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## INFORMATION & COMMUNICATIONS TECHNOLOGY IN EDUCATION | RESEARCH ARTICLE

# Witnesses to transformation: Family member experiences providing individualized music to their relatives with dementia

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**Abstract:** Content analysis of 35 family members stories found that sharing individualized music enhanced memory, mood and provided interactive opportunities, where family members connected and communicated with relatives who had dementia. Technology supports a positive new role for family members, who often use MP3 players (e.g. iPods), headphones, splitters, and other technical devices to share preferred, culturally relevant, and digitized music with relatives with dementia. Family members, who provided individualized music described new positive memories and transformed beliefs about the disease and their loved one. Educational leaders in general and music educators specifically, have an opportunity to add renewed emphasis to the culture and value of music as a lifelong resource. Music appreciation courses that include technological skills for creating playlists could support a lifetime of access to individualized music for young and older students, who are also prepared to address needs of those with neurological disorders, such as Alzheimer's disease.

### ABOUT THE AUTHORS

The authors have scholarly and practitioner backgrounds in fine arts, music, education, leadership, psychology, and gerontology. We are educators, who are interested in the arts as a support for learning at every stage of life. Elizabeth Johnston is a research fellow at Center for Educational and Instructional Technology University of Phoenix (UOP) holds EdD in Educational Leadership (Loyola of Chicago), MA in Special Education and Fine Arts, and BA in Fine Arts and Psychology (Michigan State). Xeno Rasmusson is an associate professor at California State University East Bay, Department of Human Development, holds PhD in Biopsychology (University of Georgia), BA in Psychology (Augustana College), and Research Fellowships in Neuropsychology of Aging and Dementia at Johns Hopkins School of Medicine and National Institute on Aging. Barbara Foyil is a faculty at UOP holds PhD in Adult Education (Capella University), MA in Educational Technology/Leadership (Pepperdine University), and BS in Human Development (Hope International). Patricia Shopland is a faculty at UOP holds BS in Education (Concordia University), MA in Music and Music Education, EdD in Instructional leadership (Columbia University Teacher's College), and MED in Instructional Technology (Lesley University).

### PUBLIC INTEREST STATEMENT

Substantial and persuasive research indicated the power of familiar music to calm and engage persons with dementia. Less is known about the responses to music by family members, who provide 90% of the care and sometimes choose culturally and personally familiar music to share with their relative with dementia. As researchers, we found family members treasured the moments when listening or making familiar music was a means to connect, communicate, and engage relatives with dementia. Sharing music allowed the family members to assume new roles and form positive memories with relatives. The role of providing music contrasted sharply with other caretaking tasks that were described as difficult or troublesome. Understanding the value of music at the end of life offers new possibilities for music educators and lovers. Educators could emphasize the value and culture of music and prepare students to enjoy culturally relevant music throughout life.

**Subjects: Nonverbal Communication; Lifelong Learning; Cultural Study of Popular Music; Music Therapy; Digital Music**

**Keywords: music education; technology; twenty-first-century learning; music therapy; dementia; quality-of-life; caregivers; teaching/learning strategies**

### 1. Introduction

Family members provide palliative care for 90% of persons with dementia (PWD) (Kongsuwan & Chaipetch, 2011) or end of life illnesses (Epiphaniou, et al., 2012) and report low levels of support for their caregiving from health teams, other family members, or society in general (Reigada, Pais-Ribeiro, Novellas, & Gonçalves, 2015). Family members of persons with dementia face personal and social challenges as the relationship transforms due to cognitive declines in the PWD (Beard, Knauss, & Moyer, 2009). Despite strategies to support the social relationship, family members of PWDs often report depression, grief, and anxiety (Pinquart & Sörensen, 2003) and experience physical, psychological, or social consequences (Cotel, Rodriguez, Perez, Iglesias, & Logo, 2016). With no effective cure and limited treatments, the primary goal of care for PWDs is improving quality-of-life (Prince, Prina, & Guerchet, 2013) and family members assume multiple new roles to insure the PWD receives personal care, medical services, and psycho-emotional and psychosocial care (Reigada et al., 2015) often performing tasks perceived as troublesome or difficult (Ono, Kanayama, Iwata, & Yabuwaki, 2014).

During caretaking roles, family members engage in a close relationship of common physical, emotional, and intentional experience (Ono et al., 2014), in which emotional states may be mirrored, potentially leading to escalating negative responses (Schulz & Martire, 2004). Elder, Johnson, and Crosnoe (2003) posited lives are lived interdependently and social, historic, and cultural influences are expressed through a shared relational network of family and friends. Transitions, such as end of life, or the experience of dementia represent a set of quantitative and qualitative changes in life course; and, both the individual with dementia and others, who are close in relationship experience transitions.

### 2. Family member quality-of-life

The principle of interdependent lives (Elder et al., 2003) speaks to the importance of dementia, such as Alzheimer's disease and other forms of cognitive impairment, as a change agent in the lives of all who are closely linked to the PWD. Individualized music has been identified as an intervention that enhances communication with and relieves anxiety thus, improving quality-of-life for PWD (Gerdner, 2015; Hulme, Wright, Crocker, Oluboyede, & House, 2010) and may provide support for family members (Sarkamo et al., 2014; Snyder et al., 2016) as they take on different roles, while caring for and relating to family members with dementia (Reigada et al., 2015). Schulz and Martire (2004) concluded that family members provide great value to PWD and society in general at great personal cost.

Listening to familiar music has emerged as a promising source of support for persons with dementia (Gerdner, 2015; Sarkamo, et al., 2014). Music reminds listeners of earlier times (Sarkamo et al., 2014), while uniting the relational network in a social experience (Creech et al., 2014). Music and making music is characterized as an innately human activity that brings quality to life and social interactions with others. Creech et al. (2014) and can be supported by those without professional credentials (Clair, Mathews, & Kosloski, 2005). Gerdner (2015) in particular, has reported that culturally significant and personally meaningful music is especially, important for benefits to PWD and family members are in the best position to assemble the individualized music playlists.

### 3. Formulating the problem

One striking aspect of dementia is the loss of identity and the resultant disturbances for family members who experience losing a loved one to the disease over months or years. Elder et al. (2003) postulated in life course transitions that radical changes, such as dementia influence the entire social system surrounding the affected individual. In family groups or small communities, losing one member resonates throughout the relational network, changing the quality and nature of

relationships. New identities will emerge in older adults experiencing life transitions and in individual members of their social networks (Elder et al., 2003), engaging in music provides an opportunity to develop positive, alternative visions of self (Creech et al., 2014).

Listening and making music has been shown to have a positive effect on older individuals (Creech et al., 2014); and to have a positive effect on both persons with dementia (PWDs) and family members (Saarikallio, 2011; Sarkamo et al., 2014); further, Gerdner (2015) indicated the importance of individually preferred, culturally or ethnically congruent music as a way to communicate with and in calming agitation for PWD as compared to music in general. Family members will take on challenges (Ono et al., 2014) in assuming multiple new roles to insure a relative with dementia receives personal care, medical services, and psycho-emotional and psychosocial care (Reigada et al., 2015). However, the role of providing and sharing individualized music for relatives with dementia is different from other family roles described in literature as troublesome or difficult (Reigada et al., 2015) and less understood.

As researchers we were interested in how family members experienced providing music for a relative who was changing due to dementia. Many family members of PWDs may not be aware of the potential value listening to and actively engaging in music throughout life (Creech et al., 2014; Saarikallio, 2011; Sarkamo et al., 2014), thus, missing an opportunity to improve personal quality-of-life, while continuing to support and engage with a related PWD. Exploratory research was needed on how family members construct meaning about the roles they play when successfully developing, sharing, and experiencing familiar music with relatives who are PWDs in instances, where listening and making individualized music led to positive outcomes.

#### 4. Research questions

To assist in resolving the problem, the following research questions were asked: What experiences do family members of people with dementia share about use of music?

SRQ1: How do the family members describe developing a personal playlist for the PWD? Otherwise, how did they provide music to their loved one?

SQR2: How do family members describe PWD response to individualized music or music listening in general?

SRQ 3: How do family members characterize individualized music listening as a shared activity with PWDs? In particular, is there narrative evidence that music listening increased or improved social interaction among the PWD and family members of the PWD?

The current qualitative content analysis explored how family members characterized their experience with individualized music in online remarks and testimonials. In particular, 35 family member self-reports shared at the Alive Inside Foundation web site provided a purposive sample to answer the research question and related sub-research questions.

#### 5. Method

The qualitative, conventional content analysis approach used here, allowed researchers to explore the construction of personal meaning (Hsiu-Fang & Shannon, 2005) and develop explanations without pre-existing codes (Kim & Gillham, 2013). New technologies enable public sharing of personal experience and afford researchers a wealth of narrative data for qualitative content analysis. Such data exists in online blogs, email interviews, instant messaging interviews, Skype-enabled interviews, and live conference software that supports live interviews (Wilson, Kenny, & Dickson-Swift, 2015). Content analysis is preferred to explore poorly understood contexts or phenomenon, where little previous research has been published (Denzin & Lincoln, 1994). The content analysis design is appropriate to unobtrusively gather content that has been generated without considerations of researcher interests or influences.

Previous research has established the positive effect of music and music-making for individuals with dementia and caregivers when provided by family caregivers rather than professional care staff (Sarkamo et al., 2014). The purpose of this qualitative content analysis research was to explore the experiences of family members who had provided care and support to relatives with dementia and reported positive outcomes. One goal of the study was to explore how to support family members role as individualized music provider as part of their caregiving functions for the PWD. Accordingly, as researchers, we intentionally focused on stories of individuals, who described positive experience with their PWD family members favorite individualized music.

### **5.1. The sample**

Criteria for this purposive sample of stories were that family members had reported in their own words direct and recent positive experience either providing music to or observing individualized music played for a family member with dementia. Content consisted of 35 stories gathered from The Alive Inside Foundation website (<https://www.aliveinside.org>). The foundation has made public family members' stories about positive personal experiences with music and their loved one with dementia as part of the Community Outreach project. Some stories are from the film *Alive Inside* and were posted during the time frame of 2014–2016 (<https://www.aliveinside.org/outreach/>). Family member comments were sharply focused on the individualized music experience in the context of the open-ended opportunity to “share your story”. The website established the hashtag #aliveinsidestories for this purpose and their staff have to date uploaded 35 such stories.

Five men and 30 women shared stories about their family members with dementia and nearly all contained personal experiences providing music. The word count averaged 149 words per story (total 5,519), ranging from six to 623 words. Relatives were daughters (19), granddaughters (7), sons (4), a daughter-in-law (1), and a grandson (1) and non-specified (2). The stories identified six as caregivers, 11 non-caregivers but most ( $n = 22$ ) did not specify. Seventeen of the PWDs were described as having a form of dementia (specifically, Alzheimer's,  $n = 15$ ), and the remaining did not specify whether dementia was present or not ( $n = 18$ ). Given the context and mission of the Alive Inside film and foundation, a safe assumption is the majority of the #aliveinsidestories refer to family members with some form of dementia.

### **5.2. Procedures**

#### **5.2.1. Content gathering**

Once the content was identified, the text was downloaded from website and placed into a word processing document. In the first step, the four-member research team cleaned the data and protected the identities of contributors by removing any last names. Cleaning the data included checking for duplication and correcting inappropriate punctuation, and normalizing all the text to read as first person accounts, whereas some stories at the website were introduced, and the family members' contribution appeared within quotes. All text from the family member remained intact. Data cleaning was conducted individually and then collectively easily reaching consensus.

#### **5.2.2. Data analysis**

The pattern of reading separately and then together to adjudicate the findings was followed in the first step and throughout the analysis. The first phase of analysis was categorical and used to describe the sample demographically. The qualitative, descriptive analysis began by identifying “who” and “what” kind of contribution was made. The stories included clear descriptions of who told the story, and as researchers, we provided a word count of each story and the nature of the comments (detailed narrative, simple endorsement or a combination; and some stories were considered to be “off topic” for the present purposes).

We used a conventional content analysis, which is most appropriate when theoretical understanding of a specific phenomenon is limited (Hsiu-Fang & Shannon, 2005) as is the case in the current study. Ziegler, Paulus and Woodside (2006) described the inductive process using a hermeneutic circle

approach, which we employed. Steps in the process, included (a) developing a holistic understanding, (b) comparing impressions with other team members, (c) identifying units of meaning, individually and then collaboratively, (d) synthesizing findings. In the synthesizing step, the research team developed tentative models that explain the experience after agreeing on the meaning units and aspects of the experience. The research team worked individually and collectively to identify codes and themes in the responses identified as related to the specific research questions. Complete phrases were identified that could be used to generate codes or briefer phrases that helped to categorize or characterize family member contributions. In the first steps, we used four different colored markers to identify text related to research questions. In later phases of thematic analysis, team members also returned to the original text free form coding in the original context to ensure no instances of the final thematic categories had been missed as well as ensuring no new thematic categories were required. Tables in the results section include themes, codes and related comments from the analysis. Research sub-questions are presented first and the overarching question is used to summarize findings in the discussion.

## 6. Results

### 6.1. SRQ1: How do family members describe developing a personal playlist for the PWD?

We identified 25 responses that related specifically to family members providing music for their loved one. Two themes emerged: (a) Selection/choosing music for the family member and (b) How music was provided in practice? Table 1 shows codes and family comments on choosing music from memories of favorite specific music or artists ( $n = 9$ ) or genres ( $n = 17$ ) beloved by the PWD.

A second theme indicated how music was provided. Two codes emerged in the analysis: (a) Listen: Family members generally reported playing recorded music for the PWD, often specifying CD format or digital music and/or devices and (b) Sing: Some family members reported singing to or giving a live music performance to their loved one with dementia. Eight participants did not provide any details on how the music was provided.

**Table 1. Selecting favorite music for PWDs**

*Theme: Selection*

*Codes were favorite specific songs or musical works (9 responses)*

P1. I knew she loved Diana Ross and the Supremes' "I Hear A Symphony"

P2. "Fiddler on the Roof" and Sinatra and the music of his youth and happy times with my mom

P3. His favorite show-tunes and stuff, or you'd sing a song like "Take Me Out to the Ballgame"

P4. She likes Charlie Pride, she likes Merl Haggard, she likes *The Sound of Music*, Frank Sinatra, etc. So we're going to get all of my mother's music

P5. And P6. She sings, "Pio pio pio, dicen los pollitos," she loves that one

P11. We found that she loves to hear music especially some of her favorites like Marc Antony and Bette Midler

P15. Some of her favorites are "Brown girl in the ring"; "Amazing Grace", "The Rose" and "Love lifts us up where we belong"

P29. Playlist of our lives! Matt Munro singing "Walk Away," "Born Free," "For the Good Times"

P35. Operas in which she participated when she worked at the Grand Opera House in Lodz

*Codes were favorite artist or genre (8 responses)*

P2. We'd play "Fiddler on the Roof" and Sinatra and the music of his youth

P8. Hymns and Christmas carols

P10. Lawrence Welk or polka music

P3. I'm lying in bed with him, I'm holding his hand, and we put on *Fiddler on the Roof*, "Sunrise, Sunset"

P18. We began to sing Christmas carols to her

P22. Singing familiar songs to her

P23. My mom loved music. She sang in the choir at church and loved the old hymns

P35. All operas I could think of

**Table 2. Listen or sing: Family comments on how music was provided**

*Theme: Providing music*

*Code: Listen (8 responses)*

P1. I downloaded two songs (she loved)

P9. They would end the day with sing along Sound of Music

P27. (We brought) a CD player to the rehab facility along with some of her favorite music

P35. I bought her a nice CD player and put on some of the CDs from her old collection. AND: buying her CDs with all operas. Gosh, I bought some 18 operas in sets of one more CD per opera. Then it took me ages to make copies of them all and have all titles printed

P3. We put on *Fiddler on the Roof*, "Sunrise, Sunset"

P 22. I use my smart phone with a blue tooth speaker to play music from her era

P23. During one visit to ER the month before she passed, my sister and I played "How Great Thou Art" on my iPad to help her stay calm

P27. One day we brought a CD player to the rehab facility along with some of her favorite music. We put on her headphones and she closed her eyes

*Sing (8 responses)*

P3. You'd sing a song like "Take Me Out to the Ballgame"

P5 & 6. There's a lot of songs that she would sing me to go to sleep and they're in Spanish so we still sing them

P15. I sing, dance, walk, laugh, hug and hold her hands. I sing her favorite songs and my favorite songs

P18. We began to sing Christmas carols to her

P22. Singing familiar songs to her

P2. My sister can sing well and play, and she'd bring it in and we'd play

P9. Martha brought along her guitar and played for my Mom and some of the other residents of the nursing home

### 6.1.1. Listen using digital technology

In total seven family members described the specific player technology used to provide recorded music; CD players were named by three, and four named a portable electronic device, with one each naming an iPad, iPod, MP3 player, and smartphone with a bluetooth speaker. Headphones were named in four cases and only one family member specifically mentioned using a splitter for listening to music together with two sets of headphones. Eight family members mentioned singing or performing music.

### 6.2. SRQ2: How do family members describe PWD response to individualized music or music listening in general?

Two themes emerged in the analysis of the family members descriptions of PWD responses to music (specifically observed behaviors and inferred emotions).

Table 3 includes the codes and family member responses that indicated specific observed behaviors. Sixteen family members provided responses that related to PWD response to individualized music.

**Table 3. PWD responses to individualized music**

<i>Theme: Observed Behaviors</i>
<i>Code: Facial expression (3 responses)</i>
P10. Smiles as she listened
P11. A fun beat makes her smile
P18. She clapped, smiled
<i>Code: Sing along (7 responses)</i>
P1. My sister sat up, started to sing along, even doing all the Supremes hand-motions!
P3. He's trying to hum along, like he knew that. All of a sudden he knew all the words He'd hum with my wife, who sings opera, she has a good voice, and it was beautiful
P9. Mom who had been pretty much out of it began to sing "Edelweiss"
P18. She was able to sing along to each of the carols and hymns
P24. What was a blank stare before becomes a smile and tapping feet. Laughter and constant mumbling
P27. Within minutes she started to nod with recognition and tears began to stream down her cheeks
P32. Tried to sing along. Tears streaming down faces
<i>Code: Hold hands, tap feet, move (4 responses)</i>
P11. She even sometimes tries to move and dance
P28. Bounces her head and waves her hand to the beat. Laughs and jokes
P34. Would perk up. Often, they would smile, tap toes or air conduct
<i>Code: Verbal reply (3 responses)</i>
P1. When the song ended, Delia turned to Jeff, her husband, gave him a little shove on the arm, and told him what a funny guy he was
P15. When I am in her presence I sing, dance, walk, laugh, hug and hold her hands. I sing her favorite songs and my favorite songs. Some of her favorites are "Brown girl in the ring"; "Amazing Grace", "The Rose" and "Love lifts us up where we belong. After spending a little time together and if asked, who am I? She will say," My daughter?
P23. She (PWD) said, "I love you"
<i>Theme: Inferred emotions</i>
<i>Code: Animated (3 responses)</i>
P2. We'd play "Fiddler on the Roof" and Sinatra and the music of his youth and happy times with my Mom and it moved him so much. It was the most animated he was
P14. He just lights up ... I can see it in his eyes
P35. She came to life. Her eyes opened wide and guided by my singing, she joined me throughout the piece, looking like she's experiencing some great joy and pleasure
P18. By chance, we began to sing Christmas carols to her and all of the sudden she opened up in a way that we hadn't seen for years

**6.3. SRQ 3: How do family members characterize individualized music listening as a shared activity with PWDs? In particular, is there narrative evidence that music listening increased or improved social interaction among the PWD and family members or others?**

Two major themes emerged in response to SRQ3. These themes were (a) benefits to the PWD and relationships with family members and (b) benefits to family members.

**Table 4. Family observations of PWD**

<i>Theme: Relationship benefits to PWD and family members</i>
<i>Codes: Connect, communicate, share, interact, engage, improved relationship, shared activity (7 responses)</i>
P3. The music was very important because that was a way to communicate with him
P11. I've been even blessed further being able to combine my clowning skills with music to share with other dementia patients at the facility
P13. We always play music with her
P15. I sing her favorite songs and my favorite songs
P19. My father is a jazz musician and my mom has always been around music. It is a great way for us to connect
P20. (The) connection we now have through music. "What a difference music has made to help us engage"
P22. Music is the way I communicate with my mom. Often, we entertain fellow residents with our music while we gather in a small sitting room, passing the time together
P24. What was a blank stare before becomes a smile and tapping feet ... what was a silent room becomes full of laughter and constant mumbling
<i>Theme: Restorative qualities</i>
<i>Codes: Restoration: interaction, sense of "old self" (8 responses)</i>
P1. For a moment, she was there with us. I had a glimpse of my sister back
P9. Out of nowhere my Mom who had been pretty much out of it began to sing Edelweiss
P18. She opened up in a way that we hadn't seen for years held our hands, showing us the beautiful life that had been hidden by disease
P23. "Said, 'I love you.'" I hadn't heard her speak other than sounds or nonsensical words for months
P24. They might not be full sentences or even words, but for just a moment in time he is there with us
P27. Some of her favorite music. We put on her headphones and she closed her eyes. Within minutes she started to nod with recognition and tears began to stream down her cheeks
P28. The music is very healing; music is the last memory to go ...
P34. Almost from when I started doing this, I noticed something truly remarkable: Residents who had appeared virtually unresponsive to anything or anyone, and who could not even remember where they were or recognize loved ones, would perk up on hearing a familiar song, becoming more alert and oriented. Often they would smile, tap toes or air conduct. There were several who would sing right along, remembering the melody and virtually every lyric!

Sixteen family members provided responses that related to PWD response to individualized music.

The second theme, which is displayed in Table 5 was family member benefits. Ten family members provided comments about personal benefits.

**Table 5. Family member benefits**

<i>Theme: Family member benefits</i>
<i>Code: New positive memories (6 responses)</i>
P3. He died in our arms. It was so beautiful. We held him and we released him. It was gorgeous. It was so incredibly beautiful. We just held him and when he was leaving we were just like, "Go Harold, go, you go!"
P9. One of the fondest memories I have is when Mom's former recreational therapist Martha, came to visit her while she was on hospice. Martha brought along her guitar and played for my Mom and some of the other residents of the nursing home
P23. She looked me square in the eye "Said, 'I love you.'" I hadn't heard her speak other than sounds or nonsensical words for months. That moment will stay with me forever
P24. What was a silent room becomes full of laughter and constant mumbling. They might not be full sentences or even words, but for just a moment in time he is there with us. Those few minutes mean the world to me

**Table 5. (Continued)**

P18. One of the most incredible memories I have of my Mimi was from a visit with her a few Christmases ago; by chance, we began to sing Christmas carols to her and all of the sudden she opened up in a way that we hadn't seen for years

*Code: Transform or transformational change in family member (5 responses)*

P1. I was afraid to believe playing familiar songs could actually work. Truly, it was a miracle. For a moment, she was there with us. I had a glimpse of my sister back. It truly was a magical day in the midst of this long, hard journey. We want to give this to others

P3. I felt like my role in his last days was just, somehow or other, I was a conduit to him into another space that was peaceful and comfortable

P24. You [to her Mom, who is PWD] still have a voice, you are just as important

P29. So, we will build our playlists and we will continue making memories around music. And I really hope that these memories will be kept safe for when we really need them later on

P35. So I'm just kinda playing around with these ideas, thinking that perhaps music allows for a higher, more spiritual connection to take place. We learn from our sources that through music one achieves the highest connection possible with the Creator. So I think that the brain is the interface to allow this to happen and the way it seems to be done quite effectively is through the mystery of music

## 7. Discussion

A number of themes emerged in response to the overarching research question: What experiences do family members of people with dementia share about use of music? These themes are described in Tables 1–5 and summarized here. We found that family members constructed new positive memories when they found a connection with or saw the PWD engage in the music (Table 5). An emotional relationship or connection, was restored, even if briefly. Transformative moments came when family members reframed self-identities as they listened or made music with PWD. Family members described new roles of great meaning, such as becoming allies, guides, supporters, or conduits to an end of life experience. These positive new roles contrasted sharply with the roles described as difficult and troublesome when providing care and support to a PWD (Ono et al., 2014). In family member stories, listening to or making music was characterized as a powerful aid to adjusting and transitioning to changing conditions within the family network.

Family members in the current study reported social, personal, and a relational benefit when making or listening to music became a shared event. Creech et al. (2014) indicated that music allowed older individuals to experience “purpose, autonomy/control/ and social affirmation” (p. 36) and become communicators and allies who reframed the experience through transformative insights. In the present study, family members described positive, active roles when facing the onset of dementia in a relative, where connections, communications, and interactions were momentarily restored through music interventions. Schulz and Martire (2004) suggested five strategies to support family members of PWD. The present qualitative, exploratory study clarified music as a support for family members in as many as three of the aspects. These were that (1) individualized music is an intervention that alters the environment; (2) that may be therapeutic to the caregiver; and (3) that individualized music experiences are an intervention that reduces the caregiver burden.

An intervention that alters environment: Sarkamo et al. (2014) reported that listening to music enhanced quality-of-life for both caregivers and family members. Creech, Hallam, McQueen, and Varvarigou (2013) found making music with others strengthens social networks and diminishes depression. In the present study, family members described connecting, communicating, sharing, interacting, engaging, improving relationships, and social sharing when they listened to or sang familiar music with PWDs (see Table 4).

Therapeutic for the caretaker: Choosing individualized music was important to the family members in this study (Table 3) and consistent with other research findings that PWD's favorite music selections resulted in the greatest positive changes in behaviors (Garland, Beer, Eppingstall, & O'Connor, 2007; Hicks-Moore & Robinson, 2008). Ridder, Wigram, and Ottesen (2009) described

singing as a way to engage PWDs in communicative interactions. Sarkamo et al. (2014) established that listening or singing music could evoke memories or other episodic memories from a past when the PWD had a wider range of cognition. Improved mood for both family members and PWD was also indicated as an effect of listening to or making music on a regular basis.

**Reduces caretaker burden:** Family members described occasional unexpected speech; the PWD would respond verbally after periods of muteness or greatly reduced verbal communication (Tables 3 and 4). Consistent with similar incidents as illustrated in the film *Alive Inside* (Rossato-Bennell, 2014), family members in the present study prized these moments as a restorative change to the PWD who seemed like their “old self”. The elements of familiar music (Table 1), such as rhythm, pitch, melody, harmony, and beat, may resonate with PWDs because of the historical and social context of previous life stage progressions. Gerdner (2015) suggested the organized and familiar elements of music served to organize an internal, chaotic PWD experience and calmed anxiety.

In the present study, family members characterized specifically observed behaviors and inferred emotions as PWD responses to music (Table 3). Family members indicated that facial expressions such as smiling or animation could show memories about the present and past experiences of joy in music. The PWD appeared engaged, animated, sometimes smiling and making eye contact and connecting in ways that did not happen without music. These findings are consistent with Gotell, Brown, and Ekman (2003) who reported that PWDs were smiling and able to make eye contact when the caregiver was singing. In a qualitative study, listening and singing were both found as helpful for self-control of emotions (Saarikallio, 2011). Creech et al. (2013) described multiple social, affective, and other benefits for older adults from actively making music.

**Conclusions:** Family members described positive responses to individualized music (Table 3). Gerdner (2015) indicated individually preferred music lessened anxiety and stimulated memory in PWD; further, ethnicity was identified as an important element in selecting individualized music. One implication of the present study is that music educators could provide a new emphasis on the value and culture of music and prepare students enjoy culturally relevant music throughout life and that could have a positive impact on their memory, emotional state, sense of identify and relationships during later life.

A new learner-centered approach to teaching culturally relevant music is emerging in UK schools (Evans, Beauchamp, & John, 2015). *Musical futures* engages learners in popular and community-centered music. We suggest that in a learner-centered approach, music educators could introduce learners of any age to the concept of a personal playlist, teach them to use a variety of digital technologies to store and play their personal playlists and how to maintain their playlist throughout their life course. Including the concept, function and development of a personal playlist in the K-12 music curriculum could also be helpful. A further suggestion is that music educators could support and teach the value of music for aged individuals and their families by encouraging individuals of any age to listen to and create music, develop the skill of constructing an individualized play list, and include developing individualized playlists in informal music curriculums.

**Limitations:** The understandings gained in the present study are limited by the scope and qualitative nature of the analysis and cannot be generalized to larger populations. A second limitation is that we did not develop the interview questions; having conducted this analysis, we would consider a second study where we shape inquiry. However, as researchers, we experienced some transformative insights about music in our lives. We are committed to learning to manage technology, music choices, and our social network to develop a rich and meaningful experience centered on music for ourselves as we transition later life.

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