One such expanded search resulted in a level A systematic meta-analysis to investigate the effects of MT on BPSD, cognitive function, and activities of daily living in persons with dementia. Most of the evidence generated were foreign publications including Japan, United Kingdom, Denmark, and Italy.

**Conclusion of findings.** Most of the studies in the literature review typically had small sample sizes, were foreign in origin, and had methodological limitations. Therefore, it may be questionable whether the studies in the literature review is generalizable to a broader population. In spite of these limitations, there is support for the intervention of MT, especially in light of clinical guidelines recommending nonpharmacological methods as the first line therapy in treating BPSD and antipsychotic medications having adverse effects (AHRQ, 2014). BPSD has been traditionally treated with a pharmacologic approach resulting in detrimental side effects and
complications (Raglio et al., 2008). Since 2005, the United States Food and Drug Administration (FDA) has warned healthcare providers on the dangers of atypical antipsychotics, including increased mortality. Moreover, there is a national initiative to reduce the use of antipsychotics in long-term care facilities (Centers for Medicare & Medicaid Services [CMS], 2014).

**Potential practice change.** An evidence-based synthesis of the literature reviewed indicates MT as a safe and effective non-pharmacological treatment for BPSD in decreasing agitation in persons with dementia and promotes therapeutic interactions with caregivers. Moreover, MT is relatively inexpensive, easily delivered, and has the potential to expand to other practice settings. The aim of EBP change project was to incorporate an IMT intervention, using MP3 players, to decrease agitation behaviors in older persons with dementia in a long-term care facility.

**Summary**

BPSD is challenging and particularly distressing for patients, healthcare providers, family and caregivers alike. Historically, pharmacological therapies were used to manage these behaviors. Pharmacological therapies may have adverse side effects and increased risk of mortality. The FDA has not approved any antipsychotic drug therapies for the management of BPSD because of harmful effects including increased mortality and reduced quality of life (AHRQ, 2014). Nonpharmacological approaches are the recommended standard to treat BPSD. It is proposed that healthcare providers and caregivers employ nonpharmacologic interventions such as behavioral, psychomotor, and engaging activities as the first line treatment of BPSD. Providing an evidence-base for the efficacy of MT to decrease BPSD could facilitate utilization of this sensory intervention and help lessen the inappropriate use of antipsychotic medications in
persons with dementia (AHRQ, 2014). Studies suggest that nonpharmacological treatments such as MT may decrease BPSD in persons with moderate to severe dementia (Blackburn & Bradshaw, 2014, Gerdner, 2005, 2010, 2013; Douglas et al., 2004; Raglio et al., 2008, 2015; Ueda et al., 2013). Raglio et al. (2008) maintains that MT, in persons with dementia, is a low-cost treatment approach that nursing home staff can incorporate into daily care activities to decrease agitation behaviors, lessens caregiver stress and burden of care, and leads to improved quality of life for patients. Nonpharmacologic therapies are not widely used in the clinical setting because providers lack knowledge on the utilization of these therapies. Interventions can target specific behaviors such as agitation or as a general strategy for managing BPSD. The EBP change project involving individualized MT was one such approach to decrease agitation in older adults with dementia.
Table 1

**Literature Search Strategy Log for Problem of Interest**

<table>
<thead>
<tr>
<th>Database</th>
<th>Key Word Searches</th>
<th>Limits</th>
<th># of Citations Found / Kept</th>
<th>Rationale for Inclusion / Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>PsycINFO</td>
<td>Music AND dementia AND nonpharmacological intervention</td>
<td>2007-2016 English only, full text.</td>
<td>8 found 2 kept</td>
<td>Kept articles directly related to clinical question. Other articles not related to intervention so excluded.</td>
</tr>
<tr>
<td>ScienceDirect</td>
<td>Music AND dementia AND Alzheimer's disease</td>
<td>2010-2016 English only, full text.</td>
<td>46 found, 10 kept</td>
<td>9 found of poster presentations, 1 article kept directly related to clinical question.</td>
</tr>
<tr>
<td>Medline</td>
<td>Nonpharmacological interventions for dementia AND music AND agitation</td>
<td>2012-2016 English only, full text.</td>
<td>2 articles</td>
<td>One article kept directly related to intervention, the other related to multiple nonpharmacological interventions in the study so excluded.</td>
</tr>
<tr>
<td>All content providers</td>
<td>Music therapy AND memory AND dementia</td>
<td>1997-2016 English only, full text.</td>
<td>202 articles, 14 articles kept</td>
<td>Several redundant articles. Some articles editorials or feature articles. One case study and one case analysis retained directly related to the clinical intervention.</td>
</tr>
<tr>
<td>EBSCOhost Research Databases</td>
<td>Search terms limited to music therapy, anxiety, stress-psychological, relaxation techniques, psychomotor agitation, symptom distress, and Alzheimer’s disease.</td>
<td>1990-2016 English only, full text.</td>
<td>50 studies, 4 articles kept</td>
<td>Several redundant articles. Music therapy intervention articles in other areas such as heart patients, OB/GYN patients, Ventilator patients. One article on preferred music listening to decrease anxiety in older adults with dementia in nursing homes in China. Another study was a randomized control trial on the effect of music on anxiety and depression in patients with alzheimer’s in France. Another study was a</td>
</tr>
</tbody>
</table>
randomized control trial on the effect of music on agitated behaviors and anxiety in older people with dementia in Australia. Last interesting article was a review of the literature on music listening as a nursing intervention in Wales, UK.

| Cochrane Library | Music therapy in dementia | 2012-2015 | 5 articles, 1 kept | One article kept. A 2015 multicenter randomized control trial on the effect of individualized music therapy on dementia. |
Chapter Three: Theory and Model for Evidence-based Practice

Knowledge development is key to professional and successful nursing practice (Chinn & Kramer, 2015, p. 19). Fawcett (2005) describes the structural holarchy of modern nursing knowledge development as being comprised of five elements of nursing knowledge (ranging from abstract to concrete) to include metaparadigm, philosophy, conceptual model, theory, and empirical indicator. The latter components of the holarchy have been used in the research analysis of data and are known as Fawcett’s Conceptual-Theoretical-Empirical (C-T-E) structure. The “C” is the concept/conceptual framework that guides the research or project, the “T” is the theory that is generated or tested, and the “E” is the empirical indicator or measurement tool used to evaluate the outcomes. Gigliotti and Manister (2012) believed the C-T-E construct provides the relationship of abstract concepts of the nursing concept (C), to the less abstract study variables (T), and the empirical indicators (E) or operationalizing of the study variables (p. 301). The purpose of this chapter is to describe the concept of agitation and how it relates to the C-T-E construct. The concept of interest explored in this chapter will be agitation associated with dementia. Additionally, an evidence-based practice (EBP) model will be discussed in guiding the change project from evidence identification to translation into clinical practice.

Concept Analysis/Conceptual Framework

Persons with dementia will often develop behavioral symptoms of agitation that constitutes one of the most challenging and disconcerting aspects of the disease (Millan-Calenti et al., 2016). The PICO question driving the practice change project is: Will an individualized music therapy (IMT) intervention decrease agitation behaviors in older persons with dementia
within long-term care facilities? The “C” in the C-T-E construct or concept for the practice change project is agitation associated with dementia.

Agitation is common in the middle or late stages of dementia and considered the most significant symptom causing patient and caregiver distress (Ridder, Stige, Qvale, & Gold, 2013). One definition of agitation is when something is physically moved or shaken. Agitation can also include emotional feelings that result when one gets provoked or upset. Hurley et al. (1999) defined agitation as an “unpleasant state of excitement experienced by the patients with dementia of the Alzheimer type” (p. 118). Agitation has also been termed as a state of chronic restlessness and increased psychomotor activity observed as an expression of emotional tension and characterized by purposeless, restless activity (Mosby’s Medical Dictionary, 2009). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) describes agitation as an excessive motor activity associated with an inner feeling of tension (American Psychiatric Association, 2013).

Agitation has been commonly defined as “inappropriate verbal, vocal or motor activity that is not judged by an outside observer to result directly from the need or confusion of the individual” (Cohen-Mansfield, 1991, p. 2). An operational definition of agitation is "vocal or motor behavior that is either disruptive, unsafe, or interferes with the delivery of care in a particular environment" (Rosen et al., 1994, p. 53). The review of the literature and published definitions on agitation reveal two identifying attributes for agitation to be existent. The defining attributes are 1) excessive motor and/or vocal activity, and 2) observer-judged inappropriateness of the observed activity. Agitation behaviors demonstrated by patients who have dementia need to be addressed to promote both patient and staff safety and to improve patient outcomes. A potential intervention to reduce agitation is an individualized music therapy (IMT) program for
dementia residents in a long-term care facility. Sung and Chang (2005) noted in a review of the literature that preferred music intervention on agitated behaviors in older persons with dementia showed positive results in decreasing the occurrence of certain types of agitation behaviors. Craig (2014) examined the effects of music therapy on agitation behaviors in persons with dementia and showed the effectiveness of music therapy in persons with various stages of dementia with the optimum frequency of intervention two to three times a week for 30-50 minutes. Chang et al., (2015) was the first study to assess the efficacy of randomized controlled studies of music therapy for persons with dementia over the past 15 years and indicated music therapy significantly improved disruptive behaviors and anxiety levels in persons with dementia.

Theory

Chin and Kramer (2015) postulated concepts are essential components that convey the focus and meaning of the theory (p.178). The identification of these concepts helps form the fabric of the nursing theory. The nursing theory in guiding the practice change on IMT in decreasing agitation is Ida Jean Orlando's Deliberative Nursing Process Theory. Orlando's theory is patient-focused, explores patient and nurse interaction, looks into nurse perceptions, thoughts and feelings with patients, and incorporates the nursing process to produce positive patient outcomes or improvement (Faust, 2002). The nursing process is ascertained by verbal and nonverbal patient behavior. For nursing care to be successful, patient behavior needs to be correctly assessed and validated by the nurse. Furthermore, effective communication between the nurse and patient is required to meet patient needs.

Application to practice change. Positive nurse-patient relationship results when the nurse perceives patient behavior, the nurse’s thoughts and reactions with the patient are validated, and the nurse takes deliberative action (Potter, 2013, p. 238). Deliberative action
results when the patients' needs are met, and the action is evident. For example, a dementia patient begins to exhibit agitated behaviors and the nurse perceives this behavior as being attributed to an unmet need. The nurse responds by correctly assessing the need and meeting those needs by implementing IMT to alleviate agitation behaviors. When the need is met, the patient is pacified and no longer displays agitated behaviors. The use of this theory facilitates in guiding the EBP change project by allowing the nurse to take deliberative action in providing music intervention early on to mitigate agitation behaviors in residents with dementia at the practice change site. Orlando’s theory contributes to the professional knowledge of nursing, is applicable in the project change setting, and centers on the continuous interaction between the nurse and patient. When the nurse focuses on the patient’s verbal and nonverbal behaviors and able to identify when the patient is in distress, the nurse is able to engage in responsive action to resolve problematic situations. Orlando’s theory addresses the continuous, dynamic process between patient and nurse and the nurse’s response to the patient when he/she becomes distressed.

**Model for Evidence-Based Practice**

The Rosswurm and Larrabee’s Model for Evidence-Based Practice (EBP) Change was used in the practice setting aimed at decreasing agitation in persons with dementia. This model was conceived from theoretical and research literature related to change theory, utilization of research, and EBP (St. Clair & Larrabee, 2002, p. 17). The basis for the model is a six-step systematic approach in attaining EBP (see Figure 1 below).
The first three steps in the model should be completed before implementing the practice change in steps four to six (p. 17). The PICO question underlying the practice change project is: Will an individualized music therapy (IMT) intervention decrease agitation behaviors in older persons with dementia within long-term care facilities? The model and how it relates to the PICO question will be outlined below.

The first step in the model is to assess the need for change. This is accomplished by evaluating the need for changes in practice by comparing internal and external data and determining if the change is warranted. Internal data may include the use of psychotropic medications to treat agitation behaviors. Other internal data may include the frequency of agitated behaviors in these residents and its effect on the patient, family, and staff. External data may include the unnecessary use of antipsychotic medications in the state despite significant morbidity associated with its use. Other factors to consider in the assessment phase is identifying the problem and including stakeholders throughout the process. The clinical problem of interest for the project change was agitation associated with the behavioral and psychological
symptoms of dementia (BPSD) in persons with dementia. Antipsychotic drug therapy used to treat BPSD has adverse effects and increase mortality risks (Bueckert, 2014). It has been increasingly recognized that non-pharmacological approaches in the treatment of BPSD are considered best practice and should be regarded as a first-line treatment (Douglas, James, & Ballard, 2004). Redmond and Cavan (2011) acknowledge the use of antipsychotic medications in the treatment of BPSD has long been a controversial issue due to adverse side effects including increased mortality and morbidity associated with it use. Furthermore, it was noted that older adults with dementia are particularly vulnerable to adverse side effects such as sedation, hypotension, extrapyramidal side effects, and increased cognitive decline. Current evidence-based guidelines advocate nonpharmacological approaches in the management of agitation in older adults over medication therapy, such as antipsychotic medication, which are associated with deleterious effects and increased mortality (American Geriatrics Society, 2015).

In step two, problem, interventions, and outcomes should be linked utilizing homogeneous language with feasible results. The intervention in the practice change project was IMT with the primary outcome of decreased agitation behaviors, reduction or no further increase of psychotropic drug administration, and increasing staff knowledge on IMT. The third step is a synthesis of best evidence, both research and contextual, by systematically reviewing the literature to ensure the practice change is supported by the evidence (Rosswurm & Larrabee, 1999, p. 319).

The review of literature should evaluate and scrutinize studies for inclusion in the change project based on its relevance to the PICO question, major variables, target population, and intervention. Selected studies will be critically appraised and synthesized to assess for benefits, risks, and practicality for change. In the change project, a comprehensive literature review was
performed, and each study selected was critically appraised based on the Levels of Evidence rating system for the hierarchy of evidence (Melnyk & Fineout-Overholt, 2015, p.10). Based on the systematic review of the literature, there was sufficient support for music therapy intervention in the treatment of agitation in persons with moderate to severe dementia.

In step four of the model, a design for the EBP change project was proposed. Once the evidence is synthesized, the sequence of activities or protocol must be described in the practice change (p. 320). Components related to the design may include stating the proposed change, identifying required resources, and identifying the desired outcomes. In the practice change project, the proposed change was providing IMT to dementia residents, using portable digital music players, with the desired outcome of decreased agitation behaviors in the resident.

In step five of the model, implementation and evaluation of the change in practice are warranted. This may include a pilot study to determine the effectiveness of the change. Step five also involves evaluation of the process of change and determining whether to adapt, incorporate, or reject the practice change. Implementation of the practice change would be more successful if the planner monitors the process and reinforces the practice change (p. 321). After the change has been implemented, Quality Improvement (QI) data can be obtained to determine if the change project had an effect on patient outcomes. QI data is useful in determining the efficacy of current systems, the results when changes are instituted, and to support successful change implementation (Harris et al., 2016). Moreover, QI data can gauge the effectiveness of the change project on patient outcomes (Rosswurm & Larrabee, 1999).

Positive feedback and endorsement of the change from stakeholders can result in the decision to incorporate or reject the change. In the change project, implementation involves educating and engaging the staff on determining the need for IMT for the dementia resident
preceding agitation episodes and how to monitor for its effectiveness using the Pittsburgh Agitation Scale (PAS) pre and post music intervention. Outcomes of the project can be monitored by QI data, decreased number of agitation events, reduced length of agitation episode, and results of the PAS.

The sixth step is to integrate and maintain the change in practice. This final step illustrates the importance of ongoing communication with stakeholders to promote confidence in the efficacy and acceptance of the change in the organization (p. 321).

**Application to practice change.** At the project change site, the Director of Nursing, Administrator, and parent organization are in support of the IMT project. To engage the nursing staff, education will be provided on the need for change in practice and how IMT can be integrated into the care plan. The Rosswurm and Larrabee Model for EBP Change was appropriate to the practice change project to enhance clinical outcomes and improve the quality of patient care.

**Summary**

The Conceptual-Theoretical-Empirical (C-T-E) structure supports the PICO question and the practice change project by enhancing interactions between the caregivers and dementia residents, promoting patient centered care and improving the quality of life in persons with dementia. The concept of agitation is necessary to explore in nursing because further knowledge development can generate a better theoretical model to promote more effective interventions and prevention approaches for persons with dementia with BPSD. The theoretical model framework for the change project was Orlando’s Nursing Process Theory. This theory centers on the interaction between the nurse and patient, defining the function of nursing, and the utilization of the nursing process to produce positive patient outcomes (Faust, 2002). The empirical indicator
chosen to quantitively measure agitation was the Pittsburgh Agitation Scale (PAS), which has been used in various long-term care facilities throughout the United States (Rosen et al., 1994). The Rosswurm and Larrabee’s Model of Evidence-Based Practice Change was selected to guide the incorporation of IMT to treat behavioral symptoms of agitation in persons with dementia. This model was valuable in systematically guiding the Project Manager from development and integration of change to evidence-based practice at the practice setting.
Chapter Four: Pre-implementation Plan

Pre-implementation planning is key to successful evidence-based practice (EBP) change. A project plan comprises of a sequence of processes and activities vital to project completion (Harris, Roussel, Dearman, & Thomas, 2016). Project readiness entails identifying the need for the project, systematic planning, and obtaining stakeholder approval (Harris et al., 2016). This chapter will outline the pre-implementation planning process on execution of an EBP individualized music therapy (IMT) intervention to decrease agitation symptoms in individuals with dementia within a long-term care facility.

Project Purpose

Agitation behaviors are frequently seen in over half of all persons with dementia (Van der Mussels et al., 2015). Current guidelines recommend nonpharmacological approaches in the treatment of agitation over antipsychotic medication (American Geriatrics Society, 2015). In the present long-term care facility, there is a lack of alternative treatment thus creating an identified need for non-pharmacological interventions for patients exhibiting aggression related to dementia. The purpose of this EBP change project was to implement an IMT program to decrease agitation symptoms in individuals with dementia in a long-term care facility. Music therapy is a non-pharmacological approach that aims to enhance the quality of life, promotes cognitive stimulation, and increases social interaction with caregivers. The Evidence-based Guidelines of Individualized Music for Persons with Dementia by Gerdner (2013) and the MUSIC & MEMORY® (M&M) program will be used as a basis for the intervention. The M&M program is a non-profit organization that enables nursing homes across the U.S. to become a MUSIC & MEMORY® certified organization that facilitates nursing home staff to provide personalized music playlists for patients with dementia and other cognitive challenges.
The project site was recently M&M certified, through financial support from the state’s Department of Health and Human Services (DHHS) but has not been able to initiate an IMT program.

As part of the intervention, an educational program based on the guidelines and the M&M program was targeted towards the nursing staff including a voluntary pretest and posttest. An assessment of personal music preference questionnaire was used by the staff, Project Manager, or a volunteer to elicit information on patient music preference from the resident or a family member who was familiar with the resident’s music preferences. A customized playlist was downloaded by the Project Manager or Activity Director to an MP3/iPod player for each individual patient use. The staff used the Pittsburgh Agitation Scale (PAS) to quantitatively monitor for agitation symptoms before and after music intervention at least twice a week for 8 weeks. Expected outcomes of the music therapy intervention included increased staff knowledge on IMT, decreased episodes of agitation behaviors in patients with dementia as indicated by the pretest and posttest scores on the PAS, and no increase or decreased use of antipsychotic medications in subsequent chart review audits.

**Project Management**

To ensure successful implementation of an EBP change project, the Project Manager created a plan prior to implementation. Some steps in the plan included: evaluation of the system, formation of a team of key stakeholders, appropriate approval, and assessment of the role of informational technology in the project. The sections below will delineate steps in the plan in more detail.

**Organizational readiness for change.** Organizational change is defined as planning actions to alter collective behavior in the pursuit of specific objectives, the implementation of
evidence-based clinical practice (Helfrich et al., 2011, p. 2). It was critical for the Project Manager to assess the baseline organizational readiness for change as it can be a prognostic indicator of successful change in the future. Successful change relies on many organizational influences including employee attitudes about change, leadership support, available resources, proper planning, and mechanisms for monitoring progress (p. 2).

The intervention was implemented in a 120-bed skilled nursing facility in a large city in the southern U.S. In the facility, nearly a quarter of the residents have dementia with half of those residents exhibiting agitation behaviors. The facility’s Director of Nursing, Administrator, providers, and Activity Director understand the DHHS’s advocacy for nonpharmacological measures to manage agitation behaviors through the M&M certification program. Consequently, they support an IMT approach that is practical, patient-centered, and cost-effective in the management of behavioral problems in residents.

Other factors to consider when determining organizational readiness for change are institutional and personnel readiness and organizational dynamics (Noe et al., 2014, p. S549). Institutional and personnel readiness refer to the resources, the motivation for change, and perceived need and pressure for change. Organizational dynamics refers to the climate for change and other factors including clarity of mission and goals, openness to change, staff cohesion, and communication. In the facility setting, these factors have been taken into consideration, and there is support by leadership to promote the adoption and implementation of IMT.

**Inter-professional collaboration.** For the practice change to be successful at the setting, effective teams need to be operational across disciplines and departments (Ogrinc et al., 2012, p.
31). Successful teams depend on the knowledge, skills, and experience of collective individuals to facilitate problem-solving and decision making (p. 33).

The team members of this project include the Director of Nursing (DON), the Administrator, the Nurse Practitioner (NP), the Project Manager, the staff nurses, the Activity Director and Assistant Activity Director. Staff nurses comprise of nursing assistants, registered nurses, and licensed vocational nurses. Membership in the interprofessional team requires commitment, knowledge, skills and experience of the individual to complete the project (Ogrinc et al., 2012, p. 32). The DON and Administrator have the authority to institute the change in the facility while the other team members have specific roles and tasks related to implementation of the project.

The Project Manager provided the projector and laptop to conduct the PowerPoint training during educational sessions with the nursing staff. Handouts, a PowerPoint presentation, and brochure was created by the Project Manager to be used as training tools. Flyers to advertise the educational sessions and recruitment of residents for the IMT program were posted throughout the facility. The Activity Director and members of the interdisciplinary team determined which individuals with dementia exhibiting agitation behaviors would benefit most from IMT. A total of 17 residents with dementia were determined to be eligible to for the IMT program with two residents declining. The Project Manager and volunteer downloaded personalized playlists for the selected residents. The Activity Director provided maintenance and storage of the iPod/MP3 players in her office.

The nurse aides implemented the IMT with select residents and monitored agitation scores using the Pittsburgh Agitation Scale (PAS) pre and post intervention for eight weeks at least twice a week. To ensure consistent implementation of the PAS scale, the nursing staff were
given practice case scenarios by the Project Manager during the educational in-service and individually mentored when filling out the actual PAS. It was noted by the Project Manager that several of the nurse aides were primarily Spanish-speaking. The Activity Director inquired if the PAS was available in a Spanish language version. Consequently, the PAS forms were made available by the Project Manager in both in English (see Appendices E) and Spanish versions (see Appendices F) for staff. Blank PAS forms were easily accessible to the staff in a folder designated “PAS” in a plastic file box next to the Activity Director’s office. In addition, the PAS forms were included in each MP3 player packet when the staff member picked it up for the participating resident. The completed PAS was turned in to the Activity Director who maintained a folder to keep all the documents for the Project Manager to collect. The Project Manager met at least weekly during the eight-week implementation with the staff and Activity Director to discuss the progress of the project and to address any issues that might arise. The Project Manger mentored each participating staff member on correctly filling out the PAS instrument and guidance on correctly using the iPod/MP3 controls. The Project Manager had each participating staff member practice filling out a PAS instrument on two same case scenarios and provided feedback on correctly filling out the instrument. In addition, the Project Manager and Activity Director provided hands-on training to the participating resident, family member, and staff member on how to adjust volume controls, adjust headset, enter song selection, and activate the iPod/MP3 players.

**Risk management assessment.** This project change involves a nonpharmacological approach in treating agitation symptoms in individuals with dementia in a long-term care facility. The selected method for the EBP change project is IMT. Risk management assessment is essential to analyzing and assessing the organization’s risks and opportunities for the practice
change. The risk assessment utilized for the project was the SWOT analysis. A SWOT analysis serves as a guide for identifying an organization's strengths and weaknesses (Community Tool Box, 2017). The SWOT focuses on strengths (S), weaknesses (W), opportunities (O) and threats (T) and can be utilized by Project Managers to facilitate decision-making and strategic planning. The aim of the SWOT is to show positive strengths and weakness of the group as well as any external threats or opportunities. For the change project on IMT, the SWOT analysis is outlined in Table 1 below.

Table 1

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses:</th>
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<tbody>
<tr>
<td>Support from leadership and Activity Director</td>
<td>Lack of funds to purchase additional MP3 players</td>
</tr>
<tr>
<td>Patient-centered</td>
<td>Lack of buy-in from staff</td>
</tr>
<tr>
<td>Patient engagement</td>
<td></td>
</tr>
<tr>
<td>Non-pharmacological method to treat agitation in dementia residents</td>
<td></td>
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<tr>
<td>Cost-effective</td>
<td></td>
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<tr>
<td>Volunteers</td>
<td></td>
</tr>
<tr>
<td>Family involvement</td>
<td></td>
</tr>
<tr>
<td>15 iPods provided by the state DHHS</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities:</th>
<th>Threats:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack individualized music program at facility</td>
<td>Lack of staff participation</td>
</tr>
<tr>
<td>Fundraisers</td>
<td>Lack of MP3 players for more residents</td>
</tr>
<tr>
<td>Donation campaign of MP3 players</td>
<td>Translation of PAS into Spanish for staff</td>
</tr>
<tr>
<td>Request more MP3 players in facility budget</td>
<td></td>
</tr>
<tr>
<td>Music and Memory Certified facility</td>
<td></td>
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</tbody>
</table>

The major stakeholders are the DON, Administrator and the Activity Director. The DON is new to the facility, but in her previous position, a M&M was available to the residents. Also, the Activity Director occasionally provides live music for the residents at the long-term care facility but not IMT to specifically treat agitation in dementia residents. The Administrator provides the knowledge and support of the day-to-day operations of the facility. Some of the weaknesses include lack of funds to purchase additional MP3 players. A fundraiser and donation
campaign of used MP3 players was employed to address these barriers. It should be noted that iPods are nearly four to five times costlier to purchase than MP3 players, so generic MP3 players were the practical choice for additional residents participating in the intervention.

System change will require open communication with stakeholders and staff to reduce the threat of staff not participating. According to Ogrinc et al., (2012) communication is essential in building commitment to change among individuals (p. 52). Open communication involves providing information on why the change is needed, helps foster trust with the staff, increases stakeholder engagement, and provides feedback on ways to improve the project change.

**Organizational approval process.** The organization embraces this EBP practice change and is supported by the DHHS surveyors to have the M&M program active at the facility. The DHHS and the Centers for Medicare and Medicaid Services (CMS) have approved the M&M certification program for over 400 facilities throughout the state with the goals of reducing the antipsychotic medication usage, decrease the number of patient falls, increase staff satisfaction, and demonstrate an improvement in CMS quality measures. The DON previously worked in a certified M&M certified long-term care facility and values IMT in the present setting. The Activity Director is supportive and enthusiastic about the intervention. Written organizational permission allowing the EBP project was approved by the Administrator. The facility recently became MUSIC & MEMORY℠ certified through support of state funding initiatives. The organization requires the implementation of an IMT program to meet state surveyor requirements and promote state-wide monitoring of antipsychotic usage in the target population.

**Use of information technology.** Information technology (IT) has a pivotal role in the EBP project change. The facility has electronic medical records (EMR) that will allow the auditing of patient records for antipsychotic medication dosage pre and post IMT intervention.
Portable music players (PMP) allow one to download or save digital music files (in MP3 format) from the computer. MP3 is short for MPEG (Moving Pictures Experts Group). The MP3 player is a type of digital audio player that allows for downloading or saving of digital music files from the computer. MP3 players are small handheld devices that often weigh less than an ounce and uses flash memory for storing MP3 files. MP3 players can take up to 3 hours to completely charge and has a playback time of at least 15 hours. MP3 players allow for the transfer of audio files from the computer to the player. A popular MP3 player is the iPod Shuffle which has a song capacity of up to 500 songs for 2 GB or 1000 songs for 4 GB depending on the generation type. Transfer of audio files will involve downloading a program to allow for the transfer of music from the YouTube website, iTunes, or from CDs. At the facility, an individual iPod Shuffle was provided for 15 residents with dementia through the M&M certification program. Additional MP3 players were purchased online at Amazon.com by the Project Manager.

**Materials Needed for Project**

Evaluation materials will include: Assessment of Personal Music Preference (Patient & Family Version), Individualized Music Intervention Knowledge Assessment pre-test and post-test, the Pittsburgh Agitation Scale (PAS), and the demographics data form. Items required to implement the project included 15 iPod players, seven MP3 players, over the head headphones for each iPod or MP3 player, headphone splitters, iTunes gift card, wall chargers, vertical power strip charging station, label maker, plastic zip up pouches, file box holder, storage box, clear mini hooks, portable mini speaker, clear plastic badge holders with strap, portable projector, laptop computer, portable computer speaker, folder with handouts, flyers, and pens. The needed project materials along with quantity estimates and rationales for use will be discussed next.
A portable projector was required to present the PowerPoint presentation to the staff. A laptop and portable computer speaker allowed the Project Manager to display the PPT and to show a M&M videoclip to the staff. A clicker was needed to advance the slides during the PowerPoint.

Pens and a file folder with educational handouts was provided to the staff during the educational session. The Project Manager made 60 handout packets for the file folders. The handouts for the educational sessions was placed in a file folder for each staff to keep for future reference. Each staff member attending the educational session received copies of the Staff Cover Letter (Appendices L), a Consent Form for Staff (Appendices M), a Demographic Data form (Appendices B), a IMT knowledge pre and post assessment tests (Appendices C), a PowerPoint handout of the education session, an Assessment of Personal Music Preference (patient version) (Appendices N) and a copy of the PAS instrument (Appendices E). Each staff member attending the educational session was required to sign the facility’s attendance training sheet. A verbal announcement was made prior to the educational session by the Project Manager regarding voluntary consent to complete the Demographic Data form (Appendices B) and the pre and post-tests (Appendices C). The signed consent form, completed Demographic Data forms, and completed IMT pre and post-tests were collected by the Project Manager after each educational session. Each test was hand graded by the Project Manager using the Answer Key (Appendices D). Color copies of the flyers were distributed throughout the facility announcing the IMT program for patients with dementia and the educational sessions for the staff.

The Participant Cover Letter (see Appendices J) along with the Consent Form for Patients and Family (see Appendices K) was generated by the Project Manager in obtaining voluntary informed consent from either the participant or a family member. The Assessment of
Personal Music Preference (Patient and Family Version) (Appendices N and O) was included in the consent form packet to elicit a personalized playlist of songs for the resident concurrently with the informed consent for added convenience.

Fifteen iPod shuffle players and 15 personal headphones was provided by the M&M program through the DHHS so each participant resident would have individual use of the iPod with headphone. The remaining seven MP3 players and additional headphones were purchased by the Project Manager online through the Amazon or Walmart website. The Project Manager individually labeled each iPod player and headset and placed in a clear plastic zipper pouch for ease of retrieving by the participating staff. The DHHS provided two iTunes gift cards to download selected music. The Project Manager placed each iPod in a clear plastic badge holder with strap before placing in a clear pouch. A brochure on IMT was created by the Project Manager to be placed next to a M&M poster in the facility hallway to be available to visitors and family announcing the availability of an IMT program for the facility’s residents. A round plastic button with a M&M logo, available in multiple colors, was provided to the staff to wear on their uniforms. A music symbol magnet was created by the Project Manager to be placed on the doorway of each participant resident to alert staff and visitors on the resident’s participation in the M&M program. A self-study/reference binder with the IMT training materials was generated by the Project Manager for referencing, new staff orientation, and future training. A USB flash drive containing all educational IMT training materials was provided to the Activity Director by the Project Manager at the conclusion of the change project.

**Plans for Institutional Review Board Approval**

The long-term care facility in which the project took place does not have an Institutional Review Board (IRB) for human participants. A standard IRB approval plan was submitted to
Chatham University’s IRB in Pittsburgh, Pennsylvania in Summer 2017. A standard proposal was required because of the vulnerable population of dementia patients and to ensure the risk to these subjects are minimized in the intervention. A standard proposal entails the IRB committee members to critically review the proposal to ensure the protection of the rights and welfare of the human subjects involved in the project. The IRB committee has the authority to review, approve, disapprove or require changes before the practice change can be implemented. The Project Manager worked with the Chatham IRB advisor to develop and submit the proposal. The proposal was approved on October 10, 2017 after the Project Manager made the necessary revisions. The capstone project was scheduled to commence on January 3, 2018 and received IRB approval prior to implementation. The PAS instrument was utilized by the staff during an 8-week intervention period from January 22-March 12, 2018.

Plan for Project Evaluation

To evaluate the effectiveness of the EBP practice change, a project evaluation plan needs to be in place. The evaluation plan provides valuable information to improve the change project during development and implementation. The Project Manager collected demographic information from the staff and measured de-identified outcomes of the patients participating in the IMT intervention.

Plan for demographic data collection. The voluntary demographics data form (see Appendices B) was distributed out to the staff during the education session. The staff was given 5 minutes to complete the 9-item form. This form was used to collect demographic information on the staff participants including age, ethnicity, title, years of nursing experience and previous exposure to IMT education. This data was entered into a Microsoft Excel spreadsheet and descriptive statistics was tabulated. Coding of the data for statistical analysis was done on Excel
software spreadsheets on the demographic data. The age of the participant was reported as the mean and the range while the rest of the data was described in percentages in a bar graph and pie chart. Confidentiality of each participating staff member was maintained by assigning a random six-digit number to the participant folder. Each participating staff member was asked to place the demographic forms and assessment tests in a secured box at the back of the conference room while the Project Manager was out of the room. Staff confidentiality was maintained as no identifying data were collected and results of the knowledge tests were securely stored under lock and key by the Project Manager.

**Plan for outcome data collection and measurement.** Outcome data measurement is useful in measuring the effectiveness of the intervention. In the practice change project, outcome data on IMT knowledge, PAS scores, and antipsychotic medication usage was measured. Quantitative data was collected on outcome data by the Project Manager. Long-term goals included decreased agitation behaviors and a decrease or no increase in antipsychotic usage by the dementia residents using the IMT intervention.

**Plan for evaluation tools.** Harris, Roussel, Dearman, and Thomas (2016) assert that project evaluation involves measuring the impact of the evidence-change project (p.216). The tools used in measuring the outcome of IMT knowledge, antipsychotic medication usage, and agitation scores will be discussed next. The voluntary pre and post IMT knowledge assessment test (see Appendices C) was distributed to the participants during the educational session. This test was developed by Linda Gerdner, Ph.D. who is a content expert and renowned researcher on IMT. Permission to use the IMT test was obtained by the Project Manager (see Appendices H). The test consists of 10 questions regarding individualized music interventions and has content
validity. The participants were given approximately 10 minutes to complete the test questions. The test was administered with pen and paper for both the pre and post education sessions.

Patient chart audits from the electronic medical record (EMR) was used to evaluate the use of antipsychotic medications to treat agitation symptoms in patients with dementia. A medication EMR review was performed weekly by the Project Manager. With the IMT intervention, it was expected that there will be decrease in the frequency of agitation behaviors resulting in decreased or no increase in antipsychotic medication usage noted in the medical records. Patient charts were de-identified, and information was provided by the Nurse Practitioner for the Project Manager.

Agitation was quantitatively measured using the Pittsburgh Agitation Scale (PAS). The PAS is intended to monitor the severity of agitation associated with dementia and is based on direct observation of the patient. The PAS (see Appendices E) was specifically designed for individuals with dementia and has been utilized widely in the long-term care setting. The scale evaluates four specific behavioral symptoms (aberrant vocalizations, motor agitation, aggressiveness, and resistance to care) with a Likert-type scale that measures symptom intensity for each behavior scored. Scores on the PAS was circled pre and post music intervention by the staff for 8 weeks on the PAS instrument and turned in to the Activity Director. The Activity Director turned in the completed PAS forms to the Project Manager. The Project Manager summed up the scores on each submitted PAS form for statistical analysis. The Project Manager compiled the total scores from each submitted PAS form in determining the mean percent change from the pre and post IMT intervention.

The PAS consists of 4 items addressing aberrant vocalization, motor agitation, aggressiveness, and resistance to care. The staff rated the intensity of the behavior during the
rating period on a scale of 0-4 with 0 = not present and 4 = extremely intense behavior. The PAS score ranges from 0 to a maximum of 16. The PAS is easy to use, succinct, takes less than 5 minutes to administer, is based on direct observations of the staff, and monitors the response to the IMT intervention. The PAS is an instrument that has demonstrated inter-rater reliability (exceeded 0.80) and validity (Rosen et al., 1994). Permission to use the PAS instrument was obtained by the Project Manager (see Appendices I).

**Plan for data analysis.** Data from the IMT knowledge assessment tests were entered on a Microsoft Excel spreadsheet following the educational sessions. A comparison of the means was used to compare the mean difference of total scores before and after the educational intervention. A change in IMT knowledge was measured by comparing the pre and post-test overall group mean scores on the tests.

De-identified EMR data was entered weekly on an Excel spreadsheet to analyze the frequency of antipsychotic medication administration. Descriptive statistics was used to measure the mean and range of the number of times antipsychotic medications were given for agitation. An aggregate mean percent change from pre and post intervention was calculated to evaluate the effectiveness of the intervention. The reported findings were displayed in a bar graph.

De-identified data from the completed staff forms was entered in the Microsoft Excel spreadsheet for the PAS instrument. Descriptive statistics using comparison of the means was used for total mean PAS scores pre and post IMT intervention. Aggregate data was depicted in a bar graph. The benchmark set for the outcome by the Project Manager was at least a 10% decrease in PAS scores post intervention. This benchmark is limited in its lack of available studies to support a pre-determined benchmark (Rosen et al., 1994; Sullivan, Sillup, & Klimberg, 2014; Zieber, Hagen, Armstrong-Esther, & Aho, 2005). This benchmark was determined by the
Project Manager in noting that a PAS score is assigned when agitation behaviors are observed by
the staff from 0 (behavior not present) to 4 (highest intensity of behavior). If the resident is not
experiencing agitation behaviors in any one of the four measured behaviors, the rater will assign
a score of 0 for that behavior group. Consequently, the lower the score post intervention the
stronger the relationship that the IMT intervention was effective.

**Plan for data management.** All data was kept confidential and secure. All participating
staff was assigned a random 6-digit number code with no other identifying details by the Project
Manager during the education session. The Project Manager obtained de-identified electronic
patient records to review diagnosis, patient care notes, and medications administration records of
the participating patients in the project through the Nurse Practitioner. The PAS instrument data
was collected by the staff and turned in to the Activity Director each week. The Activity
Director assigned a code to the forms for each patient and keep a master list of the patient names
and codes. The Activity Director kept the PAS data in a locked file cabinet until it was given to
the Project Manager. The Activity Director and the Project Manager kept the PAS data
confidential by assigning a random 3-digit number to each participating resident. All data was
entered by the project manager on a password-protected personal laptop computer that was
accessible only to the Project Manager. Chart reviews of participating residents were completed
at the clinical site work computer in the physician workroom. De-identified data compiled from
the weekly chart audits were transcribed on a Microsoft Word document on a password-
protected laptop computer of the Project Manager.

All paper documents and data collection documents were kept secured in a locked file
cabinet in the Project Manager’s office in which only the Project Manager had key access. The
data collected from the instruments, demographic data forms, and tests was entered in the
Microsoft Excel software program for analysis which was stored on a password protected computer in a locked office. All data will be retained for five years after the project is completed for presentation and publication purposes. Paper files will be destroyed with an electric paper shredder and digital files will be deleted and emptied through the electronic trash bin.

Summary

This chapter outlined the importance of pre-implementation planning in implementing a successful EBP change. A project plan entails several elements necessary that culminate in a well-thought out sequence of actions required by the Project Manager to execute the change project (Harris et al., 2016). The required materials and tools were discussed along with the utilization of information technology in data collection and data analysis. Participant confidentiality and securement of data collection documents were addressed. The intervention for the EBP change project entailed staff education on IMT and incorporating a personalized music playlist using MP3 players for individuals with dementia exhibiting agitation behaviors in a long-term care facility. One outcome of the change project was decreased agitation behaviors through utilization of the PAS instrument to measure the severity of agitation behavior pre and post music intervention. A second outcome was the decreased use of antipsychotics or no further increase in antipsychotic dosage.
Chapter Five: Implementation Process

According to Melnyk and Fineout-Overholt (2015), implementing evidence-based practice (EBP) results in high-quality care and best patient outcomes (p. 6). At the long-term care facility, there are episodes of agitation exhibited by the residents with dementia that are a source of concern and frustration for the staff. Nonpharmacologic therapies are not widely employed in the clinical setting because providers and staff lack knowledge on the utilization of these therapies. There is a lack of nonpharmacological methods available to manage behavioral problems and having IMT is one such approach in handling agitation behaviors. The EBP change project involving IMT is one such approach to decrease agitation in older adults with dementia. Studies suggest that using a personalized music playlist in individuals with dementia lessens agitation behaviors and reduces the use of antipsychotic medications (Cuddy, Sikka, & Vanstone, 2015; Gill & Englert, 2013; Long, 2016). The purpose of this chapter is to discuss the implementation steps for the change project involving IMT in decreasing agitation behaviors in residents with dementia. This chapter includes an overview of the setting and participants, recruitment of residents, project implementation steps, and variations from the initial plan.

Setting

The setting is a key consideration in the implementation of an evidence-based practice (EBP) change (Ogrinc et al., 2012). The organizational culture and available resources should be considered into the implementation plan. The target setting for the practice change is a corporately owned, long-term care facility in South Texas. The facility provides skilled nursing and assisted living services including occupational, physical and speech therapies, and rehabilitation services. The maximum bed capacity is 120 beds with an average census of 95-103 residents (A. Garcia, personal communication, February 18, 2017). In the facility, upwards of
25% of the residents have dementia with approximately a quarter of these residents with a history of exhibiting agitation behaviors. The facility became MUSIC & MEMORY® (M&M) certified last year, but the music program has not been implemented. As a M&M certified facility, the organization was received from the Texas Department of Health and Human Services (DHHS) a total of 15 iPod players with headphones and chargers. The Project Manager utilized these available iPods in downloading a personalized playlist of songs for each participating resident. The location for the educational program for the staff was in the facility’s conference room. The participating residents were housed in double occupancy patient rooms in three of the four hallways at the change site.

Participants

There were two target participants in the change project: facility staff and residents living in the clinical setting. A description of the target participants will be discussed below.

Staff. The population of interest for the educational program includes registered nurses, licensed vocational nurses, nurse aides, and members of the interdisciplinary team including the speech pathologist and physical therapist. The educational program was repeated over the course of two weeks to maximize participation. There were no restrictions regarding age, gender, ethnicity, educational background, or length of employment at the facility. While attendance at the educational program will be mandatory, the pre and post knowledge test was voluntary. The facility Administrator, Director of Nursing, and Activity Director were committed to encouraging all staff to participate. Staff confidentiality was maintained as no identifying data were collected and results of the knowledge tests were securely stored by the Project Manager.

Residents. The target population for the IMT intervention was residents with a diagnosis of dementia exhibiting agitation behaviors at the facility. There were no restrictions on gender,
race, or age. The Project Manager and Activity Director obtained informed consent from the resident and/or family member to participate in the IMT intervention. The Activity Director and members of the interdisciplinary team, including the Speech Pathologist and the Director of Physical Therapy, determined which residents with dementia would most benefit from IMT. Seventeen residents were initially identified to participate in the intervention, but two declined. Consequently, a total of 15 residents were included in the intervention. Furthermore, an additional six residents from the facility were included in the IMT program because of requests from the Physical Therapy Director, Speech Pathologist, family member, or patient. These additional six residents were included during the intervention period, but data were not collected as they generally had non-dementia diagnoses. These residents included hospice, dialysis, cognitive impairment, and stroke patients. Consent to participate in the IMT program was obtained from the family members. An assessment of personal music preference was obtained by the Project Manager or Activity Director from the participating resident and/or family member who was familiar with the resident’s music preferences.

**Recruitment**

The Project Manager created flyers to advertise the educational program and recruitment of residents for the M&M program. Color copies of the flyer were distributed in the facility announcing the IMT program for patients with dementia and the educational sessions for the staff. Recruitment strategies included placing the flyers in central locations and high-traffic areas within the facility to maximize visibility and recruitment. Recruitment of residents began on January 3, 2018, with the implementation of the M&M program.

**Implementation Process**
The practice change was the implementation of an individualized music therapy (IMT) intervention as a nonpharmacological method to decrease agitation behaviors in residents with dementia. The practice change commenced after securing IRB approval from Chatham University and organizational approval. The implementation process for the EBP practice change will be systematically outlined next.

**Educational Program for Staff.** Project implementation occurred in the conference room in the long-term care facility with an educational program to include a voluntary pre and post knowledge assessment test on individualized music therapy (IMT). Informed consent was obtained from staff to participate in the educational session. The proposed interventions for the change project began with educating the nursing staff on IMT protocol and use of the Pittsburgh Agitation Scale (PAS) in measuring agitation behaviors pre and post IMT. The Project Manager provided a live class with a PowerPoint presentation and handouts on IMT. Refreshments were provided, and a small door prize for participants was made available for each educational session. Each participant was asked to sign in the attendance sheet and given a folder with associated documents. In each folder, the handouts were stapled with a set of ticket stubs for the door prize drawing and assigned a random 6-digit number. After the participant signed the attendance sheet, the folder was given to the participant, and one of the ticket stubs was placed in a basket for a drawing at the end of the program. Each folder contained several handouts including the PowerPoint (PPT) presentation, staff cover letter, staff consent form to participate, demographic data sheet, a pre and post individualized music knowledge assessment test (IMKAT), and a copy of the PAS instrument. The handout with the demographic data sheet, and the pre and post-IMKAT were printed on blue and pink color paper respectively to allow for ease of use for the participants and the Project Manager. The handouts were stapled together for the
staff to deposit the anonymous paperwork in a drop box on a table at the end of the room. Staff who declined to participate were asked to return the blank forms in the drop box in the same manner as the participating staff. The staff consent forms were reviewed by the Project Manager with the attendees prior to starting the educational program. The staff was given 5 minutes to complete the voluntary pre-IMKAT. A voluntary pretest was administered before the PPT presentation began to measure baseline knowledge of IMT. Next, a 40-minute educational PPT based on the IMT PPT outline (see Appendices G) was presented by the Project Manager who reviewed the challenging behaviors such as agitation associated with dementia, pharmacological versus nonpharmacological approaches in the treatment of dementia, assessment of agitation using the PAS instrument, an overview of the M&M program, best practices in eliciting a playlist, monitoring patient response to music, and practice case studies using the PAS instrument. The staff was notified the PAS instrument would be used to assess agitation behaviors pre and post music intervention over the course of eight weeks, from January 22-March 12, 2018. Following the PPT presentation, staff was given 5 minutes to complete the post-IMKAT to measure IMT knowledge. After the educational session, the winner of the door prize was announced, and the staff was instructed to deposit the stapled packet containing the demographic sheet, the pre and post IMKAT forms in the drop box on the table when exiting the conference room. The quantitative data from the tests and the PAS scores provided a means to measure outcomes of the intervention.

**IMT for Dementia Residents.** Informed patient consent was obtained from family members by the Project Manager and Activity Director. During the patient consent with the family member, an assessment of personal music preference was elicited to maximize time spent with the family member. Most of the music preferences elicited involved ethnic Hispanic music
such as rancheras, conjunto, boleros, tejano, and mariachi music. The Project Manager requested the family member display the singer and/or song details from web resources on their android phone and took a screenshot with her phone to ensure the accuracy of locating that specific song and downloading it on the iPod/MP3 player. When a singer was mentioned, but no song titles were mentioned, the Project Manager performed a search of greatest hits for that singer and downloaded their most popular songs. Certain song lists were modified by the Project Manager during the intervention period according to patient preferences and family requests. Each iPod was fully charged and labeled with the residents’ name using a handheld label maker. The Project Manager purchased a vertical desktop charging station with 8 USB ports and 12 charging outlets to charge the MP3 players as needed in the Activity Director’s office. A see-through plastic badge holder with lanyard was used to contain each iPod/MP3 player and placed in a clear zipper case for each participant. Each zippered case was clearly labeled with the participant’s name and included a set of headphones and the badge holder containing the iPod/MP3 player. For infection control purposes each participant was assigned their own iPod/MP3 player and zippered case. Two copies of the PAS instrument were included in each zippered case to promote the availability of the instrument for the rater. Additional blank copies of the PAS instrument (English and Spanish versions) were placed in large clear envelopes and placed in the file box next to the Activity Director’s office. The Project Manager provided a plastic file box to hold the zippered cases and supplies for ease of accessibility. The file box was later upgraded to a larger plastic tote box to hold additional zippered cases. To mitigate the potential loss of the iPod/MP3 players, staff were instructed to check out the players from the Activity Director during working hours from 7:30am-4pm on weekdays. PAS forms that were filled out by the staff were collected in a secure envelope maintained by the Activity Director.
and given to the Project Manager weekly. The Project Manager coached the nurse aides and certain family members on correct placement of headphones on the participant, instructions on iPod/MP3 player controls to include turning it on, adjusting the volume, and filling out the PAS instrument pre and post IMT intervention. Earphone splitters were available so that staff members could adjust the volume on the iPod/MP3 player for the resident accordingly and family members had the option to listen to the music concurrently with the resident. A small portable speaker was made available for staff and family members to allow the option for the resident to listen without the headphones. For example, the staff member had the option to utilize the portable speaker with the MP3 player in the shower room while bathing the resident. The Project Manager provided verbal instructions for participants on how to adjust volume and select/advance songs on the iPod/MP3 players. The implementation steps of the change project are outlined in the phases below.

**Phase 1.** During Phase I the project manager met with the team to discuss an overview of change project and determined which 15 residents with dementia would participate. The Project Manager reviewed, edited, and printed handouts for the staff. Recruitment of residents and announcement of IMT educational training sessions were created and posted in high traffic areas throughout the facility. The Project Manager conferred with the Director of Nursing to determine available dates and times the conference room could be reserved for the educational sessions with the staff. An announcement was made during the staffing meeting to inform the staff of the upcoming training.

**Phase 2.** During Phase II the Project Manager provided four educational program sessions lasting up to one hour for the staff. The Project Manager and Activity Director obtained informed consent from each participating resident’s family member to participate in the
intervention. The assessment of personal music preference form (patient or family version) was used to obtain information on resident’s preferred music preferences. The Project Manager elicited a personalized playlist from residents and/or family members to download the songs on the iPod/MP3 players. Staff was encouraged to use the PAS instrument twice a week to monitor pre and post IMT during the intervention period and to turn completed forms to the Activity Director.

**Phase 3.** During Phase 3, a personalized playlist was downloaded to an iPod or MP3 player for each participating resident by the Project Manager. Each participating resident was assigned their own iPod/MP3 player with headphones and kept in an individually labeled, clear zippered case. The MP3 player, headphones, clear badge holder, and zippered cased were labeled with the resident’s name. The music intervention took place over the course of 8 weeks from January 22-March 12. The Project Manager was on site to coach the nurse aides in the implementation of IMT for the residents. The Project Manager conducted de-identified chart audits on antipsychotic medication usage during the intervention period to determine if IMT was an effective nonpharmacological method in decreasing agitation behavioral problems. With the IMT intervention, it was anticipated that agitation behaviors would decrease resulting in a corresponding decrease or no further increase in antipsychotic medication use in these patients.

**Phase 4.** During Phase 4 the staff continued with the implementation of IMT with the participants. The staff monitored for agitation behaviors using PAS pre and post-intervention for eight weeks. The staff, Activity Director, and Project Manager reassessed music preference with the resident or family and determined if any changes were required. The Project Manager conducted de-identified chart audits on antipsychotic medication usage in certain participants.
**Phase 5.** During Phase 5 the Project Manager summarized data collected from the PAS scores and chart audits. A donation campaign flyer was created and posted in public areas by the Project Manager to advertise donation of used iPods/MP3 players to the facility to facilitate sustainment of the program. The Project Manager gave a 15-minute presentation to the staff on the data results and efficacy of the change project during a pizza party celebrating the implementation of the M&M program. The Project Manager created a brochure on the IMT program at the facility to advertise the M&M program and placed then in an acrylic brochure holder next to a large M&M advertisement poster in the hallway. A notebook binder containing all training materials as well as the personalized playlists was downloaded on a flash drive and handed over to the Activity Director. A music symbol magnet was placed on the doorway of each participating resident to signify to staff and visitors of the resident’s inclusion in the M&M program. Plastic buttons with a M&M design, in various assorted colors, were distributed to the staff to wear to advertise the M&M program at the facility. A meeting was held with facility leadership to request a budget for the purchase of MP3 players for future residents. The Project Manager and Activity Director discussed the possibility of holding a luncheon fundraiser to generate funds to purchase MP3 players.

**Chart Audits.** Weekly patient chart audits were de-identified, and information was provided by the Nurse Practitioner for the Project Manager to monitor for antipsychotic medication usage. Providing IMT for a resident with dementia experiencing agitation behaviors may help decrease behavioral symptoms and mitigate the need for antipsychotic medication to treat these behavioral problems. A chart audit on target residents on antipsychotic medication therapy could provide additional support on the efficacy of a nonpharmacological method such as IMT to treat behavioral symptoms.
Variation Plan

Variations to the planned implantation can occur and require the Project Manager to be both flexible and adaptable to achieve implementation success (Harris, Roussel, Dearman, & Thomas, 2016). For example, after the educational sessions with the staff, the Activity Director informed the Project Manager that some of the nurses’ aides preferred to converse and read in Spanish. Consequently, the Activity Director had the PAS instrument translated into Spanish. The PAS instrument was made available in both English and Spanish versions to allow for language preferences of the staff. Part of a team leader’s role is understanding the communication preferences of the team (Harris et al., 2016). During the initial education session with the staff, a family member of one of the participating residents requested to attend, and permission was granted by the Project Manager. It was noted that nursing staff was not as engaged with filling out the PAS instrument and implementing the IMT as much as the Project Manager would have liked. To mitigate this situation, the Project Manager provided one-on-one coaching for several of the nurse aides to encourage the implementation of IMT for participating residents. Coaching is considered a powerful tool to accomplish specific objectives (Harris et al., 2016). The coaching provided by the Project Manager reinforced the importance of measuring outcomes with the residents and helped build staff confidence by active participation in the intervention. Also, it was observed by the Project Manager that participating residents did not always exhibit agitation behaviors but wanted to have the IMT to help relieve boredom or as an available form of entertainment besides the television set. In one case, a female resident with dementia with depression and anxiety approached the Project Manager several times requesting “I want my radio.” When the Project Manager and Activity Director provided the MP3 player for her use, the resident started smiling and tapped her foot to the rhythm of the music.
Previously, this resident was disengaged with group activities, kept her head down frequently, and preferred to be left alone. The Activity Director remarked that this resident participated more in the group recreation activities and requested her “radio” during the week. The Speech Pathologist participated in filling out the PAS instrument in a participating resident in her clinic and recommend the inclusion of additional resident in the IMT program. The Project Manager trained two of the family members to implement the IMT intervention and to fill out the PAS instrument pre and post-intervention. As a result, these family members consistently provided the IMT intervention and filled out the PAS instruments during the intervention period with positive outcomes. Some of the comments from the family members include:

- “Surprise after music session, Mom became more alert of where she was at. Questions place of where she lives.”
- “Visually happier, somewhat more willing (to cooperate with washing).”
- Mom asks questions about the place where she is living. Music helps her become more alert.”
- “Mom gets alert after her music session. Music seems to relax her and gets her to interact”
- “Mom enjoys hearing her music. I put her headphones every time I come to see her. Music gets her alert.”
- “Mom has good signs where she asks questions and is alert after the music sessions.”
- “Mom is alert and asks questions about the objects (flowers) in the room and who made the flowers.”
- “Mom did good, she noticed that one side of the headphone she was not hearing because that side had fallen off her ear.”
• “Today, mom was tired, she listened to music for 45 minutes. She went ahead and took off headphones on her own.”
• “Mom still gets very alert (with music). I was hanging her clothes in the closet and she recognized that I had dropped a sock because she told me you dropped something.”
• “Mom is responding good. Today, she had a visitor, a young lady that cared for her 8 years ago and she remembered the lady’s name.”
• “Mom had some allergies, but she listens to her music and was content.”
• “Mom recognizes when and what I am doing around her. I am pleased that the music program gets her alert.”
• “Mom is hard of hearing, but she is able to hear music with her headphones.”
• “I am pleased that Mom is able to participate in the music program, I can see the difference it has made. Her appetite seems improved after listening to music.”
• “I can see what a difference music has made for my mother. Do you think I can get this music program for my brother, who has vascular dementia, at another nursing home? He played drums as a child and loves music.”

Summary

A well-planned EBP project requires careful planning and comprises of a sequence of actions and processes towards successful implementation (Harris et al., 2016). The purpose of the EBP change project was to implement an IMT program using MP3 players to decrease agitation symptoms in individuals with dementia in a long-term care facility. Although the project went according to the original plan some variations to the plan were required. In this chapter, the Project Manager discussed the setting, participants, recruitment strategy, implementation steps, and variations from the plan.
Chapter Six: Evaluation and Outcomes of the Practice Change

Harris, Roussel, Dearman, and Thomas (2016) assert having a well-designed project with measurable outcomes provides a solid foundation for evidence-based practice (EBP) (p. 11). The purpose of this chapter is to describe the participant demographics, describe the intended and unintended outcomes, and to evaluate the effectiveness of the change project. Melnyk and Fineout-Overholt (2011) contend measurement of outcomes of practice can be considered a powerful change promoter (p. 226). Expected outcomes of the IMT intervention on agitation in dementia patients was increased staff knowledge on IMT, decreased agitation behaviors in patients with dementia as indicated by the pre and post IMT scores on the PAS, and no increased or decreased use of antipsychotic medications in subsequent chart review audits.

Participant Demographics

A total of 15 residents with dementia were in the cohort and monitored for PAS scores during the intervention period. All of the residents were of Hispanic ethnicity with the exception of two residents who were Caucasian. The age range was 66 years old to 98 years old, with a mean age of 86 and a median age of 88. Most of the song lists elicited were Hispanic ethnic music and some classic country artists from the 1950’s-1960’s. An additional six residents were added the IMT program with other diagnosis including cognitive communication deficit, end stage renal disease (ESRD), schizophrenia, and post cerebral vascular accident (CVA). These additional six residents were not monitored for PAS scores.

A total of 40 staff participated in the educational sessions with 27 staff filling out the voluntary demographic forms. The self-developed demographic forms comprised of 9 questions that required the staff to circle the most appropriate response. Most of the staff participating in the sessions were female (81.48%) and the rest male gender (18.52%). See Figure 6.1. The age
range was 19-63 years old with the mean age 37.7 years old. One participant did not disclose age on the demographic form. The ethnicity of the participants indicated 89% Hispanic, 7.4% Caucasian, and 3.7% African-American. See Figure 6.2. Fifty-two percent of the participants were Nurse Aides. Thirty-percent were licensed vocational nurses (LVNs), 11% were registered nurses (RNs), and the remaining 7% of the staff did not disclose a title. Participant data revealed the number of years in position at the facility with 41% indicating they worked there for less than five years while 26% worked between 5-10 years at the facility, and 15% worked on average 10-15 years at the facility. On question 8 of the demographic form, the staff was asked if they believed that personalized music therapy could play an important role in helping to decrease agitation in persons with dementia. Thirty-three percent of the staff responded they strongly agreed, 30% of staff indicated they agreed, 7% were neutral, and 30% indicated they strongly disagreed. On question 9 of the demographic form, the staff was queried if they had any prior training in music therapy to treat agitation behaviors in persons with dementia. Seventy-eight percent of the staff indicated they had not been exposed to IMT education while 22% indicated having been previously educated on IMT.
Figure 6.1 indicates the gender breakdown of the staff who participated in the educational sessions. 22 females and five males completed the demographics form from the training.

Figure 6.2 displays the ethnic breakdown of the staff participating (n=27) in the educational sessions. 24 identified themselves as Hispanics, two as Caucasian, and one as African-American.
Table 1

*Staff Participant Demographics*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td>15</td>
<td>56%</td>
</tr>
<tr>
<td>LVN</td>
<td>8</td>
<td>30%</td>
</tr>
<tr>
<td>RN</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Years in position</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5 yrs</td>
<td>11</td>
<td>41%</td>
</tr>
<tr>
<td>5-10 yrs</td>
<td>8</td>
<td>30%</td>
</tr>
<tr>
<td>10-15 yrs</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>15-20 yrs</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>&gt;20 years</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Years total in nursing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>7</td>
<td>30%</td>
</tr>
<tr>
<td>6-10 yrs</td>
<td>6</td>
<td>22%</td>
</tr>
<tr>
<td>11-15 yrs</td>
<td>7</td>
<td>30%</td>
</tr>
<tr>
<td>16-20 yrs</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>&gt;20 yrs</td>
<td>3</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle school</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>High school, not graduate</td>
<td>5</td>
<td>18%</td>
</tr>
<tr>
<td>High school graduate</td>
<td>7</td>
<td>26%</td>
</tr>
<tr>
<td>College, no degree</td>
<td>7</td>
<td>26%</td>
</tr>
<tr>
<td>College graduate</td>
<td>7</td>
<td>26%</td>
</tr>
</tbody>
</table>

**Outcome Findings**

Ettorchi-Tardy, Levif, and Michel (2012) has described benchmarking as a “process of seeking out and implementing best practices at the best cost” (p. e102). It is important to select a benchmark as a standard for evaluating project outcomes because it will allow the Project Manager to utilize benchmarking strategies to achieve “best practice”. The benchmark for identifying and rating agitation behaviors in dementia patients is known as the Pittsburgh Agitation Scale (PAS) instrument that was developed by Rosen et al., (1994) and based on direct observations of the patient. The PAS instrument is easy to use, requires minimal instruction to
use, takes less than 5 minutes to complete, and has established validity and interrater reliability (Rosen et al., 1994).

**Outcome One: Knowledge change.** The 10-item Individualized Music Intervention Knowledge (IMIK) Assessment Test was utilized to measure staff knowledge about IMT pre and post educational sessions. Descriptive statistics, using Microsoft Excel 2016, was used to compare pre and post-test assessment on the aggregate data. Each test was hand-graded by the Project Manager, and the score was entered in the Excel spreadsheet for the de-identified participant. For the 40 attendees in the education sessions, 27 voluntarily participated in the test. The baseline mean score was 5.7 on the pre-test with a SD of 2.7064. The range for the pretest was 0-9. The baseline mean score post-test was 9 with a SD of 1.4800. The range for the post-test was 4-10. The benchmark for the change in scores on the IMIK test was set at a 10% increase in group mean post-test scores compared to pre-test scores. For this project, there was a 33% increase in knowledge on the post-test scores which exceeded the predetermined benchmark of 10%. Consequently, the educational intervention with the staff indicated there was an increase in knowledge on IMT during the education program. See Table 2 for the results of the pre and post IMTK assessment tests.

Table 2

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Low</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>9</td>
<td>0</td>
<td>5.7</td>
<td>2.7064</td>
</tr>
<tr>
<td>Post-test</td>
<td>10</td>
<td>4</td>
<td>9</td>
<td>1.4800</td>
</tr>
</tbody>
</table>

**Outcome Two: PAS scores.** The empirical indicator chosen to evaluate the IMT intervention was the Pittsburgh Agitation Scale (PAS) rating instrument. The PAS instrument
was specifically designed for individuals with dementia, has been utilized widely in the long-term care setting, and requires minimal time and training to administer (Rosen et al., 1994). The PAS is an intensity rating instrument used to measure the level of severity for behaviors associated with dementia. The PAS instrument measures four specific types of behavior and rates the severity of agitation in four behavior groups including aberrant vocalization, motor agitation, aggressiveness, and resisting care on a 5-point Likert-type scale ranging from zero to four (Rosen et al., 1994). The rater uses behavioral anchors to assign the highest possible score within each behavior group with the higher score indicating increasing symptom intensity and a score of zero indicating absence of agitation behavior. The PAS is based on direct observation of the patient, takes less than 5 minutes to complete, and monitors the response to the IMT intervention. The PAS instrument is based on direct observations of the patient by the rater, was created to monitor the severity of agitation associated with dementia, and has moderate interrater reliability \((r =0.61, p <0.01)\), strong interclass correlation, \((R =0.82)\) and measures of validity (Rosen et al., 1994). To determine if the IMT intervention was effective in decreasing agitation behaviors in the residents with dementia, the PAS instrument was utilized pre and post music intervention. The PAS instrument was printed with a pre and post music intervention on both sides of the paper for ease of use for the staff and to save on paper usage. The PAS instrument was promoted for use during the eight-week intervention period. Completed PAS instruments were submitted to the Activity Director and turned in to the Project Manager for analysis. A total of 29 completed PAS instruments were turned in with 12 of them indicating a change in agitation behaviors post music intervention. The twelve completed PAS indicated an intensity score of one pre-music intervention in the areas of Aberrant Vocalization \((n=3)\), Motor Agitation \((n=7)\) and Resisting Care \((n=2)\) and a resulting intensity score of zero post music intervention.
There was no indication of how long the music intervention took place and the purpose of the music intervention during the rating period.

**Outcome Three: Chart audits.** With the IMT intervention, it was hypothesized there would be a decreased frequency of agitation behaviors resulting in a decrease or no further increase in antipsychotic medication usage in the patient medical records. This IMT cohort indicated none of the residents were currently on antipsychotic medications during the intervention period. However, three of the residents were on either alprazolam, buspirone, or citalopram. The Project Manager performed weekly chart audits to determine if there was any increase or change in the dosage of three above mentioned medications. There was no increase or change in dosage noted for the above medications for the residents in the chart audits during the intervention period.

**Effectiveness of Intervention**

Melnyk and Fineout-Overholt (2015) assert measurement of outcomes is seen as a powerful change promoter (p. 226). In the present long-term care facility, there is a lack of alternative treatment for patients with dementia exhibiting aggression, thus creating an identified need for non-pharmacological interventions. Evidence-based guidelines advocate nonpharmacological approaches in the management of agitation in older adults over medication therapy, such as antipsychotic medication, which is associated with deleterious effects and increased mortality (American Geriatrics Society, 2015). The intended outcomes of the change project was increased staff knowledge on IMT, decrease in PAS instrument scores post music intervention, and decrease or no increase in antipsychotic medication usage during the intervention period.
**Outcome one.** The percent change in the mean staff knowledge from the pre and posttest indicated an increase of 33%, which exceeded the benchmark of 10% set by the Project Manager. There were ten total questions on the test. The mean score pre-test was 5.7, and the mean score on the post-test was 9. This outcome met the benchmark and supported the educational intervention to increase staff knowledge in IMT. These educational sessions with the staff can promote stakeholder engagement and promote the use of IMT in the residents.

**Outcome two.** The total number of PAS instruments submitted to the Activity Director during the eight-week intervention period was 29. See Table 3. Twelve of the completed PAS indicated an intensity score of 1 in the areas of Aberrant Vocalization and Resisting Care. A score of one on Aberrant Vocalization is considered low volume, not disruptive in the milieu, and can including crying (Rosen et al., 1994). A score of one on Motor Agitation denotes pacing or moving about in the chair at a normal rate (appears to be seeking comfort, looking for the spouse, purposeless movements) (Rosen et al., 1994). Some of the activities associated with Resisting Care include washing, dressing, eating, medications or other. The specific activity associated with Resisting to Care in the submitted instrument was washing. A score of 1 on Resisting Care indicated procrastination or avoidance of the activity. The post music intervention on the PAS was zero, indicating the behavior was not present. The remaining completed PAS instruments revealed agitation behaviors pre and post music intervention was absent as designated by a zero-intensity rating. This may have indicated the staff was administering IMT during non-agitation periods for other reasons such as anxiety, depressive symptoms, resident request, or for entertainment purposes.
Table 3

*Mean Pittsburgh Agitation Scale Scores Pre and Post Music Intervention (n=29)*

<table>
<thead>
<tr>
<th></th>
<th>Aberrant Vocalization</th>
<th>Motor Agitation</th>
<th>Aggressiveness</th>
<th>Resisting Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>1 (n=3)</td>
<td>1 (n=7)</td>
<td>0</td>
<td>1(n=2)</td>
</tr>
<tr>
<td>Post-intervention</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Outcome three.** Patient chart audits from the electronic medical record were utilized to evaluate the use of antipsychotic medications in the cohort. Patient charts were de-identified, and information was provided by the Nurse Practitioner for the Project Manager. With the IMT intervention, it was predicted there would be a decrease in the frequency of agitation behaviors resulting in a decrease or no further increase in antipsychotic medication usage in the audits (Thomas et al., 2017). Chart audits revealed that none of the residents in the aggregate were on antipsychotic medications during the intervention period. However, three of the residents were on either alprazolam, buspirone, or citalopram. The Project Manager performed weekly chart audits to determine if there was any increase or change in dosage in these medications. The results of the chart audits indicated there was no increase in dosage noted for these medications.

**Summary**

Measuring outcomes of the project are vital in determining the impact made on healthcare quality and patient outcomes as a result of the EBP practice change (Melnyk & Fineout-Overholt, 2011). Evaluation of the project can measure the impact of the practice change (Harris et al., 2016). The Project Manager executes the responsibility of measuring the impact of the project objectives (Harris et al., 2016). There were three outcomes measured for
the practice change. For outcome one, there was a 33% increase in staff knowledge on IMT post-test which exceeded the benchmark of 10% set by the Project Manager. Although there was an increase in staff knowledge on IMT that did not necessarily translate into outcome two, which was the utilization of the PAS instrument by the nursing staff during the intervention period. With that being said, the PAS instrument was utilized by family members and indicates the ease of use of the instrument and family engagement with the IMT intervention. For outcome three, there was a lack of antipsychotic medication usage in the aggregate. Three medications (alprazolam, buspirone, and citalopram) was monitored by the Project Manager during chart audits in determining a change in frequency or dosage of these medications. Unexpected outcomes revealed qualitative feedback from family members and anecdotal remarks from the staff demonstrating the positive effects of IMT on the residents including increased engagement with others, increased patient and family satisfaction, improved mood, and increased cooperation with the delivery of care.
Chapter Seven: Discussion

According to Melnyk and Fineout-Overholt (2015), an "evidence-based approach to care allows healthcare providers to access the best evidence to answer the pressing clinical questions in a timely fashion and to translate that evidence into clinical practice to improve patient care and outcomes" (p. 7). The aim of the practice change project was to evaluate the effectiveness of individualized music therapy (IMT), using MP3 players, in the non-pharmacological treatment of agitation behaviors in older patients with dementia in the long-term care setting. The purpose of this chapter is to discuss the recommendations and sustainment of practice change for the clinical site, implications for policy and health promotion, the role of the DNP-prepared nurse, next steps for evidence-based practice (EBP), and future plans for dissemination of findings.

Recommendations for Site

The implementation of the IMT program at the clinical site indicate several opportunities for improvement. At the project site, there is an absence of an IMT program for the dementia residents. The aim of IMT is to provide a personalized playlist to facilitate the resident with dementia experiencing agitation symptoms, towards a state of relaxation and general well-being, thus reducing the need for antipsychotic medications and decreasing behavioral symptoms of agitation (Raglio et.al 2015, p. 1538). It was noted by the Project Manager that coaching of the nurse aides was required for active implementation of the IMT for the target residents. The Project Manager recommends that the intervention be incorporated into the care plan and have a provider’s written order to uphold IMT as daily practice. Craig (2014) examined the effects of music therapy on agitation behaviors in persons with dementia and showed the effectiveness of music therapy in persons with various stages of dementia with the optimum frequency of intervention two to three times a week for 30-50 minutes. Ridder et al. (2013) corroborated the
use of music therapy in reducing agitation and preventing medication increases in patients with dementia. During the intervention period two family members were actively engaged in providing IMT for their loved one with positive outcomes. A second recommendation entails involving more family members to take an active role in providing IMT for their loved one. IMT can facilitate meaningful interaction between the patient and others (Gerdner, 2005). A third recommendation involves increasing the accessibility of the MP3 players for both the staff and the resident. To track the use of the iPods/MP3 players, these players were secured in the Activity Directors office and available for use during the weekdays from 7:30am to 4pm. The Project Manager recommends that the MP3 player be kept at the resident’s bedside to allow easy access to the IMT intervention and available at all times to help those residents who “sundown” in the evening hours. Another recommendation involves increasing the visibility of the residents participating in the intervention and increasing public awareness of the IMT program at the clinical site. The Project Manager observed there were magnet symbols on some of the doorways of the residents at the clinical site. For example, a magnet depicting a “falling” yellow star indicated the resident was at fall risk. Accordingly, the Project Manager developed a treble clef music symbol magnet to indicate the resident’s participation in the IMT program. These magnets were created by printing and laminating a music symbol on cardstock. After the securing a small piece of magnetic tape to the back of each laminated cardstock, the magnet was placed on the doorway of each participating resident. An information brochure announcing the availability of the MUSIC & MEMORY® program at the facility was created by the Project Manager to increase visitor and family awareness of the IMT program. It was noted after the educational intervention for the staff that some of the nursing assistants preferred to communicate in their native language, Spanish. The Project Manager was culturally sensitive to
the needs of the nursing staff and had the Pittsburgh Agitation Scale (PAS) instrument translated into a Spanish version.

**Plans to sustain change.** Maintaining organizational change requires an understanding of the facility’s capacity to make a sustainable improvement (Scott-Cawiezell, 2005). An organizational culture that promotes teamwork and innovation is crucial in building high-performance teams and in sustaining change (Scott-Cawiezell, 2005). At the clinical site a change in leadership was noted as evidenced by the third change in the Director of Nursing personnel since the Project Manager started the clinical practicum. Consistent leadership is essential in building high-performing teams and improved communication among team members can influence improvement and sustain change (Scott-Cawiezell, 2005). Sustainment of the IMT program involved the Project Manager promoting the donation of MP3 players campaign at the facility. The Project Manager created a flyer for the donation campaign to seek gently used MP3 players. These flyers were distributed at the clinical site in visible areas to generate public awareness of the donation campaign. These flyers have not generated any donations yet, but a family member has bought an iPod shuffle for a resident’s for participation in the IMT program. The Project Manager has been in discussion with the Activity Director on fundraising events at the organization to help purchase additional MP3 players for other residents who would benefit from IMT. The Project Manager has also been in discussion with the Administrative Officer to order additional MP3 players for the residents. During one such meeting, the Administrative Officer has agreed to work with the Activity Director in adding the purchase of MP3 players to the annual facility budget. Sustainment of the IMT program would also involve procuring music “champions” from each participating hallway in the facility to take an active preceptor role in coaching the staff to implement IMT for the participants. Inclusion of designated “music
champions” has been recommended to facility leadership to engage nursing aides to take a more ownership role in promulgating the IMT intervention.

Implications for Policy

There are policy implications at the institutional, state, national, and international level. At the facility there is leadership support from the Activity Director, Director of Nursing, Administrator, Speech Pathologist, and Physical Therapist for the IMT practice change. The facility became M&M certified last year but has not been able to implement the music program as mandated by the department of Texas Health and Human Services (TXHHS). State projects relevant to the change project include the MUSIC & MEMORY® (M&M) initiative and the Texas Reducing Antipsychotics in Nursing Homes, Phase II, Providing Individualized Assistance and Support. Such programs aim to decrease antipsychotic usage in the management of residents with dementia and to utilize a nonpharmacological approach such as the M&M program (TXHHS, n.d.). At the state level, the department of TXHHS provides oversight of the licensing and credentialing of long-term care facilities and allows for civil money penalties (CMP) to be utilized for projects that benefit residents at these facilities (TXHHS, n.d.). The TXHHS presently tracks Minimum Data Set (MDS) data on behavioral symptoms and antipsychotic usage, specifically on the residents in the M&M program to measure the efficacy of the program. The MDS is a federally mandated assessment completed by facility coordinators at periodic intervals (e.g. admission, discharge, quarterly, annually, and when a notable change occurs) for all nursing home residents in the state (Thomas et al., 2017). MDS coordinators periodically send updated assessments to the TXHHS to maintain reimbursement and funding for their facility. At the national level, the Centers for Medicare and Medicaid (CMS) imposes civil money penalties (CMP) against those Medicare or Medicaid supported long-term care facilities
that are noncompliant with federal requirements for nursing home facilities (TXHHS, n.d.). The Social Security Act, in sections 1819 and 1919, permitted federally imposed CMP funds for projects and activities that benefit residents (Social Security, n.d.; TXHHS, n.d.). These CMP funds has been utilized by the TXHHS to certify 432 nursing homes in the M&M program throughout the state (TXHHS, n.d.). The World Alzheimer Report 2015: The Global Impact of Dementia speaks of global prevalence and worldwide costs associated with dementia (Alzheimer’s Disease International [ADI], 2015) and estimates that the number of people diagnosed with dementia worldwide will increase from 46 million to 131.5 million by 2050 and is expected to become a trillion-dollar disease by 2018. Alzheimer's disease is considered one of the most significant global health issues in the world today and in the future. The Global Burden of Disease (GBD) is an approach on measuring the impact of dementia in comparison with other health conditions and provide disease impact information to influence policymaking and planning at the regional, national, and international level (ADI, 2015). Alzheimer’s disease is of particular “burden” on the family or caregiver. In the Essentials of Doctoral Education for Advanced Nursing Practice (AACN, 2006) Essential V: Health Care Policy for Advocacy in Health Care articulates how the doctoral prepared nurse can proactively engage in the design, influence, and implementation of health policy at all levels including institutional, local, state, regional, federal, and international levels (AACN, 2006).

**Links to Health Promotion**

The practice change meets the Institute for Healthcare Improvement (IHI) Triple Aim initiatives (IHI, 2017):

- Improving patient care experience (including quality and satisfaction)
- Improving the health of populations
• Reducing the per capita cost of healthcare

The practice change meets the IHI triple aim by providing individually tailored music playlists, based on personal preferences, which can augment the patient care experience, incorporates non-pharmacological approaches in the treatment of agitation behaviors, is cost-effective, and easily administered by staff and family members. For example, antipsychotic medication usage can contribute to falls in residents. (Wu, Keeler, Rubenstein, Maglione, & Shekelle, 2010). Mitigating the patient’s fall risk factors by eliminating or reducing the need for antipsychotic medications can decrease fall risk. Start-up costs for the implementation of a M&M program are relatively low and include staff training and iPod/MP3 player and music purchases (Thomas et al., 2017). An individualized music program can promote caregiver interactions, enhance patient-centered care, and improve quality of life. These outcomes would also support staff engagement and staff/patient satisfaction in caring for the patient with dementia.

Role of DNP-prepared nurse. The DNP prepared nurse can play a key role in shaping health policy and advancing the profession of nursing. The DNP prepared nurse is well-versed to cite and disseminate evidence to improve healthcare resources and influence health policy (Melnyk & Fineout-Overholt, 2015, p. 417). Doctoral education helps the nurse become more aware of policy initiatives and assume a leadership role in public policy and patient advocacy. The 2006 American Association of Colleges of Nursing (AACN) outlined the core curriculum elements and competencies for all advanced nursing practice roles in The Essentials of Doctoral Education for Advanced Nursing Practice (AACN, 2006). The DNP prepared nurse can analyze and critically evaluate the review of literature and other research to determine the best available evidence for practice (Chism, 2016).
Next Steps for Evidence-based Practice

The DNP prepared clinician is in the unique position to identify clinical problems in the healthcare setting and implement evidence-based practice (EBP) practice changes to promote positive patient outcomes (Melnyk & Fineout-Overholt, 2015). The next steps for the EBP change project is to expand it to other areas including cognitively impaired individuals, post-traumatic stress disorder patients, mental health patients, dental patients, traumatic brain injury patients, patients in the intensive care units and medical-surgical units. There are numerous small-scale studies on the beneficial effects of IMT but lack of rigorous evidence in the form of randomized controlled trials in the therapeutic effects of music therapy in persons with dementia (Spiro, 2010). Implications for EBP in the future include additional non-pharmacological therapies need to be explored further to determine what improvement in well-being and quality of life is most effective in alleviating behavioral symptoms in individuals with dementia.

Plans for Dissemination

The DNP prepared nurse is a leader who inspires and leads others in change (Chism, 2016). Some ways to promote and disseminate EBP include oral/podium presentations, conferences, panel discussion, roundtable, poster presentation, podcasts, small-group presentation, hospital and professional committees, journal clubs, community meetings, and professional publication (Melnyk & Fineout-Overholt, 2015). Professional communication of EBP findings will achieve maximum value to clinical practice and improved patient outcomes (Melnyk & Fineout-Overholt, 2015, p. 391). Plans for dissemination of the capstone project include presenting in the Nursing Grand Rounds at the Project Manager’s facility, a presentation for the facility Inpatient Nurse Practice and Performance Improvement (INPPI) Council, a poster board or podium presentation at a national EBP conference, and professional publication in a
peer reviewed nursing journal. The Project Manager is co-chair of the facility EBP committee and plans to present an overview of her capstone project for its members. The Project Manager has plans to co-present an EPB poster on “Implementation of the M&M program in the Veterans Administration (VA) Community Living Centers” at the facility EBP poster fair in Fall 2018. The Project Manager will help facilitate the implementation of the M&M program at another local long-term care facility. The Project Manager will serve as preceptor/mentor for a graduate nursing student in need of clinical practicum hours. The Project Manager was able to secure a clinical practicum site for the graduate student and will help mentor the student on how to implement IMT at their clinical practicum site. The Project Manager recently received a Veteran’s Administration (VA) Innovation Investment grant at her organization. The grant monies will enable her to provide IMT using MP3 players for Veterans to decrease anxiety behaviors in mechanically ventilated patients in the medical intensive care unit (MICU) and for sustainment of the M&M program in the community living centers at two VA campuses. Furthermore, the grant monies will purchase additional MP3 players to increase the number of patients in the IMT program who are experiencing behavioral symptoms in the long-term care units at her facility and potentially expand to other units throughout the facility.

It is the Project Manager’s ultimate goal to spread the IMT program to hospice/palliative care patients, dental patients, spinal cord injury patients, polytrauma patients, and mental health patients throughout her organization. The IMT interventions can be assimilated on other units in the organization including the hospice unit, other intensive care units, and mental health units. Literature supports music therapy in treating depression (Maratos, Gold, Wang, & Crawford, 2008) and anxiety in ventilator-dependent patients (Wong, Lopez-Nahas, & Molassiotis, 2001).

Summary
The DNP prepared nurse can have a major impact on improving healthcare delivery to positively impact patient outcomes (Chism, 2016). Engagement of staff at all levels can help eliminate barriers to change and promote EBP implementation (Melnyk & Fineout-Overholt, 2011). At the clinical site it was noted that the nurse aides were not actively engaged in the IMT without prompting and coaching by the Project Manager. With that said, members of the interdisciplinary team, facility leadership, and family members were engaged and supportive of the practice change. The practice change was supportive of the facility leadership and a priority for the organization to promote compliance with the state and national policy initiatives to decrease antipsychotic usage in the management of residents with dementia and to incorporate a nonpharmacological approach with the implementation of the MUSIC & MEMORY® program. A practice change that aligns with the organizational priorities or is a focus of quality initiatives mandated by regulatory agencies is more likely to garner administrative support (Melnyk & Fineout-Overholt, 2015). Melnyk and Fineout-Overholt (2015) suggest that successful engagement in EBP requires involvement of all staff at all levels who are impacted by the change including early adopters and those who are resistant to change (p. 206).

In this chapter the recommendations for the clinical site were outlined including opportunities for improvement such as incorporating IMT in the care plan and provider’s orders to make the IMT intervention part of daily practice. In addition, having designated nursing assistants serve as music champions will promote ownership of the IMT intervention and help reduce barriers to EBP implementation. Staff engagement is essential in EBP implementation. The demographics from the staff at the clinical site revealed 88.9% of Hispanic ethnicity with 56% of the participants indicating the title of nursing assistant. In personal communication with the Activity Director, the Director noted that several of the nursing assistants preferred to
communicate in the Spanish language. Accordingly, the Pittsburgh Agitation Scale (PAS) instrument was translated into Spanish to decrease barriers to language and promote comfort with using the instrument. Other recommendations include increasing accessibility of the IMT to staff and family at all hours and increasing public awareness of IMT through a facility-wide MP3 donation campaign and a promotional IMT brochure. Schein (2010) noted that transformative change involves the individual or group who is the target for change should unlearn as well as relearn something new. The difficulty noted with resistance to change involves unlearning because most of what is learned has become ingrained into the individual’s routine (Schein, 2010, p. 301). Billings and Kowalski (2006) observed that bridging the gap between evidence and practice is key to facilitating cultural change. Melnyk and Fineout-Overholt (2015) add that education alone does not change behavior and interventions need to be specifically tailored to the target audience and setting (p. 211). Various interventions to promote implementation of the practice change were discussed in this chapter. Implementation of a practice change requires diligence, persistence, and adaptability to the clinical site in transforming to an EBP environment and promoting excellence in patient care practices.
Chapter Eight: Final Conclusions

Evidence-based practice (EBP) decreases healthcare costs, fosters higher quality of care delivered, and promotes best patient outcomes (Melnyk & Fineout-Overholt, 2015). Utilizing an evidence-based approach allows healthcare providers to access the best evidence available and translate that evidence into clinical practice to improve patient care and outcomes (Melnyk & Fineout-Overholt, 2015, p. 7). The objective of the capstone project was implementation of an evidence-based individualized music therapy (IMT) program using a personalized playlist, on MP3 players, as a nonpharmacological method to decrease agitation behaviors in residents with dementia within a long-term care facility. The aim of this chapter is to provide a final summary and conclusion of the practice change beginning with the identification of the clinical problem, the evidence base, the theory and model to guide the practice change, project management and implementation, outcome findings, and final conclusions.

Clinical Problem

Dementia is a global health challenge and is one of the most prevalent diseases affecting older adults. Upwards of 90% of those diagnosed with dementia will at some point display behavioral symptoms with more prevalence in the advanced stages of the disease (Trivedi et al., 2013). Agitation is a significant issue in persons with dementia because it intensifies burden for the care provider, increases utilization of medical services, and decreases the overall quality of life (Park & Pringle Specht, 2009). Agitation in nursing home residents with dementia can lead patient distress, lower quality of life, caregiver burden, and use of antipsychotic medication. Individualized music therapy can have been found in the literature to be effective in the treatment of agitation in dementia patients, but studies have been methodologically lacking. To improve the specificity of music-based interventions, incorporation of an evidence-based,
individualized music therapy (IMT) program is an effective means for staff to implement and to monitor for the efficacy of IMT on agitation in dementia residents. The clinical problem encompasses agitation behaviors in older persons with dementia and the use of the nonpharmacological method such as individualized music therapy (IMT) in the treatment of agitation behaviors as an alternative to using pharmacological therapy. Persons with dementia will often develop behavioral symptoms of agitation that constitutes one of the most challenging and disconcerting aspects of the disease (Millan-Calenti et al., 2016). Concern over the use of pharmacological approaches in the treatment of behavioral symptoms of dementia has led to clinical and evidence-based guidelines in recommending non-pharmacologic interventions as initial choice therapies for agitation in dementia (Mitka, 2012; Salzman et al., 2008). At the clinical site, there has been a lack of staff knowledge and access to nonpharmacological approaches in the management of agitation behaviors in residents with dementia. Furthermore, there has been a state-wide initiative since 2015 by the Texas Department of Aging and Disability Services (DADS) Quality Monitoring Program (QMP) to reverse the trend in antipsychotic usage in residents who exhibit behavioral and psychological symptoms of dementia (BPSD) through the MUSIC & MEMORY℠ program (Texas Health and Human Services, 2018). IMT is an innovative approach for the nonpharmacological treatment of agitation behaviors in dementia. Music therapy can facilitate in decreasing the usage of antipsychotic medications, promote positive interactions with caregivers, enhance cognitive functioning, and manage agitation behaviors.

**Evidence Base**

Certain studies have suggested music therapy as an effective non-pharmacological treatment for BPSD in decreasing aggressive behavioral symptoms while improving mood and
quality of life in persons with dementia living in nursing homes (Chang, Huang, Lin, & Lin, 2010; Vink et al., 2013). Music therapy (MT) has been deemed a safe and effective approach in managing agitation and anxiety in persons with Alzheimer’s patients (Svansdottir & Snaedal, 2006). The literature suggests that nonpharmacological treatments such as MT may decrease BPSD in persons with moderate to severe dementia (Blackburn & Bradshaw, 2014, Gerdner, 2005, 2010, 2013; Douglas et al., 2004; Raglio et al., 2008, 2015; Ueda et al., 2013). Raglio et al. (2008) assert that MT, in persons with dementia, is a low-cost treatment approach that nursing home staff can incorporate into daily activities to decrease agitation behaviors, lessens caregiver stress and burden of care, and leads to improved quality of life for patients. Sung and Chang (2005) noted in a review of the literature that preferred music intervention on agitated behaviors in older persons with dementia showed positive results in decreasing the occurrence of certain types of agitation behaviors. IMT adds to the body of nursing knowledge by providing effective strategies to allow nursing to incorporate patient-centered care into daily care practices. Based on the review of the current literature (see Appendices A), study findings validate the efficacy of IMT as a simple, inexpensive, noninvasive alternative to medication therapy and the use of restraints.

**Theory and Model for Evidence-based Practice**

The theory guiding the practice change was Ida Jean Orlando's Deliberative Nursing Process Theory. Orlando's theory is patient-focused, explores patient and nurse interaction, considers nurse perceptions, examines thoughts and feelings with patients, and incorporates the nursing process to produce positive patient outcomes or improvement (Faust, 2002). The nursing process is ascertained by verbal and nonverbal patient behavior. For nursing care to be successful, patient behavior needs to be correctly assessed and validated by the nurse.
Furthermore, effective communication between the nurse and patient is required to meet patient needs. Positive nurse-patient relationship results when the nurse perceives patient behavior, the nurse’s thoughts and reactions with the patient are validated, and the nurse takes deliberative action (Potter, 2013, p. 238). Deliberative action results when the patients’ needs are met, and the action is evident. The use of this theory facilitates in guiding the EBP change project by allowing the nurse to take deliberative action in providing music intervention early on to mitigate agitation behaviors in residents with dementia at the practice change site. Orlando’s theory contributes to the professional knowledge of nursing, is applicable to the practice change setting, and centers on the continuous interaction between the nurse and patient. When the nurse focuses on the patient’s verbal and nonverbal behaviors and can identify when the patient is in distress, the nurse can engage in responsive action to resolve the situation. Orlando’s theory addresses the continuous, dynamic process between patient and the nurse.

The EBP model that supported the change project was the Rosswurm and Larrabee’s Model for Evidence-Based Practice (EBP) Change. This model was conceived from theoretical and research literature related to change theory, utilization of research, and EBP (St. Clair & Larrabee, 2002, p. 17). The basis for the model is a six-step systematic approach in attaining EBP. The first step in the model is to assess the need for change. In step two, problem, interventions, and outcomes should be linked with identification of potential interventions and selected outcome indicators. The third step is a synthesis of best evidence, both research and contextual, by systematically reviewing the literature to ensure the practice change is supported by the evidence (Rosswurm & Larrabee, 1999, p. 319). In step four of the model, a design for the EBP change project was proposed. Once the evidence is synthesized, the sequence of activities or protocol must be described in the practice change (p. 320). In step five of the model,
implementation and evaluation of the change in practice are considered with evaluation of the process change and determining whether to adapt, incorporate, or reject the practice change. The sixth step is to integrate and maintain the change in practice. The Rosswurm and Larrabee Model for EBP Change (see Figure 2 below) was valuable in systematically guiding the Project Manager from development and integration of change to evidence-based practice at the clinical site.

![Figure 2. A Model for Evidence-Based Practice Change](image)

Source: Rosswurm & Larabee. 1999

**Project Management**

To ensure successful implementation of the practice change, the Project Manager developed a plan prior to implementation. An effective plan includes a sequence of planned actions and processes to support the project (Harris, Roussel, Dearman, & Thomas, 2016). Planned steps included evaluation of the system, formation of a team of key stakeholders, appropriate approval, and assessment of the role of informational technology in the project. The clinical setting was a 120-bed skilled nursing facility in a large city in the southern U.S. Key stakeholders at the facility including the Administrator, Director of Nursing, Activity Director,
Physical Therapy Supervisor, and providers supported the practice change. A standard proposal was submitted to the Chatham University Institutional Review Board (IRB) and approved prior to project implementation. The standard IRB proposal was approved on October 10, 2017. The Project Manager assessed baseline organizational readiness for change prior to implementation. Interprofessional collaboration was essential for the practice change to be successful. The team members of this project include the Director of Nursing (DON), the Administrator, the Nurse Practitioner (NP), the Project Manager, the staff nurses, the Activity Director and Assistant Activity Director. Written organizational permission to allow the EBP project was approved by the Administrator.

The use of information technology was critical to the EBP project change. The accessing of electronic medical records (EMR) allowed for auditing of patient records for antipsychotic medication usage pre and post music intervention. The utilization of MP3 players and its technology allowed for downloading of a personalized playlist of favorite songs for each participant. The needed materials for implementation of the project were described. The plans for project evaluation, demographic data collection, data collection outcome and measurement, plans for evaluation and data analysis methods were outlined. In addition, plans for data management included keeping all data secure and confidential by the Project Manager. Effective project management requires a well-planned sequence of actions required by the Project Manager to successfully execute the change project (Harris et al., 2016).

Project Implementation

Project implementation commenced on January 3, 2018 with a timeline of planned sequence of events to facilitate implementation of the practice change. The practice change involved using an IMT intervention via MP3 players as a non-pharmacological approach for
treating agitation behaviors in residents with dementia within a long-term care facility. First, a PowerPoint presentation on IMT with a voluntary pre and post knowledge test provided to the staff. Secondly, over the course of eight weeks, the staff monitored for agitation behaviors in residents using the Pittsburgh Agitation Scale (PAS) instrument, pre and post IMT intervention. Lastly, resident chart audits were performed weekly to determine if there had been in changes in antipsychotic medication usage in the residents.

**Outcome Findings**

Outcome measurement is essential for measuring the success of implementation of evidence-based practice (EBP) initiatives (Melnyk & Fineout-Overholt, 2015). There are several reasons to measure outcomes such as evaluating the effectiveness of an intervention, identifying effective best practices, detecting areas for improvement, and achieving clarity on the purpose of the change project. The outcomes of the change project will be discussed next including staff demographics, staff knowledge assessment test, the PAS instrument, and chart audits.

**Patient demographics.** A total of 15 residents with dementia were in the cohort and monitored for PAS scores during the intervention period. All of the residents were of Hispanic ethnicity with the exception of two residents who were Caucasian. The age range was 66 years old to 98 years old, with a mean age of 86 and median age of 88. Most of the song lists elicited were of Hispanic ethnic music and some classic country artists from the 1950’s-1960’s. Additional residents were added the IMT intervention with other diagnosis including cognitive communication deficit, end stage renal disease, schizophrenia, and post cerebral vascular accident (CVA).

**Staff demographics.** A total of 40 staff participated in the educational sessions with 27 staff filling out the voluntary demographic forms. The self-developed demographic forms
comprised of nine questions that required the staff to circle the most appropriate response. Most of the staff participating in the sessions were female (81.48%) and the rest male gender (18.52%). See Figure 6.1. The age range was 19-63 years old with the mean age 37.7 years old. The ethnicity of the participants indicated 89% Hispanic, 7.4% Caucasian, and 3.7% African-American. Fifty-two percent of the participants were Nurse Aides. Thirty-percent were licensed vocational nurses (LVNs), 11% were registered nurses (RNs), and the remaining 7% of the staff did not disclose a title. On question eight of the demographic form, the staff was asked if they believed that personalized music therapy could play an important role in helping to decrease agitation in persons with dementia. Thirty-three percent of the staff responded they strongly agreed, 30% of staff indicated they agreed, 7% were neutral, and 30% indicated they strongly disagreed. On question 9 of the demographic form, the staff was queried if they had any prior training in music therapy to treat agitation behaviors in persons with dementia. Seventy-eight percent of the staff indicated they had not been exposed to IMT education while 22% indicated having been previously educated on IMT.

**Staff Knowledge Assessment Test.** A 10-item Individualized Music Intervention Knowledge (IMIK) Assessment Test was utilized to measure staff knowledge about IMT pre and post educational sessions. Descriptive statistics, using Microsoft Excel 2016, was used to compare pre and post-test assessment on the aggregate data. Of the 40 attendees in the education sessions, 27 voluntarily participated in the test. The baseline mean score was 5.7 on the pre-test with a SD of 2.7064. The range for the pretest was 0-9. The baseline mean score post-test was 9 with a SD of 1.4800. The range for the post-test was 4-10. The benchmark for the change in scores on the IMIK test was set at a 10% increase in group mean post-test scores compared to pre-test scores. For this project, there was a 33% increase in knowledge on the post-test scores.
which exceeded the predetermined benchmark of 10% set by the Project Manager. The educational intervention with the staff indicated there was an increase in knowledge on IMT during the education program. See Table 2 for the results of the pre and post IMTK assessment tests.

**PAS instrument.** To determine if the IMT intervention was effective in decreasing agitation behaviors in the residents with dementia, the PAS instrument was utilized pre and post music intervention. The PAS instrument rates the severity of agitation in four behavior groups including aberrant vocalization, motor agitation, aggressiveness, and resisting care on a five-point Likert-type scale ranging from 0-4 (Rosen et al., 1994). A total of 29 PAS instruments were completed during the intervention period by staff and trained family members. Seventeen of the completed PAS instruments indicated that there was an absence of agitation behaviors pre and post music intervention. This may have been attributed to the resident’s request for the music or staff using the MP3 players to alleviate boredom or provide alternative entertainment for the resident. Of the remaining 12 completed PAS instruments, it was noted that an intensity score of one in the areas of Aberrant Vocalization (n=3), Motor Agitation (n=7), and Resisting Care (n=2) was observed by the rater pre-music intervention. All the PAS intensity scores post music intervention indicated a score of zero which suggested the IMT intervention was effective in decreasing agitation behaviors.

**Chart audits.** Weekly patient chart audits from the electronic medical record revealed none of the participating residents were on antipsychotic medications during the intervention period. However, three of these residents were on either alprazolam, buspirone, or citalopram. The Project Manager performed weekly chart audits to determine if there were any changes in dosage and noted there was no changes in dosage noted for these medications in the chart audits.
Discussion Summary

A review of the literature validates the need for non-pharmacological approaches in the treatment and management of agitation behaviors in persons with dementia. Evidenced-based interventions such as individualized music therapy (IMT) has shown to be effective in decreasing agitation behavior in individuals with dementia (Cuddy, Sikka, & Vanstone, 2015; Gerdner, 1992; Gerdner, 1997; Gerdner, 2000; Gerdner, 2005; Gerdner, 2013; Gerdner & Swanson, 1993; Long, 2016; Ridder, Stige, Qvale, & Gold, 2013; Thomas et al., 2017; Wall & Duffy, 2009). Literature reveals IMT to be an effective nonpharmacological sensory intervention in promoting positive outcomes in dementia patients with agitation behaviors (Pedersen, Andersen, Lugo, Adreassen, & Sutterlin, 2017). Thomas et al. (2017) compared residents with behavioral and psychological symptoms of dementia (BPSD) before and after implementation of the MUSIC & MEMORY® (M&M) program in long-term care facilities with results showing the first evidence that M&M individualized music interventions were associated with decreases in antipsychotic medication use and BPSD. Furthermore, there is a national initiative to reduce the use of antipsychotic medications in long-term care facilities (Centers for Medicare and Medicaid [CMS], 2014). The change project entailed using IMT intervention as a nonpharmacological approach in the treatment of agitation behaviors in persons with dementia. Nonpharmacologic therapies can be used for preserving or improving cognitive function, foster the ability to perform activities of daily living, or promote overall quality of life (World Alzheimer Report, 2015). At the clinical site it was observed by Project Manager that staff ethnicity (89%) was comparable to the ethnicity of the participating residents (89%). After the educational sessions, the Project Manager was informed that several of the nurse aides preferred to speak and read in the Spanish language. Consequently, the PAS instrument was translated in Spanish and made
available to the staff to promote effective utilization of the instrument. When the Project Manager was eliciting a personalized playlist of songs from both family members and participating residents, many of the songs were related to Hispanic cultural music including cumbias, tejano, rancheros, and bolero music. The songs and singers associated with this genre of music made it difficult for the Project Manager to transcribe legibly on the Assessment of Personal Music Preference form. See Appendices N and O. Consequently, the Project Manager had the family provide the list of songs or singers through a hand-written list or display the list on their phone. For example, the family member located a favorite song and recording artist from the YouTube site and displayed it on their phone. The Project Manager then took a picture of the display with her phone to ensure the artist and song were correctly transcribed. In the original cohort, a total of 15 residents with dementia were included in the intervention. However, during the intervention period an additional six residents were added to the intervention either by patient or staff request indicating that there was a need for IMT for other residents beyond the confines those with a diagnosis of dementia. These additional residents included a hospice resident, an end stage renal disease resident, a resident with a stroke, a resident with cognitive communication deficit, and a resident with schizophrenia/dementia. With the implementation of the IMT, it was important for the Project Manager and Activity Director to follow-up on song selection and update the playlist when required. For example, a playlist of songs was generated for a selected resident by a family member. However, when certain songs were played it was determined that the resident did not enjoy the selected song. The selected song was deleted, and an alternate song was downloaded on the MP3 player. Furthermore, a resident requested that music from a favorite band be added to his expanding playlist for his enjoyment. This resident carried the MP3 player with him in his pocket and
would listen to the music during dialysis treatments or late into the night while in bed. The other residents in the original cohort had iPod players that were stored in the Activity Director’s office. It is the recommendation of the Project Manager to allow most, if not all the residents, to keep the iPods/MP3 players at the resident’s bedside to allow easy accessibility for the IMT intervention for both staff and residents alike. Furthermore, this change in strategy would help facilitate the organizational culture of providing IMT interventions so that the intervention is the responsibility of all staff, including nurse aides and licensed nurses, and not just the Activity Director. During the intervention period, two elderly Spanish-speaking female residents, age 97 and 98 respectively, had adult children who were actively involved in the IMT intervention on daily to weekly basis. The adult children voluntarily participated in filling out the PAS instrument during the intervention period. An unexpected outcome was the rich qualitative data drawn from the frequent comments of one of the female adult children who observed the direct benefits of the IMT on her mother who seemed more engaged, communicated more, and had improved cognition during the IMT interventions. Another unexpected outcome was the response of an elderly female resident with dementia, anxiety disorder, and depression. This resident is nonverbal and frequently keeps her head down with her hand on her forehead. She does not actively engage with others during recreational activities and prefers to be left alone. It was during the first week of intervention when the MT was provided with this resident and there was a lack of response to the music from the iPod. During the second week, this resident spontaneously requested to the Project Manager to bring her the “radio”. When the Project Manager asked if she was referring to the music from the headphones, the resident nodded her head yes. When the music was administered the resident lifted her head up, kept eye contact with others, smiled and tapped her foot to the rhythm of the music. It has been these encounters
and others that have validated to the Project Manager the beneficial effects of IMT for all levels of residents. IMT interventions are inexpensive, patient-centered, and easily administered by both staff and family alike.

**Final Conclusions**

Knowledge translation is the process of putting knowledge into action or practice (Strauss, Tetroe, & Graham, 2009). Translational research promotes inquiry into the internal and external validity of the EBP interventions and aid researchers in identifying those “strategies that promote the ready translation of research findings into timely, effective, and efficient practice innovations across diverse community and populations settings” (Grady, 2010, p. 163). Translational research could support IMT intervention in wide-ranging populations such as acute care, mental health, operating room, and critical care settings while expanding its scope of distribution through national clinical guidelines and policy changes. The literature supports the use of IMT in diverse populations such as depression (Maratos, Gold, Wang, & Crawford, 2008) and anxiety in ventilator-dependent patients (Wong, Lopez-Nahas, & Molassiotis, 2001).

Implications for the change project was cultural sensitivity to the music preferences of a primarily Hispanic patient population at the clinical site. Cultural competence can be gained through continuing education to enable healthcare providers to be sensitive to the culture, beliefs, myths, and preferences of the Hispanic/Latino population (Heisler, 2017). The Project Manager used various creative means to elicit a personalized playlist including searching on the Internet for music specific to the ethnic background and generation appropriate to the target resident. Furthermore, she utilized the family members, caregivers, and Activity Director in compiling a playlist individualized to the resident. As an added measure, she followed up with the resident to ensure the music was to their liking and made any adjustments when required. Health care
system organizations are continually challenged by improving the quality of care, decreasing risks to patient safety, and providing optimal care delivery. Providing IMT for patients is relatively inexpensive to administer, enriches the patient care experience, and can mitigate the utilization of antipsychotic medications to treat behavioral symptoms such as agitation.
References


https://doi.org/10.1038/nrneurol.2009.39


https://doi.org/10.1111/j.1365-2702.2009.02801.x


http://dx.doi.org/10.1017/S1041610200006190


https://doi.org/10.1002/14651858.CD002852


https://doi.org/10.1002/14651858.CD004517.pub2


https://doi.org/10.3389/fpsyg.2017.00742
Plassman, B. L., Langa, K. M., Fisher, G. G., Heeringa, S. G., Weir, D. R., Ofstedal, M. B., ...


http://dx.doi.org/10.1159/000109998


Thomas, K. S., Baier, R., Kosar, C., Ogarek, J., Trepman, A., Mor, V. (2017). Individualized music program is associated with improved outcomes for U.S. nursing home residents

https://doi.org/10.1017/S1041610215001866


http://dx.doi.org/10.1080/13607863.2014.924900


## Appendix A

**Evidence from Literature as the Basis for Practice Change**

<table>
<thead>
<tr>
<th>Article</th>
<th>Level of Evidence (A-M)</th>
<th>Data/Evidence Findings</th>
<th>Conclusion</th>
<th>Use of Evidence in EBP Project Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raglio et al. (2008) Randomized control trial to assess effects of music therapy on behavioral and psychological symptoms of dementia (BPSD)</td>
<td>Level B</td>
<td>Neuropsychiatric Inventory (NPI) total score significantly decreased in the experimental group. Specific BPSD significantly improved.</td>
<td>Music therapy (MT) is effective in decreasing BPSD in patients with moderate-severe dementia.</td>
<td>Supports EBP intervention of MT in the treatment of BPSD. MT is an effective treatment for BPSD in dementia patients. MT is a low-cost approach that nursing home staff can incorporate in daily activities to decrease agitated behaviors, alleviate caregiver stress and improved quality of life in patients.</td>
</tr>
<tr>
<td>Kong et al. (2009) Systematic review and meta-analyses of literature. Nonpharmacological intervention for agitation in dementia: A systematic review</td>
<td>Level C</td>
<td>Review of 14 studies. Sensory intervention was statistically significantly effective in reducing agitation among the seven types of nonpharmacological intervention</td>
<td>Sensory interventions included aromatherapy, thermal bath, calming music, and hand massage. In a meta-analysis of 14 studies (n=120) of sensory interventions, there were statistically significant differences in agitation between treatment groups and control groups.</td>
<td>Provides some support of EBP intervention of utilizing sensory interventions as a nonpharmacological means in reducing agitation in older adults with dementia. Systematic review suggests sensory interventions might be practical alternatives for agitation in older adults with dementia regarding low cost, safety, ease of use, and significant effect. MT is one such sensory alternative to be effective in managing agitation in older adults with dementia.</td>
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<tr>
<td>Wall &amp; Duffy (2009) Literature review to explore how music therapy (MT) influences behavior of older adults with dementia using</td>
<td>Level C</td>
<td>Review of 13 studies and majority of studies reported that MT affected the behavior of older people with dementia in a positive way by decreasing levels of agitation</td>
<td>Research further identified a positive increase in participant’s mood and socialization skills with caregivers having a significant role in the use of MT in older adults with dementia</td>
<td>Supports MT intervention in EBP change project to decrease agitation in older adults with dementia. Literature review suggests MT has a positive effect on decreasing agitation in older adults with dementia. Studies indicated a positive increase in patient mood and socialization skills with caregivers. Caregivers play an important role in utilization of MT</td>
</tr>
<tr>
<td>Ueda et al. (2013) Literature review and systematic meta-analysis to investigate the effects of MT on</td>
<td>Level A</td>
<td>Review of 20 studies including RCTs, controlled clinical trials, cohort studies, and controlled trials.</td>
<td>Systematic review and meta-analysis reveal MT is effective for the management of BPSD.</td>
<td>Support EBP intervention of MT in the management of BPSD. The systematic review and meta-analysis of RCTs, a CCT, and CTs indicated MT</td>
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<tr>
<td>Study</td>
<td>Level</td>
<td>Description</td>
<td>Evidence</td>
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<td>Ridder et al. (2013)</td>
<td>Level B</td>
<td>In a crossover trial, 42 dementia home residents randomized to a six wks of IMT and six wks of standard care. Outcome measures included agitation, QOL, and medication. Study indicated six wks of IMT reduces agitation and medication increases in residents with dementia. Supports EBP intervention of IMT in residents in long-term care facilities. Study protocol used a person-centered approach with intervention adjusted to the needs of the resident by the music therapist. Agitation disruptiveness significantly decreased with music therapy compared to standard care. Prescriptions for psychotropic medications were not increased during music therapy intervention while it was increased for seven participants in the standard care period.</td>
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<tr>
<td>Blackburn &amp; Bradshaw (2014)</td>
<td>Level C</td>
<td>All six studies were RCTs, four compared MT with usual care and two with an alternative treatment. The effect of the intervention on anxiety was statistically significant (p=0.004) whereas a reduction in agitation was not statistically significant (p=0.95). Literature review revealed despite methodological weaknesses in the studies; evidence reviewed suggests MT is a safe nonpharmacological alternative that may reduce agitation behaviors in older adults with dementia and facilitate therapeutic interactions between the patient and caregiver. Supports EBP intervention of IMT in residents in long-term care facilities as a safe and low-cost intervention that could be offered by nurses and other healthcare workers in long-term care setting.</td>
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<td>Gerdner (2005)</td>
<td>Level D</td>
<td>Cohen-Mansfield Agitation Inventory used to measure agitation. Mid-range theory of the effects of individualized music intervention provided a framework for the study. A statistically significant decrease in agitation on day shift during weeks 1-8 (p=.027) and on evening shift during weeks 5-8 (p= 0.27) during MT intervention and an overall reduction in agitation. Strong support for EBP intervention on individualized MT in residents in long-term care facilities. Major factors contributing to the effectiveness of the intervention was the families’ input in providing detailed information that facilitated the selection of music that was</td>
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<td></td>
<td>of 8 residents in a long-term care facility</td>
<td>meaningful to resident and promoted positive memories.</td>
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</tbody>
</table>
Appendix B

Demographic Data Form

1. Circle your gender below.
   a. Female
   b. Male

2. What is your age? Enter your age _______

3. How would you describe your ethnicity?
   a. Caucasian
   b. Hispanic
   c. African-American
   d. Asian
   e. American Indian
   f. Other

4. What is your highest level of education achieved?
   a. Middle School
   b. High School, not graduate
   c. High School Graduate
   d. College, no degree
   e. College Graduate

5. What best describes your title?
   a. Nursing Assistant
   b. Certified Nursing Assistant
   c. LVN
   d. Diploma RN
   e. Associate RN
   f. BSN
   g. MSN
   h. Other (specify):

6. How many years have you been in your present position?
   a. Less than 5 years
   b. 5-10 years
   c. 10-15 years
   d. 15-20 years
   e. > than 20 years

7. How many years’ total have you worked in nursing?
   a. Less than 5 years
   b. 6-10 years
   c. 11-15 years
d.  16-20 years
  e.  > than 20 years

8. I believe that personalized music therapy can play an important role in helping decreasing agitation behaviors in persons with dementia.
   a. Strongly disagree
   b. Disagree
   c. Neutral
   d. Agree
   e. Strongly Agree

9. Have you had any classes about music therapy to treat agitation behaviors in persons with dementia?
   a. Yes
   b. No
Appendix C

INDIVIDUALIZED MUSIC INTERVENTION
KNOWLEDGE ASSESSMENT
(PRE-TEST & POST-TEST)

1. Individualized music is defined as music that is:
   
   A. A preferred general category of music (e.g., classical, country/western)
   B. Designed for relaxation
   C. Based on personal preference which includes identification of specific performers and song titles
   D. Associated with the era in which the patient was a young adult

2. Which of the following supports the theoretical framework for the effects of Individualized Music intervention for agitation (IMIA)?
   
   A. It is believed that receptive and expressive musical abilities are preserved in individuals with ADRD long after their ability to process or express verbal language
   B. Elicitation of memories associated with positive feelings has a soothing effect on the person with ADRD, which in turn prevents or alleviates agitation
   C. Music changes the focus of attention and provides an interpretable stimulus, overriding meaningless or confusing stimuli in the environment
   D. All of the above

3. Overall assessment to determine the appropriateness of using individualized music as an alternative intervention includes all of the following EXCEPT:
   
   A. Hear a normal speaking voice at an approximate distance of 1 1/2 feet
   B. The person’s ability to play a musical instrument or sing
   C. Assess temporal patterning in an effort to determine the most appropriate time for prescribed intervention
   D. Determine the importance of music in the person’s life prior to the onset of dementia

4. Individualized music is NOT appropriate as an alternative intervention for the management of agitation in cognitively impaired persons with
   
   A. Increased difficulty in interpreting environmental stimuli
   B. Fatigue
   C. Pain
   D. A deprivation or lack of environmental stimuli

5. Assessment of individualized music includes all of the following EXCEPT:
   
   A. The ability to understand verbal language
   B. Consideration to ethnic and religious background
C. Prior music interests (i.e., sang in church choir, played a musical instrument)
D. Determination of specific music preferences (i.e., song titles, performers)

6. Individualized music may be used on an “as needed” (PRN) basis by:

A. Waiting to intervene until the peak level of agitation
B. Implementing when the person first begins exhibiting signs of increased anxiety
C. Implementing every 3-4 hours
D. Playing for 2-3 hours at a time

7. The following clinical outcomes factors are expected with the consistent and appropriate use of Individualized Music guideline:

A. Decreased agitation
B. Decreased use of psychotropic drugs
C. Decreased use of physical restraints
D. All of the above

8. When music is being played the patient, for whom the music was intended, should be monitored as well as other patients in the immediate area.

A. True
B. False

9. If the patient exhibits an increase in agitation:

A. Continue to play the music, since it takes longer for someone with dementia to process music
B. Stop the music with no further attempts to implement music
C. Stop the music, reassess music preference, and try again using a different musical selection at a later date
D. Increase the volume since the patient might be hard-of-hearing

10. Family members (select the correct statement):

A. Should not be burdened with assisting in the planning and implementation of activities for the patient
B. Have valuable information regarding the personal likes and dislikes of the patient
C. Do not have the knowledge or skill necessary to make a meaningful contribution when care is transferred to a long-term care facility
D. Mainly serve to increase staff’s work-load by being critical and demanding
Appendix D

INDIVIDUALIZED MUSIC INTERVENTION
KNOWLEDGE ASSESSMENT ANSWER KEY

1. C
2. D
3. B
4. C
5. A
6. B
7. D
8. A
9. C
10. B
Appendix E

**Pittsburgh Agitation Scale (PAS)**

<table>
<thead>
<tr>
<th>Patient’s Name:</th>
<th>Rater’s Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient #:</td>
<td>Date:</td>
</tr>
<tr>
<td>Hours of sleep this rating period</td>
<td></td>
</tr>
</tbody>
</table>

Circle only the highest intensity score for each behavior group that you observed during this rating period. Use the anchor points as a guide to choose a suitable level of severity. (Not all anchor points need be present. Choose the more severe level when in doubt.)

### Behavior Groups

<table>
<thead>
<tr>
<th>Behavior Groups</th>
<th>Intensity During Rating Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aberrant Vocalization</td>
<td>0. Not present</td>
</tr>
<tr>
<td>(repetitive requests or complaints, nonverbal vocalizations, e.g., moaning, screaming)</td>
<td>1. Low volume, not disruptive in milieu, including crying</td>
</tr>
<tr>
<td></td>
<td>2. Louder than conversational, mildly disruptive, redirectable</td>
</tr>
<tr>
<td></td>
<td>3. Loud, disruptive, difficult to redirect</td>
</tr>
<tr>
<td></td>
<td>4. Extremely loud screaming or yelling, highly disruptive, unable to redirect</td>
</tr>
<tr>
<td>2. Motor Agitation</td>
<td>0. Not present</td>
</tr>
<tr>
<td>(pacing, wandering, moving in chair, picking at objects, disrobing, banging on chair, taking others’ possessions. Rate “intrusiveness” by normal social standards, not by effect on other patients in milieu. if “intrusive” or disruptive” due to noise, rate under “Vocalization.”)</td>
<td>1. Pacing or moving about in chair at normal rate (appears to be seeking comfort, looking for spouse, purposeless movements)</td>
</tr>
<tr>
<td></td>
<td>2. Increased rate of movements, mildly intrusive, easily redirectable</td>
</tr>
<tr>
<td></td>
<td>3. Rapid movements, moderately intrusive or disruptive, difficult to redirect</td>
</tr>
<tr>
<td></td>
<td>4. Intense movements extremely intrusive or disruptive, not redirectable verbally</td>
</tr>
<tr>
<td>3. Aggressiveness</td>
<td>0. Not present</td>
</tr>
<tr>
<td>(score “0” if aggressive only when resisting care)</td>
<td>1. Verbal threats</td>
</tr>
<tr>
<td></td>
<td>2. Threatening gestures; no attempt to strike</td>
</tr>
<tr>
<td></td>
<td>3. Physical toward property</td>
</tr>
<tr>
<td></td>
<td>4. Physical toward self or others</td>
</tr>
<tr>
<td>4. Resisting Care</td>
<td>0. Not present</td>
</tr>
<tr>
<td>(circle associated activity)</td>
<td>1. Procrastination or avoidance</td>
</tr>
<tr>
<td>Washing</td>
<td>2. Verbal/gesture of refusal</td>
</tr>
<tr>
<td>Dressing</td>
<td>3. Pushing away to avoid task</td>
</tr>
<tr>
<td>Eating</td>
<td>4. Striking out at caregiver</td>
</tr>
<tr>
<td>Meds</td>
<td>Other ________________________</td>
</tr>
</tbody>
</table>

Were any of the following use during this rating period because of behavior problems? (Circle interventions used.)

- Seclusion
- PRN Meds (specify)
- Restraint
- Other interventions ________________________

Escala de agitación de Pittsburgh (PAS)

Nombre del Paciente: _____________________________ Nombre del Evaluador: _____________________________

Paciente #: _______ Fecha: _______ Tiempo: _______ AM/PM a _______ AM/PM

Horas de sueño durante este período de calificación: ________________

Círcule sólo la intensidad más alta de cada grupo de comportamiento que observó durante este período de calificación. Utilice los puntos de anclaje como una guía para elegir un nivel adecuado de severidad. (No todos los puntos de anclaje deben estar presentes. Eliga el nivel más grave en caso de duda.)

<table>
<thead>
<tr>
<th>Grupos de comportamiento</th>
<th>Intensidad durante el período de calificación</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vocalización aberrante</td>
<td>0. No presente</td>
</tr>
<tr>
<td>(peticiones repetidas o quejas, no vocalizaciones, por ejemplo, gimiendo, gritando)</td>
<td>1. Bajo volumen, no perturba el medio, incluyendo llanto</td>
</tr>
<tr>
<td></td>
<td>2. Más recio que conversación, levemente disruptivos, redirigibles</td>
</tr>
<tr>
<td></td>
<td>3. fuerte, disruptivo y difícil de desviar si es necesario</td>
</tr>
<tr>
<td></td>
<td>4. muy alto o gritando, altamente perjudicial, para redirigir</td>
</tr>
<tr>
<td>2. Agitación del motor</td>
<td>0. No presente</td>
</tr>
<tr>
<td>(caminar de un lado a otro, vagar, moverse en silla, recogiendo en objetos, desnudarse, golpeando (parece la silla, tomando posesiones de otros. Tasa de &quot;intrusión&quot; por estándares sociales normales, no por efecto pacientes en medio. Si &quot;intrusa&quot; o perjudicial debido al ruido, clasificar en &quot;Vocalización.&quot;)</td>
<td>1. Caminar de un lado a otro o moverse en la silla a ritmo normal buscar comodidad, buscando su pareja, movimientos sin propósito</td>
</tr>
<tr>
<td></td>
<td>2. Mayor velocidad de movimientos, ligeramente intrusivos, fácilmente desviar</td>
</tr>
<tr>
<td></td>
<td>3. Movimientos rápidos, moderadamente intrusivos o perturbadores, difíciles para redirigir</td>
</tr>
<tr>
<td></td>
<td>4. intensos movimientos extremadamente intrusivo o disruptiva, sin poder desviar verbalmente</td>
</tr>
<tr>
<td>3. Agresividad</td>
<td>0. No presente</td>
</tr>
<tr>
<td>(marcar &quot;0&quot; si agresivo sólo cuando resiste cuidado)</td>
<td>1. Amenazas verbales</td>
</tr>
<tr>
<td></td>
<td>2. Gestos de amenaza; sin intento de golpear</td>
</tr>
<tr>
<td></td>
<td>3. física hacia la propiedad</td>
</tr>
<tr>
<td></td>
<td>4. física hacia sí mismo o a otros</td>
</tr>
<tr>
<td>4. Resistencia cuidado</td>
<td>0. No presente</td>
</tr>
<tr>
<td>(actividad de círculo)</td>
<td>1. la dilación o evitación</td>
</tr>
<tr>
<td>Lavarse</td>
<td>2. Verbal/gesto de rechazo</td>
</tr>
<tr>
<td>Vestirse</td>
<td>3. Empujar lejos para evitar la tarea</td>
</tr>
<tr>
<td>Comiendo</td>
<td>4. Llama la atención al cuidador</td>
</tr>
<tr>
<td>Medicinas</td>
<td>Otros: _____________________________</td>
</tr>
</tbody>
</table>

¿Fueron alguno de los siguientes usos durante este período de calificación debido a problemas de comportamiento?

(Círculo las intervenciones utilizadas.)

Aislamiento
Meds de PRN (especificar)
Refrenarlos
Otras intervenciones: _____________________________

Appendix G

Individualized Music Therapy Educational Program for Staff PowerPoint Outline

I. Dementia and Challenging Behaviors
   a. Dementia Prevalence
   b. Dementia Types
   c. Behavior and Psychological Symptoms in Dementia (BPSD)
      i. Challenging behaviors
      ii. Common causes of problem behaviors
      iii. Agitation behaviors
   d. Pharmacological approaches
   e. Non-pharmacological approaches

II. Introduction to Individualized Music Therapy (IMT)
    a. Definition
    b. Theoretical framework
    c. Evidence-based music interventions
    d. Review of the literature
    e. MP3 player vs. iPods

III. Inclusion criteria of patients
     a. Assessment
     b. Diagnosis of dementia
     c. Agitation behaviors
     d. Enjoys listening to music
     e. Able to hear music with headphones

IV. The Role of Music in Dementia
    a. Remembering Songs
    b. “Alive Inside” video documentary clip
    c. Music & Memory program
    d. Determining Appropriateness of IMT
    e. Expected outcomes

V. Eliciting a song history/Finding the right music
   a. Asking the Patient
      i. Assessment of Personal Music Preference (Patient Version)
   b. Asking Family
      i. Assessment of Personal Music Preference (Family Version)
   c. Query the Internet

VI. Creating a personalized playlist
    a. Best practices for creating a customized playlist
    b. Downloading Music
    c. Internet resources
d. Family input

e. Compact Discs

VII. **IMT Guidelines**

a. IMT as a therapeutic tool

b. Setting, volume, headphones

c. Infection control & device storage

VIII. **Pittsburgh Agitation Scale (PAS) instrument**

a. Agitation defined

b. Overview of PAS

c. Completing and Scoring the PAS

d. Practice

IX. **Conclusion**

a. Promotion of Patient-Centered Care

b. Benefits of personalized music

c. Integration of IMT into daily care

d. Goals of IMT evidence-based change project

e. Q & A
Appendix H

Permission to use
Assessment of Personal Music Preference (Patient & Family Version)
and
Individualized Music Intervention Knowledge Assessment Test

Linda Gerdner <lgerdner@gmail.com>
Tue 4/11, 1:50 PM
Unzelman, Sui 🔴

Inbox
  🗳️ Action Items

You have my permission. Please provide appropriate credit. Thank you and let me know if you have any additional questions.
Linda Gerdner

Unzelman, Sui
Sun 4/9, 12:52 PM

Hello Dr. Gerdner,

My name is Sui Unzelman and I am currently enrolled in the DNP program at Chatham University. Your EB guideline on individualized music has been a wonderful benchmark for my proposed project. Thank you for sharing it with others. As part of my capstone project in Jan 2018, I am planning an individualized music therapy program using MP3 players in older patients with dementia exhibiting agitation behaviors in a long-term care facility in San Antonio, TX. The target population is primarily Hispanic. I was inquiring if I could have your permission in using the Assessment of Personal Music Preference (Patient & Family Version) and adapting it to the needs of the intervention project. On the different types of music examples, instead of Czech polkas and Ravi Shankar, I would like to substitute Mexican music like boleros, mariachi, conjunto and rancheras, etc. Also, I would like to obtain permission to use the Individualized Music Intervention Knowledge Assessment Test to assess staff knowledge on individualized music pre and post test. I was inquiring if there was a benchmark set for the post test or if it was up to the individual administering the tests. I am planning to use the Pittsburgh Agitation Scale in measuring agitation behaviors pre and post music therapy. I have not been successful yet in locating Dr. Jules Rosen’s contact information to obtain permission in using the scale but will keep looking. Thank you for your consideration.

Respectfully,
Sui Unzelman MSN, RN
Appendix I

Permission to use Pittsburg Agitation Scale (PAS)

FW: [EXTERNAL] Pittsburgh Agitation Scaleq

Unzelman, Sui <Sui.Unzelman@va.gov>

to me  

From: Jules Rosen [mailto:drjulesrosen@gmail.com]
Sent: Monday, April 17, 2017 10:56 PM
To: Unzelman, Sui
Subject: [EXTERNAL] Pittsburgh Agitation Scaleq

Please feel free to use.
Dear Potential Participant or Family Member,

Greetings! My name is Sui Unzelman and I am a master’s prepared nurse educator currently pursuing a Doctor of Nursing practice degree at Chatham University in Pittsburgh, Pennsylvania. For my doctoral project, I have chosen to implement an individualized music therapy program based on patients’ specific music preferences to decrease agitation behaviors in patients with dementia. Participation in this project is completely voluntary and will include staff at Legends Oaks, San Antonio. Participation will include completion of the Assessment of Personal Music Preference (Patient or Family Version), completion of an agitation assessment by the nursing staff during observed periods of agitation experienced by you or your family member, provision of individualized music therapy using a MP3 player by the staff to you or a family member with signs of agitation behaviors, and completion of an agitation assessment after the music therapy intervention by the staff. Agitation may occur when you or a family member gets very upset or frustrated and have trouble controlling yours or your family member feelings.

This program poses no risk to the patient and is dependent on you or your family member’s appreciation for music. I am requesting that you or your family member allow consent to participate in this project. The project will begin in January 2018 and will take place for 8 weeks. Participation is voluntary and if the music therapy makes you or your family member more agitated it will be stopped immediately. You or your family member will be consulted to reassess the patient’s personal music preference to determine the reason for the response. An alternative music selection will be determined with the assistance of you or your family member and will be played another day. If you have any questions or concerns, the best way to reach me is by email at Sui.Unzelman@Chatham.edu or call 210-548-XXXX. Thank you for your time and consideration.

____________________________
Sui Unzelman, Project Coordinator
Sui.Unzelman@Chatham.edu

Kathleen Spadaro, Faculty Advisor
Kspadaro@Chatham.edu
Appendix K

Consent Form for Patients/Family

PROJECT IMPLEMENTOR’S NAME: Sui Unzelman

PROJECT TITLE: Implementation of an evidence-based individualized music therapy program in older adults with dementia experiencing agitation behaviors

PURPOSE OF PROJECT:
The purpose of this evidence-based practice (EBP) change project is to offer an individualized music therapy program in patients with dementia experiencing agitation behaviors.

DESCRIPTION OF PROJECT:
Patients with dementia may experience episodes of agitation behaviors that may benefit from individualized music during these episodes. In an effort to decrease agitation behaviors, an individualized music therapy (IMT) program for you (or your family member) will be administered by the staff. The IMT program incorporates a personalized playlist and involves having the staff placing headphones comfortably on you (or your family member) and turning on a MP3 player to an appropriate volume during the intervention. IMT may be considered a non-drug approach in managing agitation behaviors and can be used to decrease agitation behaviors, stimulate positive memories associated with the music, and promote individualized care based on specific patient preferences. The staff at Legend Oaks will be monitoring for signs of agitation before and after the IMT intervention using the Pittsburgh Agitation Scale over the course of 8 weeks. Signs of agitation behaviors may include resistance to care, hitting, yelling, restlessness, pacing, or threatening gestures. The Activity Director, staff, or a volunteer may ask you or your family specific music preferences using the Assessment of Personal Music Preference form which can take approximately 10 minutes to fill out. The Project Manager, during the project may review from the electronic patient medical records, medication administration, labs, and progress notes to assess any documented levels of agitation and medication prescribed for this reason. Your (or your family member) identity will remain confidential during and after the project. No names or personal identifiers will be used. A number code will be assigned to you (or your family member) to maintain confidentiality. Each agitated episode will take approximately 40 minutes of your (or your family member’s) time. You (or your family member) may be asked to participate two times a week depending on you (or your family member) level of agitation for 8 weeks. The total commitment time may be as much as 20 hours total.

RISKS AND DISCOMFORTS:
Participating in this project potentially places you (or your family member) at a minimal level of discomfort due to the added time spent during the completion of assessment of personal music preference form and administering the music therapy using a MP3 player. To minimize this discomfort, you (or your family member) may withdraw from the project at any time without providing any reason. You (or your family member) may find the headphones or volume uncomfortable. The staff will attempt to make it more comfortable including not providing you (or your family member) the IMT at that time. If the music selection does not help you or makes
you (or your family member) more upset, the staff will remove the headphones and stop the IMT at that time.

**BENEFITS:**
You (or your family member) may find the individualized music therapy as calming and helpful. You (or your family member) may need less medication to calm you (or your family member) down. You (or your family member) may find this method of treatment helpful to you (or your family member).

**ALTERNATIVE PROCEDURES:**
The alternative would be to continue treatment as usual for you (or your family member) with dementia behaviors that become agitated.

**CONFIDENTIALITY:**
Your (or your family member’s) identity will remain confidential during and after this project. You (or your family member) will only be identified by a number code and no other personal identifiers. The data collected will not become part of your medical record. The results of this project may be published or presented at a professional conference. All of the collected information will be analyzed and reported as aggregate data, meaning your (or your family member’s) results will be combined with the results of other patients and cannot be linked back to any particular patient.

**TERMINATION OF PARTICIPATION:**
You (or your family member’s) participation in this project is completely voluntary. You (or your family member) may withdraw from the project at any time for any reason. The decision to withdraw will not result in any negative consequences to you (or your family member) or the care received at this facility. Upon the request to withdraw, all information pertaining to you (or your family member) will be destroyed.

**COMPENSATION:**
No compensation will be provided to you (or your family member). In addition, no costs are associated with participating in this project. The MP3 player and headphones will be given to you (or your family member) to keep.

**INJURY COMPENSATION:**
Neither Chatham University nor any government or other agency funding this project will provide special services, free care, or compensation for any injuries resulting from this project. I understand that treatment for such injuries will be at my expense and/or paid through my medical plan.

**QUESTIONS:**
All my questions have been answered to my satisfaction and if I have further questions about this project, I may contact Sui Unzelman@Chatham.edu or call 210-548-XXXX. If I have any questions about the rights of participants, I may call the Chairperson of the Chatham University Institutional Review Board at 412-365-2726.
VOLUNTARY PARTICIPATION

I understand that my participation or my family member’s participation in this project is entirely voluntary, and that refusal to participate will involve no penalty of loss of benefits to me or my family member. I am free to withdraw or refuse consent or discontinue my participation in this project at any time without penalty or consequence. I voluntarily give my consent to participate in this project. I understand that I will be given a copy of this consent form.

I understand that as part of this project, the Project Manager will need access to my records to obtain information related to this project only. I give my permission for this.

As the family member, I voluntarily give my consent for my family member to participate in this project. I understand that as part of this project, the Project Manager will need access to my family member’s records to obtain information related to this project only. I give my permission for this.

I understand that I will be given a copy of this consent form.

Signatures:

________________________________________
Participant’s or Family Member Name (Print)

______________________________
Participant’s or Family Member Name (Signature) Date

______________________________
Consenter Name(Print)

______________________________
Consenter Signature Date

I, the undersigned, certify that to the best of my knowledge, the subject signing this consent form has had the project fully and carefully explained to me and have been given an opportunity to ask any questions regarding the nature, risks, and benefits of participation in this project.

Sui Unzelman
Project Implementer’s Name (Print)

______________________________
Project Implementer’s Signature Date

Kathleen Spadaro PhD, RN
Faculty Advisor’s Name(Print)

______________________________
Faculty Advisor’s Signature Date

The Chatham University IRB has approved the solicitation of participants for this project until October 10, 2018
Dear Legend Oaks Staff:

My name is Sui Unzelman, and I am currently in the doctoral program at Chatham University. You may know me as the Nurse Educator for the South Texas Veterans Health Care System. As part of my doctoral education studies at Chatham University in Pittsburgh, PA, I have chosen to implement an evidence-based practice change project related to individualized music therapy. This project involves implementing an individualized music therapy program as a nonpharmacological approach in the management of agitation behaviors in residents with dementia.

As part of the project implementation, all nursing staff members are required by administration to attend an educational session on individualized music therapy guidelines. This training will begin the first two weeks of January 2018 and will be delivered in a face-to-face classroom. Time during work will be granted to complete this required education. Before completing the educational session I am asking that you complete a pre-test and, after the learning session, a post-test. Completion of these tests are entirely voluntary and will have no bearing on your employment or yearly performance evaluations. Completion of these tests will assist me in measuring the learning outcome of the educational session.

A second part of the program implementation is administering individualized music therapy using MP3 players in residents with dementia experiencing signs of agitation. Signs of agitation behaviors may include resistance to care, hitting, yelling, restlessness, pacing, or threatening gestures. I am asking staff to fill out the Pittsburgh Agitation Scale before and after the music therapy intervention to monitor the effectiveness of music therapy in decreasing agitation behaviors. This project is not related to your employment status and will have no effects on annual performance evaluations. Furthermore, you may withdraw your participation related to the assessments (pre-test and post-test) at any time. I would sincerely appreciate your participation in this project. If you have any questions, please feel free to contact me through email at Sui.Unzelman@Chatham.edu, or through my mobile phone at 210-548-XXXX.

______________________________  ______________________________
Sui Unzelman, Project Implementer  Kathleen Spadaro, Faculty Advisor

Sui.Unzelman@chatham.edu  Kspadaro@chatham.edu
Appendix M

Consent Form for Staff

PROJECT IMPLEMENTOR’S NAME: Sui Unzelman

PROJECT TITLE: Implementation of an evidence-based individualized music therapy program in older adults with dementia experiencing agitation behaviors

PURPOSE OF PROJECT:
The purpose of this evidence-based practice (EBP) change project is to implement an individualized music therapy program in patients with dementia experiencing agitation behaviors.

DESCRIPTION OF PROJECT:
If you decide to participate, you will be asked to complete a demographics form, pre-test and post-test during the education session on individualized music therapy guidelines. The test is anticipated to take 5-10 minutes and will be included in the one-hour educational program on individualized music therapy.

Once patients with dementia and agitation have been selected by Legend Oaks leadership, you may be asked to obtain consent from the patient or family member of the patient to participate in the project. Up to ten patients will be selected to participate in the project. Initially, you may be asked to fill out the Assessment of Personal Music Preference form (patient or family version) to determine the patients’ personal music preferences. The music preferences form will be submitted to the Activity Director in order to generate an individualized music playlist for the patient using the MP3 players. A MP3 player and headphones will be provided for each of the patient participating in the project.

For the next 8 weeks, you will be asked to assess for signs of agitation at least twice a week using the Pittsburgh Agitation Scale (PAS) in the patient with dementia before the initiation of the music therapy and immediately after the music therapy. Signs of agitation behaviors may include resistance to care, hitting, yelling, restlessness, pacing, or threatening gestures. Each completed PAS will be turned in to the Activity Director. The PAS takes about 5 minutes to fill out each time. Episodes of agitation may also be documented in the patient chart as well.

During the music therapy intervention with the MP3 players you will be responsible for placing the headphones on the patient, adjusting the volume to an appropriate level, turning on the player, and monitoring for patient response to music. If agitation increases during the music intervention, the MP3 player will be turned off immediately and will be attempted the following day. The MP3 player and headphones will be kept at the patient’s bedside or secured in the Activity Director’s office. The estimated total time per staff member to participate in the project is 10-20 hours over the course of 8 weeks.

RISKS AND DISCOMFORTS:
Participating in this project potentially places you at a minimal level of discomfort due to the added time spent during the completion of the knowledge assessment tests, attending the educational session, completion of the Pittsburgh Agitation Scale, and administering the music therapy using a MP3 player. To minimize this discomfort, you may
withdraw from the project at any time without providing any reason. However, if the IMT is effective in decreasing resident agitation, you may find that you spend less time with the agitated resident over time. You may also refuse to answer any questions that you are not comfortable answering.

BENEFITS:
You may find the opportunity to enhance your understanding individualized music therapy as beneficial. You find that this intervention enhances your patient care and patient outcomes.

ALTERNATIVE PROCEDURES:
The alternative would be to continue treatment as usual for patients with dementia that are agitated.

CONFIDENTIALITY:
Your identity will remain confidential during and after this project. You will only be identified by a number code and no other personal identifiers. The results of this project may be published or presented at a professional conference. All of the collected information will be analyzed and reported as aggregate data, meaning your results will be combined with the results of other participants and cannot be linked back to you.

TERMINATION OF PARTICIPATION:
Your participation in this project is completely voluntary. You may withdraw from the project at any time for any reason. Your decision to withdraw will not result in any negative consequences to you or your employment. Upon your request to withdraw, all information pertaining to you will be destroyed.

COMPENSATION:
No compensation will be provided for your participation. In addition, no costs are associated with participating in this project.

INJURY COMPENSATION:
Neither Chatham University nor any government or other agency funding this project will provide special services, free care, or compensation for any injuries resulting from this project. I understand that treatment for such injuries will be at my expense and/or paid through my medical plan.

QUESTIONS:
All my questions have been answered to my satisfaction and if I have further questions about this project, I may contact Sui Unzelman. If I have any questions about the rights of participants, I may call the Chairperson of the Chatham University Institutional Review Board at 412-365-2726.

VOLUNTARY PARTICIPATION
I understand that my participation in this project is entirely voluntary, and that refusal to participate will involve no penalty of loss of benefits to me. I am free to withdraw or refuse
consent or discontinue my participation in this project at any time without penalty or consequence.

I voluntarily give my consent to participate in this project. I understand that I will be given a copy of this consent form.

Signatures:

______________________________
Participant’s Name (Print)

______________________________
Participant’s Signature

Date

I, the undersigned, certify that to the best of my knowledge, the subject signing this consent form has had the project fully and carefully explained to me and have been given an opportunity to ask any questions regarding the nature, risks, and benefits of participation in this project.

Sui Unzelman
Project Implementer’s Name (Print)

______________________________
Project Implementer’s Signature

Date

Kathleen Spadaro PhD, RN
Faculty Advisor’s Name(Print)

______________________________
Faculty Advisor’s Signature

Date

The Chatham University IRB has approved the solicitation of participants for this project until October 10, 2018
Appendix N
Assessment of Personal Music Preference (Patient Version)
(Linda A. Gerdner, Jane Hartsock, & Kathleen C. Buckwalter, 2000.)
Reprinted with permission.

Music is often a very important part of people’s lives. Please complete the following based on your personal music preference.

Before illness, how important a role did music play in your life?

_____ 1. Very Important
_____ 2. Moderately Important
_____ 3. Slightly Important
_____ 4. Not Important

Do/did you play a music instrument? If yes, please specify (examples: piano, guitar).

Do/did you enjoy singing? If yes, please specify (examples: around-the-house, church choir)

Do/did you enjoy dancing? If yes, please specify (examples: attended dance lessons, participate in dance contests)

The following is a list of different types of music. Please indicate your three (3) most favorite types with 1 being the most favorite, 2 the next, and 3 the third favorite.

_____ 1. Country and Western
_____ 2. Classical
_____ 3. Spiritual/Religious
_____ 4. Big Band/ Swing
_____ 5. Folk
_____ 6. Blues
_____ 7. Jazz
_____ 8. Rock and Roll
_____ 9. Easy Listening
_____ 10. Cultural or Ethnic Specific (examples: Mexican-boleros, mariachi, conjunto, rancheras)
_____ 11. Other:

Please put a check (✓) beside the most correct choice to the following questions.

What form does your favorite music take?

_____ 1. Vocal
_____ 2. Instrumental
_____ 3. Both

Please identify specific songs/selections which make you feel happy.

Please identify specific artist(s)/performer(s) that you enjoy listening to the most.

Please identify specific albums, audio cassette tapes, or compact discs contained in your personal music library.
Appendix O

**Assessment of Personal Music Preference (Family Version)**

(Linda A. Gerdner, Jane Hartsock, & Kathleen C. Buckwalter, 2000.)

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Music is often a very important part of people’s lives. Please complete questionnaire based on your knowledge of your family member’s music preference.

Before illness, how important a role did music play in his/her life?

____ 1. Very Important
____ 2. Moderately Important
____ 3. Slightly Important
____ 4. Not Important

Do/did he/she play a music instrument? If yes, please specify (examples: piano, guitar).

Do/did he/she enjoy singing? If yes, please specify (examples: around-the-house, church choir)

Do/did he/she enjoy dancing? If yes, please specify (examples: attended dance lessons, participate in dance contests)

The following is a list of different types of music. Please indicate the individual’s (3) most favorite types with 1 being the most favorite, 2 the next, and 3 the third favorite.

____ 1. Country and Western
____ 2. Classical
____ 3. Spiritual/Religious
____ 4. Big Band/ Swing
____ 5. Folk
____ 6. Blues
____ 7. Jazz
____ 8. Rock and Roll
____ 9. Easy Listening
____ 10. Cultural or Ethnic Specific (examples: Mexican-boleros, mariachi, conjunto, rancheras)
____ 11. Other:

Please put a check (✔️) beside the most correct choice to the following question.

What form does the individual’s favorite music take?

____ 1. Vocal  ____ 2. Instrumental  ____ 3. Both

Please identify specific songs/selections that make your family feel happy.

Please identify specific artist(s)/performer(s) that the individual enjoyed/enjoys listening to the most.

Please identify specific albums, audio cassette tapes, or compact discs contained in your family member’s music library.