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The Mason Music & Memory Initiative (M3I)

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Case Study

The Mason Music & Memory Initiative (M3I)

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Educational Objectives

1. Explain the benefits of a nonpharmacological intervention, such as the *M3I*, for persons with dementia.
2. Describe the work of *M3I* and its collaboration with students and faculty throughout the state.
3. Highlight lessons learned and future directions for the *M3I*.

Background

By 2025, the number of Virginians age 65 or older living with Alzheimer's disease is expected to increase by 26.7% to 190,000 individuals; total Medicaid costs for this population will increase by 31.5% (Alzheimer's Association, 2019). In the absence of a cure, we advocate for person-centered, nonpharmacologic interventions that can address psychological and behavioral symptoms and improve the quality of life for individuals living with dementia. The use of anti-psychotic medications for individuals living with dementia in nursing facilities to treat symptoms such as agitation, anxiety, restlessness, aggression, delusions, and hallucinations is not efficacious and has serious medical and ethical repercussions (Bonner et al., 2015; Maher et al., 2011). To combat the high prevalence of antipsychotic medication, CMS began the Partnership to Improve Dementia Care in Nursing Homes in 2012, which promotes practices that are goal-directed and person-centered for every nursing home resident (Centers for Medicare & Medicaid Services [CMS], 2018). Despite these efforts, a recent Human Rights Watch report shows that anti-psychotic medications continue to be overprescribed in nursing facilities (Human Rights Watch, 2018). Further efforts are in place at the state and national levels: the Virginia Dementia State Plan identifies the importance of reducing needless anti-psychotic medication for individuals living with dementia in nursing facilities (Virginia Alzheimer's Disease and Related Disorders Commission, 2015), and CMS recently announced a new national goal of reducing anti-psychotic medication use by 15% by the end of 2019 (CMS, 2018). The Mason Music & Memory Initiative (*M3I*) will help to move forward Virginia's efforts to reach these goals.

Introducing the *M3I*

Personalized music interventions are nonpharmaco-

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logic, person-centered, and relatively easy to implement. The scientific research on music and health is becoming more robust, and several studies have demonstrated the positive emotional and physiological effects of music on the brain, improvement of mood and social engagement, and reduction of challenging behaviors (Ihara, Tompkins, Inoue, & Sonneman, 2019; Matto, Tompkins, Ihara, Inoue, & Byrd, 2015; Särkämö et al., 2012; Vasionytė & Madison, 2013). The **Mason Music & Memory Initiative *(M3I)*** is a person-centered care initiative, designed to help formal and informal caregivers implement and sustain this nonpharmacologic intervention for individuals living with dementia. The *M3I* leadership team includes three faculty members, a community partner, a coordinator, and students from the Social Work integrative Research Lab (SWiRL). With the support from a CMS Civil Money Penalty grant administered by Virginia's Department of Medical Assistance Services (DMAS), the *M3I* team is currently implementing the national MUSIC & MEMORY® intervention, combined with a training specifically for direct care workers in 114 nursing facilities across the state.

The MUSIC & MEMORY® intervention incorporates the concepts of person-centered care by developing and applying a music list with the individual's preferred songs and types of music (Music & Memory, 2008). This person-centered intervention has been effective in distracting the individual from the agitated behaviors often associated with dementia, such as irritability, sleeplessness, and verbal or physical aggression. Sundowning, also common among people with dementia, involves an increase in symptoms of agitation and confusion during the late afternoon or early evening hours. Offering the MUSIC & MEMORY® intervention to people with dementia soon before sundowning can lessen or eliminate these behaviors (Vasionytė & Madison, G, 2013). Across the country and in various places around the world, staff in nursing homes, hospice care, adult day care, assisted living facilities, hospitals, and home health care agencies have been trained to implement the MUSIC & MEMORY® intervention. Staff at these facilities attend webinars and receive technical support for a designated period of time. Following the buy-in and training of the direct care workers in nursing facilities, formal caregivers can use the intervention as a tool to work with residents who present or suffer from psychological and behavioral challenges due to dementia. The MUSIC & MEMORY® intervention, in combination with our training for direct care workers, is low-cost and easy to implement.

We developed the *M3I* online training for direct care workers with support from the Virginia Center on Aging's (VCoA) Geriatric Training and Education (GTE) initiative. Direct care workers are critical to implementing and maintaining nonpharmacologic person-centered care interventions in residential settings because of their frequent interaction with residents. The literature supports the concern that, if long-term care facilities do not have the buy-in and support of the direct care workers to implement nonpharmacologic interventions, implementation and sustainability will be more difficult (Thomas et al., 2017).

Given the time constraints for direct care workers, training works best when easily accessible, flexible, and concise. Micro-learning is a training technique used to provide content on-demand for workers by breaking information into small, concise segments, focusing on only one objective per module. Our training for direct care workers is divided into four modules and each module includes 2-4 learning activities, such as PowerPoint presentations, videos, and quizzes. The time required to complete each individual micro-learning activity is between 1-9 minutes.

The goals of the first module are to help workers identify dementia and behaviors associated with the condition, and to identify ways to communicate with a person diagnosed with dementia. The second module focuses on understanding person-centered care and the value of this approach. The third module introduces the MUSIC & MEMORY® intervention, exposes workers to application of the intervention at a local memory care center, and explains how music affects the brain. The final module focuses on implementing and sustaining the MUSIC & MEMORY® intervention. Staff has described the training as interesting, inspiring, exciting, helpful, informative, well-explained, easy to understand, and conducive to their work schedules. We have future plans to extend the online training to family caregivers and individu-

als with dementia residing in the community

In addition to the online training, our team has also developed several other initiatives. We have created a website that includes learning modules and webinars to assist with the sustainability of the MUSIC & MEMORY® intervention. You can go to our website and learn about the benefits of the intervention, how to upload music to an MP3 player and more: https://musicmem.gmu.edu/. We are also training students to be *M3I* ambassadors. The Social Work Integrative Research Lab (SWiRL) is an initiative in the Department of Social Work at George Mason University that provides an opportunity for undergraduate students to participate in various research projects, while also developing mentoring relationships with graduate students and faculty. This summer we have a great team of student interns who are being trained and mentored by our *M3I* coordinator. The training objectives for interns focus on research ethics, the behaviors and emotions often associated with dementia, interacting with people living with dementia, and caregiver stress. Our team has been able to expose both undergraduate and graduate students to research on dementia, and are striving to develop professional interest in working with older adults among social work and other students.

The work of the *M3I* is also supported by a 4-VA grant which enables students and faculty in other universities across the state to be involved in the work of the *M3I*; 4-VA is a collaborative partnership among six Virginia universities with a mission to promote collaborations that leverage the strengths of each partner university and improve efficiencies in higher education across the Commonwealth (https://4-va.org/). We have partnered with a doctoral student in the School of Social Work at Virginia Commonwealth University and faculty at James Madison University to train students to implement the MUSIC & MEMORY® intervention in nursing facilities in those regions of the state. Comments from students working on the *M3I* team include, "I love working with the residents. It's really touching to watch their faces brighten when they hear the music"; "The families are very hopeful that the music will give their loved one some relief."; "They know it's not a cure, but it's a way to connect with them that they didn't have before." We have also started recruiting volunteers through agencies such as Volunteer Fairfax and RSVP, which are volunteer networks focused on mobilizing people to meet regional community needs. We are hopeful that these efforts will help develop community champions across Virginia to strengthen the *M3I* initiative.

Leading up to the current work of the *M3I,* the Mason team, with support from VCoA's Alzheimer's and Related Diseases Research Award Fund (ARDRAF), tested the MUSIC & MEMORY® intervention in five community-based adult day health centers in Northern Virginia (n=51). In that quasi-experimental study, we found that the intervention improved mood, decreased agitation, provided a connection to music, and increased social engagement (Ihara et al., 2019). We used standardized instruments designed specifically for individuals living with dementia to measure mood and agitation and conducted both in-person and video-recorded observations of behavior. Four domains – mood, agitation, connecting to music, and engaging socially – were used to analyze participant changes before, during, and after the intervention. The standardized measures were not statistically significant, but the behavioral observations demonstrated positive changes in mood and decreased agitation. The participant behavioral observations showed the benefits of the intervention while the participants were listening to music. There were statistically significant increases from pre- to post- intervention in the following variables: joy, eye contact, eye movement, being engaged, and talkativeness. Similarly, there were statistically significant decreases in sleeping (Ihara et al., 2019).

Case Study #1

Mr. T is a 76-year-old Caucasian man with dementia. He was originally diagnosed with Alzheimer's disease about 5-years ago, while living in Texas but exhibits more of the symptoms of Lewy body dementia, such as hallucinations and a shuffling gait. About 30 years ago, Mr. T had moved back to Texas, where he was raised, to enjoy life on a ranch raising horses, long-horns, and chickens. His two siblings still live in Texas. Mr. T was married three times and he has known his current wife since high school. They both had grown children from other marriages and had been married for about 10 years. Within the same

year, both received a dementia diagnosis. The disease has resulted in their separation; Mr. T's wife is in Texas with her adult children and Mr. T has moved into a memory care facility in Virginia, being cared for by his adult children. Mr. T is currently incontinent, has trouble getting around, and only occasionally recognizes his children. His children had been introduced to the MUSIC & MEMORY® intervention a couple of years ago, but had never developed his playlist.

Mr. T *loves* country music. When he retired and moved back to Texas, he often sang at weddings and other celebratory events. A few of his favorite songs and artists are, *Make the World Go Away* by Eddie Arnold; *Luchenbach, Texas* by Waylon Jennings; *All My Exes Live in Texas* by George Straight; *I Walk the Line* by Johnny Cash; and *The Gambler* by Kenny Rogers. Mr. T can be aggressive when he feels forced to do things like showering, getting in and out of the car, and staying in one place for too long. He can become verbally aggressive and often physically inappropriate. He also often refuses to move, standing in one place for a long time.

Over the last year, as Mr. T's behavior has become harder to manage, one of his sons made a playlist for him and shared it with his siblings and Mr. T's grandchildren. Mr. T's son also put Mr. T's playlist on an MP3 player and along with a speaker, brought the playlist to the memory care center. Even though the MUSIC & MEMORY® intervention emphasizes the use of headphones, Mr. T does not tolerate headphones, so he listens to his music through speakers. Playing songs from his playlist has been beneficial for both his caregivers at the memory care center and his family. Generally, the only way Mr. T will get in and out of a car is by listening to his favorite music. Most often, Mr. T can be distracted by playing his favorite songs and is less aggressive and upset.

Case Study #2

Mary is a 77-year-old African American woman living with dementia. She attends a local adult day health center five days a week. Mary has two adult sons and four grandchildren. She has lived with her oldest son and her daughter-in-law for about a year after her husband passed away from a long battle with cancer. Mary's health declined rapidly after the passing of her husband. About five months ago, Mary had to have some heart valves replaced. While she has recovered from heart surgery, her dementia has progressed.

Mary's daughter-in-law works from home, but over the last year has taken Mary to the adult day health center five days a week. Mary tends to isolate herself at the center and constantly wants to walk around and leave to "go pick up her children from school." There is a door with a combination lock at the center and Mary takes every opportunity to walk closely behind someone who is leaving, *escaping* from the adult day area (not the center) a few times.

The adult day health center that Mary attends is MUSIC & MEMORY® certified. The staff has MP3 players and headphones for every participant. Each year the center has a fund-raiser where people are asked to have dinner at a restaurant where the center receives a portion of the night's profits and those attending dinner are asked to donate used or new MP3 players. This fund-raiser helps to ensure that the center has enough MP3 players and headphones for any participant who would benefit from the personalized music intervention.

The staff at the adult day health center uses the music intervention with Mary just about every day that she is there. They worked with Mary's oldest son and her daughter-in-law to determine what songs should be on Mary's playlist. Originally, Mary's family members were asked to complete a form where they listed Mary's favorite songs. The staff then followed-up with Mary's son and daughter-in-law, asking for more of Mary's favorite genres and musicians, so they could have even more songs for her to enjoy. Mary's music is used to encourage her to participate in activities, and her music is also used to discourage her from leaving the center. For example, Mary has a hard time sitting still and constantly wanders around the center. To increase social engagement, the staff often gives Mary her favorite music to listen to while she is walking around, enabling the staff to re-direct Mary to an activity she may enjoy. Participating in an activity increases social engagement and also decreases the risk of Mary potentially leaving the adult day health center. Mary's family has not yet used the

music intervention at home, but have noticed the benefits it has for Mary while she is away from home.

Effects on Caregivers

As illustrated by the case studies, personalized music often changes unwanted behavior and can redirect emotions. When behavior and stimulation are changed with the MUSIC & MEMORY® intervention, it is suspected that there will be a positive caregiver effect as well. The *M3I* team has plans to begin implementing studies to explore the impact of MUSIC & MEMORY® on caregivers. Our community partner is a local adult day health center which administers the MUSIC & MEMORY® intervention on a daily basis to many of its participants. Two caregivers (one formal and one informal caregiver) provided their insights on the MUSIC & MEMORY® intervention. A daughter caring for her mom stated:

> *Dementia was starting to break the connection between my mother and me. When we were introduced to the Music & Memory program, I found that we could reconnect through the use of music that she loved. I enjoyed hearing my mom singing the words to her favorite Beatles songs, and I occasionally joined in. This connection helped me feel closer to my mother than I had in years.*

Katelyn Sloan, Director of Recreation (Insight Memory Care Center staff), said:

> *Utilizing personalized music as an intervention for our participants has greatly reduced the anxiety that they were experiencing, especially around 3 pm when the buses start arriving to take them home. We also see less resistance to getting onto the bus and a more relaxed ride home, when the participants enjoy their personalized music during their ride home.*

Conclusion

Our previous work testing the intervention and developing the training for direct care workers has led us to our current work of implementing *M3I* across Virginia. We continue to refine our data collection process and are excited to expand our research to develop other methods to passively capture the data and test the effects of nonpharmacologic interventions for family caregivers. Involving more faculty and students across the state in data collection will help sustain the intervention and increase awareness of its positive effects.

Study Questions

1. Explain why you would use the MUSIC & MEMORY® intervention and discuss its basic benefits for people with dementia?
2. Who can implement the MUSIC & MEMORY® intervention and how widespread is the intervention throughout the state?
3. How can student participation in this work contribute to a change in attitudes toward older adults?

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Megumi Inoue is Principal Investigator for the *M3I* and an Assistant Profes-sor in the Department of Social Work. Dr. Inoue brings her extensive clinical experience as a social worker and a registered nurse to her understanding of research areas that include advance care planning and culturally sensitive companions in long-term care.

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