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An Analysis of Sensory Stimulation Interventions in Music Therapy for Adults Living with Dementia:

Four Case Studies

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Abstract

In this case report, four music therapists were observed and interviewed to identify the primary goals, characteristics, and perceived benefits of sensory stimulation interventions for adults living with dementia. Cases were described with regards to participant characteristics, goals, session context, ways participants were engaged, characteristics of the music, and benefits. Primary goals ranged from "any kind of response" to "to maintain the cognitive function of periodic orientation." All cases included the use of receptive music therapy experiences with the use of live music via voice and a stringed instrument. Perceived benefits ranged from "increased alertness" to "increased tolerance of stimulation." Analysis of these cases revealed a range of approaches to sensory stimulation rather than a single goal or intervention strategy. These diverse conceptualizations highlight the need for a stronger theoretical foundation, as well as further research, to enhance the meaningfulness of this intervention.

Keywords: sensory stimulation; case report; dementia; music therapy intervention

Introduction

The purpose of this case report was to identify and describe the characteristics of music therapy sensory stimulation interventions for adults living with dementia in order to characterize the components of these interventions. Despite decades of references of sensory stimulation interventions in music therapy clinical practice (Bright, 1973; Clair, 1991; Clair & Bernstein, 1990; Ridder, 2005), the structure and characteristics of these

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interventions are not clearly defined. Careful examination of these interventions may deepen clinicians' understanding of the goals, characteristics, and benefits of sensory stimulation interventions in dementia care, further advancing our understanding of these interventions.

Literature Review

More than 55 million people are currently diagnosed with dementia, with nearly 10 million new cases each year (World Health Organization, 2022). The Mayo Clinic defines dementia as "a group of symptoms affecting memory, thinking and social abilities severely enough to interfere with your daily life" (Mayo Clinic Staff, 2022). Dementia is progressive, not part of normal aging processes, and incurable. There are multiple types of dementia that include Alzheimer's disease, dementia with Lewy bodies, and vascular dementia, all of which can be described by the stage of advancement: early, middle, or late (World Health Organization, 2022). The most commonly known, and usually the first symptoms to be recognized, are changes in memory recall, though other indicators include difficulty with word retrieval, disorientation, difficulty with decision making, and confusion (Mayo Clinic Staff, 2022). Some adults may also experience constellations of symptoms referred to as behavioral and psychological symptoms of dementia (BPSD), which can include agitation, wandering, self-stimulatory behaviors, and withdrawal (Ridder, 2005).

As the disease progresses, sensory processing changes and sensory needs become increasingly important (Smith & D'Amico, 2020). Sensory processing changes related to vision include reduced visual field, impaired depth perception (Alzheimer's Foundation of America, 2021), and misidentification or misperception of everyday objects (Alzheimer's Society, n.d.). Other changes include reduced tactile discrimination, such as determining hot from cold, and worsened ability to smell, which directly impacts taste (Xu et al., 2024). Sensory needs for adults with dementia include the need for auditory, visual, tactile, gustatory, and olfactory stimulation, as well as movement for vestibular stimulation, and variations in body positioning for proprioceptive stimulation (Lape, 2009; Tonelli, 2016). Addressing the sensory needs of those living with dementia can be undertaken through a variety of interventions, with the primary goals of care being to (a) increase arousal (e.g., increase orientation to self and environment) (Clair, 1991; Myskja, 2014); (b) preserve current abilities (Belgrave et al., 2011; Clair, 1991); (c) provide opportunities for human connection (Ridder et al., 2013); and (d) respond to symptoms associated with disease progression, particularly signs of agitation (Ridder, 2005). While the goals of sensory stimulation can be singular—that is, to focus on a single one of these goals—in practice these goals are often combined (Clair, 1991), and may be even sequential (Norberg et al., 2003).

Sensory stimulation interventions have been utilized extensively by clinicians in related healthcare fields. For example, when addressing signs of agitation, occupational therapists may modify the environment to change the sensory experience of persons living with dementia. Lape (2009) described the inclusion of multisensory interventions such as Snoezelen care for addressing under-stimulation, whereas Tonelli (2016) discussed the use of individualized sensory plans together with set scheduling to offer sensory integration for increased comfort and consistency. Nurses have focused on increasing arousal in late-stage dementia by offering music, touch, and object presentation (Norberg et al., 2003), as well as improving relationships between caregivers and those living with dementia, thereby increasing opportunities for individualized human connection and care (Lykkeslet et al., 2014).

Music therapists have addressed the sensory needs of those living with dementia for decades (Bright, 1973; Clair, 1991; Clair & Bernstein, 1990; Ridder, 2005), describing

these interventions in a range of ways that include terms such as sensory orientation (Myskja, 2014), music-assisted sensory stimulation (Young, 2013), and vibrotactile stimulation (Clair & Bernstein, 1990). These interventions have been implemented through instrument play, providing visuals that correspond to the theme of the group, singing, and/or physical touch. Further, Ridder (2005) defined "music stimulation" as group interventions involving musical activities that include singing and instrument play for the purpose of reducing agitation, while Clair and Memmott (2008) described stimulation[1] as "singing or talking combined with touching [to] provide an even deeper level of human contact" (p. 91).

However, the wide range of ways music therapists utilize the term sensory stimulation, along with related terms (i.e., sensory orientation, etc.) has created some confusion about the nature of these interventions. For example, Young (2013) describes sensory stimulation as both an intervention and a goal, while Belgrave et al. (2011) only characterize sensory stimulation as an intervention, providing little detail about the nature of this intervention(s). Given the importance of sensory stimulation in the everyday care of adults living with dementia (Smith & D'Amico, 2020), and the wide variety of ways sensory stimulation has been described by music therapists, the purpose of this case report is to describe the ways in which music therapists utilize sensory stimulation interventions in their everyday work with adults living with dementia, and in doing so, to clarify the goals, essential characteristics/qualities, and benefits of these interventions. The following research questions guide this focus:

1. What are the primary goals these music therapists address when providing sensory stimulation interventions with adults living with dementia?
2. What are the characteristics of these sensory stimulation interventions in music therapy with adults living with dementia?
3. What benefits do these music therapists report when using sensory stimulation interventions with adults living with dementia?

Method

Positioning the Study

Sensory stimulation interventions undertaken by music therapists were investigated through case studies. Case study research focuses on sharing "a detailed study of the concerned unit of analysis within its natural setting" (Priya, 2020, p. 95). Case study research designs provide a strategy for investigating phenomena by focusing on the unique ways these interventions are undertaken, without the need to define or categorize them in any specific way (Aldridge, 2005). The following cases provide contextualized accounts of interventions that allow for the combination of observational and interview data to be viewed in ways that provide a holistic picture of these interventions (Priya, 2020).

Epoché

Curiosity brought me to the topic of the study as an early career music therapist working in a private practice wherein my employer provided highly detailed training on sensory stimulation interventions. Surprisingly, however, the interventions I was taught did not resemble what I had learned during my music therapy studies or internship. I began to wonder if this type of sensory stimulation intervention was used widely by other music therapists, or if, in fact, it was unique to the practice. I turned to the music therapy literature, but there were limited sources providing any detailed account of how one might provide sensory stimulation as an intervention specifically for those living with dementia.

By illustrating what intervention implementation looks like in music therapists' everyday practice, I hope to inspire discussion related to music therapy interventions for those living with dementia and deepen understanding of sensory stimulation as a music therapy intervention.

IRB Review

This study was reviewed and approved by the Shenandoah University Institutional Review Board, protocol #1044.

Participant Recruitment

Participants were recruited using the following three methods: 1) online advertisements in music therapy social media pages/groups, 2) email recruitment from a state association directory, and 3) word of mouth recommendations from colleagues. Recruitment efforts were impacted by the global pandemic, COVID-19. Most long-term care facilities, where people living with dementia often reside and receive music therapy services, implemented restrictions on visitation and/or restricted opportunities for contact among residents, limiting the delivery of group music therapy services. Additionally, social distancing practices were still taking place as well as the use of personal protective equipment, both of which impacted the way music therapists interacted with participants and the interventions provided.

Seventeen music therapists were approached and nine music therapists expressed interest in participating. Only four music therapists were able to meet the consenting requirements and the study criteria of working with adults living with dementia and using sensory stimulation interventions in their practice. Reasons for not participating included participants with dementia being "preterminal," a private practice restructuring schedules/staffing issues, and concerns regarding the Health Insurance Portability and Accountability Act (HIPAA). HIPAA is a federal law in the United States which "requires appropriate safeguards to protect the privacy of protected health information and sets limits and conditions on the uses and disclosures that may be made of such information without an individual's authorization" (Office for Civil Rights, n.d.). The music therapists consented to participate in the study and permission was also obtained from each music therapist's employer. The legal representative of the music therapy participants with whom the music therapists interacted were provided written notice of observation emphasizing that the video recording was to document the actions of the music therapist and that the participant's likeness would not be recorded in the video. The music therapy participants were verbally informed of the study by the music therapist providing the session. Written consent was not obtained from the music therapy participants as they were unable to provide informed consent due to the cognitive and physical changes associated with dementia.

Types of Stimulation

Utilizing an analysis framework recommended by Lape (2009), each case was analyzed according to the type of sensory stimulation intervention undertaken: auditory, visual, tactile, vibrotactile, and olfactory. Each is defined as follows:

- Auditory – "of, relating to, or experienced through hearing" (Merriam-Webster, n.d., Definition 2)
- Visual – "of, relating to, or used in vision" (Merriam-Webster, n.d., Definition 1)
- Tactile – "perceptible by touch" (Merriam-Webster, n.d., Definition 1)
- Vibrotactile – "of, pertaining to, or involving the perception of vibration through

touch" (Oxford University Press, n.d., Definition 1)
- Olfactory – "of or relating to the sense of smell" (Merriam-Webster, n.d., Definition 1)

During the interview and analysis process, each music therapist described the ways in which they structured and delivered sensory stimulation interventions. This included 1) auditory stimulation, encompassing whole songs (i.e., musical accompaniment and voice), sounds produced by instruments, and foot tapping, 2) visual stimulation, including movement, a scarf, images within an ocean drum, and a printed picture, 3) tactile stimulation, including participants "touching and feeling" a sensory board and a Q Chord, along with vibrotactile stimulation from an ocean drum, and, 4) olfactory stimulation, provided by hand sanitizer (prior to COVID-19 restrictions, the music therapists used aromatherapy scents).

Data Collection

Observations

Each music therapist was observed working with an individual or in a small group (four to seven group members) session. Sessions ranged from 16 to 40 minutes in length. Two of these observations were live and two were recorded. Live observations took place in the setting in which the music therapy session typically occurred. Observational data were collected using a data intake form designed by the researcher (see Appendix 1). The intake form was organized into the following sections for each intervention: observations of the music therapist, observations of the participants, senses engaged, length of intervention, location of music therapist in relation to participant, observed changes/benefits of the participant, and the function of the music. Additionally, the data intake form recorded the session goals and a session summary.

Interviews

Interviews were conducted post-session with each music therapist. The researcher emailed each music therapist the interview questions one to two days prior to the scheduled interview to allow the music therapists to review the questions in advance. Each interview included open-ended questions related to the observed session, allowing the music therapists to share detailed responses about their use of sensory stimulation interventions, the primary goals addressed, key characteristics/qualities, and benefits (see Appendix 2). Time was also provided to allow the music therapists to make additional comments following the interview questions. Interviews ranged from 27 to 52 minutes and were audio recorded and subsequently transcribed via a secure, encrypted online transcription service.

Data Analysis

Data analysis was undertaken in three phases, with observational and interview data analyzed separately before being integrated. In phase one, analysis of the interviews was undertaken in the following stages:

1. Recorded interviews were first transcribed and read as a whole to get an overall sense of the content.
2. Key components of the interviews were then identified that corresponded to the research questions guiding the study:
    a. Goals/Purpose
    b. Reasons the Intervention was Chosen

   c. Characteristics of Participants
   d. Characteristics – Session Set Up
   e. Characteristics – Instruments, Tools, Interventions
   f. Characteristics – Benefits of Specific Tools/Instruments
   g. Characteristics – Way of Engaging with Participants
   h. Characteristics – Ways of Thinking about the Music
   i. Benefits of the Intervention/Session
   j. Context/Conceptualization of Benefits/Goals
   k. Conceptualization of the Session
   l. Definition
   m. Timing/Dosage of Session
   n. Values/Philosophy of Music Therapists
3. A narrative of each element of the interview was then created to address items A-N above.

In phase two, analysis of the sessions was undertaken in the following stages:

1. The session recording was reviewed to obtain an overall understanding of the session.
2. The structure of the session was then examined to identify session components and characterize them. For example, “introduction” characterized each session because it described the way each of the music therapists opened the session.
3. Each element of the session was then defined according to the following components:
   a. Ways the Participants Were Engaged/Actions of the Music Therapist
   b. Senses Engaged
   c. Length of Time
   d. Participant Responses
   e. Role of the Music

In phase three, these two sources of data were combined to create a case, utilizing pseudonyms for each case. Data integration was undertaken in the following stages:

1. The narratives created from the interviews, the definitions created from session recordings, and data intake forms were reviewed for relevance and compared for consistency.
2. Tables were created for each case to provide a representation of the session structures identified in phase two.
3. The narrative of the elements of the interview (A-N of phase one) was integrated into the creation of each case as aligned with the research questions.
4. This combination of data allowed for the creation of comprehensive cases. From there, similarities and differences were identified, as well as the need for a theoretical framework and reframing of sensory stimulation as a range of approaches.

Each case is then presented, followed by a discussion of the commonalities of these sessions and the way they reflect approaches to sensory stimulation.

Trustworthiness

Trustworthiness of case constructions were undertaken through the following methods:

1. Interview transcripts were reviewed while listening to the interview recording to confirm accuracy and corrections were made when transcription errors occurred.

2. Triangulation of the data for each case was undertaken by comparing between and within interview transcripts and session data. For example, the key components from each interview transcript (identified during phase one of data analysis) were combined with the others to compare across cases. This allowed for verification of preliminary findings, while also accounting for differences between therapists and sessions.
3. Each step of the data collection and analysis process was reviewed by a research consultant (academic supervisor) familiar with qualitative research methods. This ensured the integrity of the data analysis process and deepened the study findings. The consultant was provided with multiple examples of the analysis process, and provided with opportunities to review, critique, and discuss the process. Further, the researcher met regularly with the consultant to discuss the data analysis process and case study findings, ensuring consistency in the analysis process.

Findings

Four board-certified music therapists participated in the study. They identified as female, caucasian, white and white-Hispanic, and ranged in age from 23 to 39 years; and had an average of 7.6 years of clinical experience. Participants were observed working with an individual or in a small group (four to seven group members), with sessions ranging from 16-40 minutes. They resided in the Mid-Atlantic, Midwestern, and Southwestern regions of the American Music Therapy Association.

Each of these music therapists' sessions is presented as a case and includes the following components: 1) context of the session, participant characteristics, 2) goals of sensory stimulation, 3) a session outline, 4) ways participants were engaged, 5) characteristics of the music, and 6) session benefits. Table 1 provides an overview of each case.

Table 1. Case Overviews.

Name	Group or Individual	Goals	Ways Participants Were Engaged	Characteristics of the Music	Session Benefits
Karen	Group	-To prompt response -To create connection	-Singing/Listening -Touch with scented hand sanitizer -Visual movement or instrument play -Sensory board -Prompted reminiscence	-Live and recorded -Familiar -Several songs provided -"Noninvasive" -Background	-Increased alertness -Increased engagement -Elevated mood
Shirley	Individual	-To elicit an engagement response	-Singing/Listening -Visual movement -Touch with scarf -Vibrotactile stimulation	-Live and recorded -Preferred -Several songs provided	-Increased engagement
Ainsley	Group	-To maintain cognitive function of periodic orientation -To elicit a response	-Singing/Listening -Instrument play -Visual image -Vibrotactile stimulation	-Live -Familiar -Several songs provided	-Increased alertness -Elevated mood -Increased engagement -Increased orientation
Becky	Individual	-To meet sensory needs	-Singing/Listening	-Live -Familiar -Only one song	-Increased alertness -Reduced

Name	Group or Individual	Goals	Ways Participants Were Engaged	Characteristics of the Music	Session Benefits
		-To provide relief for discomfort		provided -Progressive use of rhythm, vocalizing, guitalele, and singing	restlessness -Increased responsiveness

Karen

Context

Karen was a white, 36-year-old with 13 years of experience as a music therapist, working in a Continuing Care Retirement Community (CCRC), and in addition to completing an undergraduate degree in music therapy, had also completed Neurologic Music Therapy training. Karen offered her conceptualization of sensory stimulation interventions as follows: "I use music as my tool [and sensory stimulation] is just another tool in the toolbox." Karen provided a 35-minute music therapy session to a group of seven residents. This session included an introductory song/check-in question, four interventions focusing on stimulating different senses, and a closing song.

Participant characteristics

The music therapy participants were older adults, in their 90s, living with dementia. Six of the participants arrived at the session using a wheelchair and one arrived with the support of a walker. Karen described the participants as being frequently asleep or "tuned out" when outside of their rooms. At the start of the session, the majority of the participants appeared tired and withdrawn, with one participant sitting with her eyes closed, manipulating a knee pillow and another participant leaning to one side, eyes closed, with her arms crossed. Participants typically remained in this state except when engaged by the music therapist, during which participants opened their eyes and responded to direct verbal prompts. One participant, who had their caregiver present, appeared the most alert and oriented, sitting up straight and displaying a bright affect.

Goal of sensory stimulation

Karen shared that the primary goals for the session included "any kind of response, interjection, [or] eye contact." A secondary goal was connection with the immediate environment as well as fellow group members. Karen specified that the goal of responsiveness was in reference to intentional prompts, both musical and nonmusical, as opposed to the "overwhelming noise and people passing by" which Karen described as commonplace in the CCRC.

Session outline

Sessions were typically provided on the unit, where background noise was present, though the session observation occurred in a closed activity room. Sessions comprise one or more sensory stimulation interventions, not all of which include music, and sessions occur at least once per week.

Table 2. Karen Session Outline.

	Intervention	Description	Senses Stimulated	Length
1	Introduction Song/ Check-in Question	The music therapist (MT) played an acoustic guitar and sang a lyrically modified version of "Good Morning" from "Singing in the Rain." The MT asked the group to speak about something good in their lives.	Auditory	~2 min.
2	Hand Sanitizer/Massage	The MT rubbed the hands of each group member with a scented hand sanitizer and prompted smelling. Recorded music selected from YouTube[2] was played in the background.	Tactile, Olfactory, & Auditory	~6 min.
3	Ocean Drum	The MT presented the ocean drum and prompted associations with the sounds of the ocean. Some participants were prompted to look through the drum as the MT held it above their head. Others were prompted to touch the ocean drum while the MT played it. Two recorded songs, "La Mer (Beyond the Sea)" and "The Voice," both by Celtic Woman, were played.	Auditory, Visual for some, Tactile for some	~7 min.
4	*A cappella* Singing	The MT asked the group for a song about the sea. The MT vocalized (without the use of words) "My Bonnie" and prompted the group to sing along with the use of the lyrics once the song was recognized.	Auditory	~2.5 min.
5	Sensory Board	The MT provided tactile stimulation with an ocean themed sensory board and provided hand-over-hand assistance when needed. The MT asked participants questions about how the board felt. For a participant who appeared more oriented, the MT prompted reminiscence. No music was provided during this intervention.	Tactile & Visual	~11 min.
6	Closing Song	The MT announced that this would be the final song and lead the group in *a cappella* singing of "My Bonnie" while briefly holding hands with each participant.	Auditory & Tactile	~2.5 min.

Ways participants were engaged

Karen started the session with a receptive song experience using modified lyrics to a song familiar to group members. Next, participants were engaged individually by having spearmint scented hand sanitizer rubbed on their hands while recorded music from YouTube was provided. At the start of the third intervention, Karen shared verbally that the theme for the session was the ocean. Two songs recorded by Celtic Woman played as Karen played the ocean drum above the participants' heads and prompted them to look up at the images within the ocean drum. For those who might be overstimulated by having the ocean drum above their head, the ocean drum was held in front of them and the participants were provided with hand-over-hand assistance to touch the drum while it was played. The fourth intervention involved Karen asking, "Who knows that song that goes," and vocalizing, or singing without the use of lyrics, the song "My Bonnie." For the fifth intervention, Karen utilized an ocean themed sensory board constructed of sand, rocks, glass beads, cotton balls, fabric, and corrugated paper. One by one, she requested to hold each participant's hand in order to guide them to the sensory board and simultaneously asked questions about the experience. The session closed with the group *a cappella* singing "My Bonnie" again.

Characteristics of the music

Karen described the music provided in the session as "noninvasive, not anything that like really draws your attention. It kind of fills the space." For the introduction, a lyrically modified version of "Good Morning" from "Singing in the Rain" welcomed the group members to the space as Karen accompanied herself on acoustic guitar at a moderate tempo. While offering hand sanitizer, a recorded spa-like music from YouTube created a soundscape of sustained, low electronic tones with mostly stepwise chromatic movement along with the sounds of water. As Karen engaged the participants with the ocean drum, playing from the tablet and Bluetooth speaker were, "La Mer (Beyond the Sea)" and "The Voice" both by Celtic Woman. Additionally, the beads in the ocean drum steadily and slowly sounded across the drumhead throughout the intervention with breaks in the sound while Karen moved between participants. For the fourth intervention, Karen prompted *a cappella* singing of "My Bonnie" at a lively, flexible tempo. "My Bonnie" was also used in the sixth and final intervention, in which it was presented in the same manner.

Session benefits

While the majority of the group participants appeared withdrawn at the start of the session, by the end they appeared more alert and engaged, observed through improved posture, vocal and physical engagement with the final song, and brightened affect. During the hand sanitizer/massage intervention group members received skin-to-skin contact not associated with activities of daily living (ADL). During the ocean drum intervention, some participants indicated an elevation in mood by displaying a brightened affect when approached by Karen. Overall, the perceived benefits included increased opportunities for social engagement and increased alertness, with enjoyment being observed during/after many of the interventions. Karen shared that it was nice to have the group members engaged for the majority of the session. Additionally, Karen noted during her interview that increased alertness and engagement during the music therapy session was likely to increase alertness and engagement after the session, including when receiving medication or receiving care, assisting in reducing time to complete tasks.

Summary

Karen's session involved a group of seven residents living with dementia in a CCRC with the session goal being to elicit "any kind of response." Interventions included recreative and receptive music experiences, most commonly involving predictable, repetitive musical structures. Auditory, visual, olfactory, and tactile stimulation were included, with the primary session benefit being increased alertness. Music was provided during all interventions, with the exception of the longest intervention involving the sensory board. Karen highlighted the intention to not "overload the session" and not have music playing at all times.

Shirley

Context

Shirley was a white-Hispanic, 23-year-old with one year of experience as a music therapist, employed as a Therapeutic Recreation Specialist, and was running a pilot music therapy program in a CCRC. She defined sensory stimulation as "using different methods to invoke the senses when other senses aren't quite there anymore." Shirley provided a 16-minute music therapy session to an individual resident. This session included two introductory songs, four interventions focusing on stimulating different senses, and a closing song.

Participant characteristics

The music therapy participant was a male in his 90s, living with late-stage dementia. He was seated in a Broda chair for the session. At the start of the session, the participant sat in an upright position with his eyes closed and remained this way for the majority of the session except when recorded music was provided. During the recorded music, the participant had his eyes open more often in comparison to live music, especially when the volume increased. The participant engaged with the music through movement rather than speaking or singing. On one occasion the participant shook his head as Shirley sang his name in a song.

Goal of sensory stimulation

Shirley described that the goal for the session was "to elicit a meaningful engagement response," specifically "to engage with myself as the music therapist [and] to engage with his environment." Engagement with the environment included engagement with the music, musical instruments, or sensory tools utilized. Opening of eyes and visual tracking were seen as secondary goals.

Session outline

The session was provided in the participant's room where there are less "distracting noises." It included the use of two preferred introductory songs as well as several sensory stimulation interventions that provided different types of stimulation. Sessions occur at least once per week.

Table 3. Shirley Session Outline.

	Intervention	**Description**	**Senses Stimulated**	**Length**
1	Introduction Songs with Name Insertion	The MT sang and played "Oh What a Beautiful Morning" on acoustic guitar while swaying side to side in time with the music. The MT continued to play the guitar, modulated to a new key, and provided a lyrically modified version of "Good Morning" from "Singing in the Rain" during which both the participant's and the MT's names were inserted into the lyrics.	Auditory & Visual	~2.5 min.
2	Scarf	The MT slowly moved an outstretched scarf side to side allowing it to touch the participant's hands. The scarf was waved and tossed in a multitude of directions within the participant's line of sight as well as draped over the participant's hands and slowly pulled away below his line of sight. A recorded version of "The Lord's Prayer" by Piano Hymns was played throughout.	Auditory, Visual, & Tactile	~4 min.
3	Receptive Song with Name Insertion	While the scarf lay on the participant's hands, the MT sang and played on acoustic guitar "When Irish Eyes are Smiling." The MT inserted the participant's name into the lyrics in multiple places.	Auditory & Tactile	~2.5 min.
4	Ocean Drum	The MT held and played the ocean drum close to the participant while singing about the ocean drum, its sound, and its location in relation to the participant.	Auditory, Visual, & Vibrotactile	~2.25 min.

	Intervention	Description	Senses Stimulated	Length
5	Ocean Drum/*A cappella* Singing	The MT sang "When Irish Eyes are Smiling" *a cappella* while providing a beat on the ocean drum. Slowly the ocean drum faded as the song continued. The MT inserted the participant's name into the lyrics in multiple places and at times moved her torso in time with the music.	Auditory, Tactile, Visual, & Vibrotactile	~3 min.
6	Closing Song	The MT sang and played parts of "Happy Trails" on acoustic guitar and inserted the participant's name into the song in multiple places.	Auditory	~1.5 min.

Ways participants were engaged

Shirley started the session by inviting the participant to join her while she sang and played "Oh What a Beautiful Morning" on acoustic guitar and swayed side to side, which transitioned into a lyrically modified version of "Good Morning" from "Singing in the Rain," with the participant's name incorporated into the lyrics. Next, while a recorded version of "The Lord's Prayer" by Piano Hymns played, Shirley manipulated a green scarf to touch the participant's hands, wave in the air in a multitude of directions, and later be tossed in the air. During the third intervention, Shirley played and sang "When Irish Eyes are Smiling" on acoustic guitar and inserted the participant's name into the lyrics. Shirley then sang an original song about the ocean drum as she slowly moved/sounded the ocean drum around the participant, later transitioning to a steady beat. The fifth intervention involved Shirley singing "When Irish Eyes Are Smiling" again, with a steady beat on the ocean drum and inserting the participant's name into the lyrics as she occasionally moved her torso in a circular motion with the music. The session closed with Shirley singing and playing on guitar parts of the song "Happy Trails" with the participant's name inserted into the lyrics. Throughout the session, Shirley informed the participant of what she was going to do prior to doing so.

Characteristics of the music

Shirley shared that the participant's family identified the songs selected for the session as familiar and that they "work well for him." The first songs, "Oh What a Beautiful Morning" and "Good Morning" (from "Singing in the Rain"), lyrically offered orientation to the time of day and to those present in the room. An instrumental piece titled "The Lord's Prayer" by Piano Hymns was provided on an iPad and Bluetooth speaker with fluctuations in tempo that mirrored the movement of the scarf intervention. During the third intervention, Shirley sang and played "When Irish Eyes Are Smiling" at a lively tempo. For the fourth intervention, Shirley's original song about the ocean drum lyrically described the drum and its proximity to the participant. At times, Shirley tilted the drum completely on its side and sang in a staccato manner "stop." During the fifth intervention, Shirley again sang "When Irish Eyes Are Smiling" in a similar manner though initially with the ocean drum instead of the guitar. Finally, parts of the song "Happy Trails" were provided for the closing song at a moderate pace with three different guitar strumming patterns utilized throughout. Shirley described how the overall volume of the music started low and steadily increased in volume to the end of the session.

Session benefits

Shirley stated that the participant benefitted from the session by meeting the goal of

increased engagement, specifically with the music therapist, the music, and the scarf, mostly through movement.

Summary

Shirley's session involved one participant living with dementia, residing in a CCRC with the session goal being to elicit engagement. Interventions included receptive music experiences, most commonly involving repetitive musical structures. Auditory, visual, tactile, and vibrotactile stimulation were included, with the primary session benefit being increased engagement through eye contact and movement. Shirley spoke of choosing to use only a few songs per session with the intent of manipulating each one which was observed via name insertion, as opposed to the musical elements.

Ainsley

Context

Ainsley was a white, 39-year-old with 12 years of music therapy experience, was a Neurologic Music Therapy Fellow, and also worked in a CCRC. She defined sensory stimulation as "using music to incorporate visual, auditory, tactile stimulation." Ainsley provided a 40-minute music therapy session to a group of four residents. This session included an introductory song, three interventions with different instruments, and a closing song.

Participant characteristics

The music therapy participants were older adults, 86 to 99 years of age, living with dementia. All the group members arrived at the session in wheelchairs. Residents were selected to participate in the music therapy session based on their scores on the Brief Interview for Mental Status (BIMS) section of the Minimum Data Set (MDS) assessment. Ainsley shared that participants often appeared lethargic, showed little energy, and/or slept during the day, as they were "in the later stages of cognitive impairment." At the start of the session, two participants appeared awake as their eyes were open, but they sat quietly. One participant appeared asleep with her eyes closed and slouched posture, and one appeared especially alert and eager as she sat up straight and initiated dialogue about things and people in the immediate environment. Throughout the session, participants displayed increased alertness and engagement when Ainsley was in close proximity but otherwise reverted back to the state in which they arrived to the session.

Goal of sensory stimulation

Ainsley stated that the goal for the session was for each participant to maintain the cognitive function of periodic orientation—to "respond to something." Ainsley specified that the goal was for periodic orientation as opposed to maintenance of orientation over the entire length of the session.

Session outline

Sessions typically include six group members, in a private space, and are conducted during the morning, twice per week. Sessions comprise one sensory stimulation intervention that incorporates several songs.

Table 4. Ainsley Session Outline.

	Intervention	Description	Senses Stimulated	Length
1	Introduction Songs with Name Insertion	The MT provided each participant with a handheld percussive instrument. The MT played a lyrically modified version of "Good Morning" from "Singing in the Rain" on acoustic guitar during which the participants' names were inserted into the lyrics.	Auditory & Visual, Tactile for some	~6 min.
2	Light Picture with Singing & Prompted Play on the Q Chord	The MT presented a picture of a lamp and asked the participants to identify the object. After identifying the object, the MT played "This Little Light of Mine" on the Q Chord and prompted each participant individually to play on the strum pad, which was surrounded by lime green tape.	Auditory, Visual, & Tactile	~12.5 min.
3	Paddle Drum Playing with Singing & Marching	The MT played a paddle drum and sang "When the Saints Go Marching In." Each participant was prompted to hold the paddle drum handle while the MT played it, sang, and marched in place. For a sleeping participant, the MT played the paddle drum in close proximity to various locations around the participant's body while singing.	Auditory & Visual, Tactile for some, Vibrotactile for others	~6 min.
4	Cabasa Playing & Singing	The MT played the cabasa and sang "Down By the Riverside." The MT prompted/assisted each participant to hold the beads of the cabasa while it was played.	Auditory & Tactile	~8.5 min.
5	Closing Song	The MT sang and played parts of "Happy Trails" with accompaniment on a bell. Participants were given the opportunity to hold the bell while the MT struck it with a rhythm stick. For a sleeping participant, the MT played the bell in close proximity to various locations around the participant's body while singing.	Auditory & Tactile	~3.5 min.

Ways participants were engaged

Ainsley shared that as a neurological music therapist she utilized a modified version of a technique called Musical Sensory Orientation Training (MSOT), which encourages the use of instruments that require the participants to give "very little effort to have a sustaining sound." When deciding who to interact with first during each intervention, she chose to attend to whoever was reaching toward her or showing orientation in order to reinforce engagement. Ainsley started the session by providing participants with an instrument and then sang and played a lyrically modified version of "Good Morning" from "Singing in the Rain." She prompted a vocal response from each by creating breaks in the music. With the exception of an image presented at the start of the second intervention, the second, third, fourth, and fifth interventions all had the same engagement structure as Ainsley sang a song while playing a handheld instrument, providing each participant with an opportunity to play the instrument, along with other participation options. For one participant who often appeared asleep, Ainsley did not prompt instrument play. Instead, she played the instruments in close proximity to the participant's body while continuing to sing. Introducing different handheld instruments provided opportunities for tactile or vibrotactile stimulation. During each of the interventions, Ainsley stood within close proximity to each participant with her face or the instrument within the participant's visual field.

Characteristics of the music

Ainsley shared that she utilized familiar songs instead of preferred songs while keeping spiritual preferences of the individual group members in mind. Throughout the session the volume was consistently at a level of *forte* on the instruments played and via the speaker Ainsley wore to amplify her voice. All of the songs were presented at a bright tempo with the exception of the final song, which was moderately slow. At the start of the session, Ainsley utilized the song "Good Morning" from "Singing in the Rain'' as the song offered orientation to the time of day and orientation to those present in the space through name insertion. During the second intervention, Ainsley utilized the chord buttons on the Q Chord to play "This Little Light of Mine" with straight quarter notes, allowing structure for the participants to play the strum pad while Ainsley continued to sing and play. During the third, fourth, and fifth interventions, Ainsley played simple quarter note rhythms on the handheld instruments while singing.

Session benefits

Overall, Ainsley reported that the group members benefited from the session through the meaningfulness of the engagement they experienced in each intervention, including: waking up, singing, smiling, playing instruments, reaching out to hold hands, experiencing orientation to the musical space, and orientation to the music therapist or other group members through eye contact and visual tracking.

During the session, group members were observed responding to their name by looking toward Ainsley, and for the group member who often appeared asleep, Ainsley reported that she opened her eyes and engaged in visual tracking. For the participant who arrived especially alert and eager, she appeared calmer at times as she reduced her initiation of disruptive verbalizations throughout the session. All group members benefitted by receiving human touch that was not associated with ADL care, which Ainsley described as "more pleasurable" than physical care. Additionally, all group members were given the opportunity to engage in decision making and have their choices respected.

Summary

Ainsley's session involved a group of four residents living with late-stage dementia in a CCRC. The primary goal of the session was to maintain the cognitive function of periodic orientation. Interventions were very structured and included recreative and receptive music experiences, based on the NMT technique MSOT. Auditory, visual, tactile, and vibrotactile stimulation were provided, with the primary session benefit being periodic enhanced orientation and increased engagement.

Becky

Context

Becky was a white, 27-year-old with 4.5 years of experience as a music therapist and was employed as a music therapist for a private practice where the majority of her caseload was hospice patients. She defined sensory stimulation as "stimulation that can be used through different sensory modalities, including auditory, visual, tactile, proprioceptive, vestibular but in a manner that is structured by the [purposeful manipulation of the] elements of music." Becky provided a 35-minute music therapy session to a hospice patient residing in a CCRC. This session was divided into seven sections that included the use of foot tapping, drumming, vocalizing, verbalizing, and the guitalele to provide auditory stimulation.

Participant characteristics

The music therapy participant was an older adult in her late 80s, living with dementia. She was seated in her wheelchair for the session. The participant was described as restless, with "a lot of sensory needs present at the start of the session," seen through hand movements, back and forth head movements, and self-propelling her wheelchair. Becky shared that the participant appeared overstimulated as she closed her eyes to block out the environment. She also stated that the participant, as well as others with a dementia diagnosis, can "be very withdrawn or having difficulty communicating or having trouble positively interacting because they're agitated, or anxious due to most likely sensory dysregulation."

Goal of sensory stimulation

Becky described the goal of the session as meeting the participant's sensory needs and providing relief from discomfort. She specified that the initial goal for the session was to increase signs of sensory regulation and once that was achieved, the goal changed to increase social awareness as indicated by opening of the eyes and making eye contact. Once signs of awareness were observed, Becky was looking for the participant to respond to a verbal prompt or answer a question. Additionally, Becky attempted to help increase the participant's sensory tolerance to create greater internal organization and regulation, specifically when headed to a "more complex environment" after the session, such as the dining room.

Session outline

Sessions are provided in the participant's private room, once per week. Sessions comprise one sensory stimulation intervention that includes the use of one live song provided on several mediums.

Table 5. Becky Session Outline.

	Intervention	**Description**	**Senses Stimulated**	**Length**
1	Introduction Drumming with Vocalizing	The MT tapped a quarter note beat with her foot on the ground while playing a variety of rhythms on the frame drum. Later the MT vocalized held pitches before providing a sensory break.	Auditory	~6 min.
2	Drumming & Vocalizing a Song	The MT tapped her foot quietly and played the frame drum while steadily increasing the frequency of which the frame drum was played. Simultaneously, the MT slowly vocalized "Ain't She Sweet." A sensory break was provided afterwards.	Auditory	~3 min.
3	Drumming & Verbalizing a Song	The MT tapped her foot quietly and sang "Ain't She Sweet" *a cappella*. The frame drum was added later. The MT prompted vocal engagement once by pausing in the music. A sensory break was provided afterwards.	Auditory	~3 min.
4	Verbal Prompt	The MT said, "Good morning." Then a sensory break was provided.	Auditory	~1 min.
5	Guitalele	The MT played the guitalele starting with strumming a single note followed by rests, eventually building up to the use of three chords, up and down strums, muting, and an increase in tempo. There were two brief	Auditory	~7.5 min.

	Intervention	Description	Senses Stimulated	Length
		decreases in tempo and syncopation before returning to the peak tempo and complexity. The music concluded with a gradual ritardando. A sensory break was provided.		
6	Guitalele & Vocalizing a Song	The MT tapped her foot, slowly played the guitalele accompaniment to "Ain't She Sweet," and vocalized the song as well. The MT began adding muting to the accompaniment. Vocalization was prompted via a break in the music. The MT continued with the music on guitalele without vocalizations. A sensory break was provided afterward.	Auditory	~5 min.
7	Closing Guitalele & Vocalizing	The MT quietly tapped her foot and played the chords to "Ain't She Sweet" on guitalele with muting. The chords were changed from "Ain't She Sweet" to no longer align with an identifiable song and the MT vocalized held pitches in the key of the chords played. The tempo was reduced as the session came to a close.	Auditory	~2.5 min.

Ways participants were engaged

Becky reported trying different intensities of stimulation to determine what level of stimulation would best help meet the participant's sensory needs without causing overstimulation. Because the participant appeared dysregulated, Becky started with the lowest level of stimulation, on the frame drum, and steadily added complexity to the stimulation through subdivision and later syncopation as the participant displayed decreased dysregulation. Becky used very few words in the session due to the participant's dysregulation and described using verbal prompts to assess the participant's response. The participant did not open her eyes or respond in any overt way when Becky stated, "Good morning," which was interpreted as the participant was not "ready to verbally interact or even interact much at all." Becky was observed sitting in silence with the participant at the end of each section of the session, which she referred to as "sensory breaks." Sensory breaks were used to elicit awareness by introducing a novel stimulus, or the lack of music/sound. Becky gave the example of how one hears when the air conditioning turns on, but can become acclimated to its sound, and forget about its presence until it turns off, creating an awareness of the change. Becky also used sensory breaks to determine if what she did was helpful, harmful, or had a neutral effect. Becky reported that the final section of the session presented opportunities to increase sensory tolerance and prepare the participant for their next environment.

Characteristics of the music

Becky began the introductory section by tapping quarter notes with her foot and striking the frame drum on beat one in common time with sustained vocalizations added later. Gradually, these three sounds were modified, through intensification and addition, one by one, in order to increase the complexity of the music. The second section of the session started the same way as the first, with foot tapped quarter notes and the frame drum played on beat one. However, the vocalizations were a very slow rendition of "Ain't She Sweet." Again, complexity was intensified through more frequent strikes of the frame drum and eventually a swing feel. Becky began the third section by singing "Ain't She Sweet" *a cappella* at a grave tempo with plenty of space between notes. The frame drum was later

added with muting and vocal prompts were presented in the music via breaks in the song. The fifth section began with one note being strummed on the guitalele. The complexity was increased as the frequency of the strumming and number of notes were increased, as well as syncopation and foot tapping were added. The sixth section of the session began with foot tapping and the strumming of chords on the guitalele. Additional notes were added between the chords and "Ain't She Sweet" was vocalized. Muting was added to the vocalizations and the guitalele to increase the strength of the downbeats. During the seventh and final section of the session, the chords on the guitalele initially aligned with those of "Ain't She Sweet," but transitioned away from the song as sustained vocalizations were presented. Eventually the vocalizing ended, the tempo slowed, and the complexity of the guitalele's sound was reduced.

Session benefits

The participant displayed increased alertness, reduced restlessness, and increased responsiveness to direct verbal prompts. More specifically, Becky shared observing positive change as the participant displayed signs of sensory regulation including less engagement in self-stimulating behaviors, more sitting still, appearing relaxed, opening her eyes, and answering a closed-ended question. Becky reported that she has found that common symptoms of dementia, including withdrawal, difficulty communicating, agitation, and anxiety, often decrease when sensory needs are met.

Summary

Becky's session involved one participant living with dementia residing in a CCRC. The primary session goal was to increase signs of sensory regulation, with a secondary session goal being to increase sensory tolerance. Interventions were receptive, commonly involving detailed, sustained musical structures. Auditory stimulation addressed the primary session benefit of increasing sensory regulation. Only one song was provided during the 35-minute session, though the instrumentation and musical elements were modified throughout. A thorough and unique conceptualization of the sensory systems was provided and influenced clinical decision making. With the exception of one verbal greeting, no verbal or physical prompts were observed to encourage engagement, suggesting that the music is creating the change as opposed to the participant giving forth effort for beneficial change.

Discussion

These cases illustrate the wide range of ways in which sensory stimulation interventions are undertaken in clinical practice. While similar in their intention to provide forms of sensory stimulation, the approaches vary in the precision of their goals, the ways in which sensory stimulation is integrated in sessions, and the perceived benefits of sessions. In some cases, sensory stimulation was understood as musical or nonmusical activities that stimulate the senses, while in others it was understood as intentional increasing/decreasing of individual aspects and types of stimulation through manipulation of musical elements to meet sensory needs and achieve sensory regulation. These differences reflect differing levels of session organization and theoretical understanding of these interventions. These similarities and differences are discussed below.

Similarities

Primary goals

Overall, these music therapists shared a common goal of interventions being designed to elicit a response or promote engagement. For example, “opening of the eyes” or “eye contact” was often described as an objective or evidence of having met the goal.

Session structure

The sessions all occurred in a space that offered privacy, such as the participant’s room. The music therapists reported providing at least one sensory stimulation intervention weekly, although the timing of sessions varied across cases. The number of interventions per session were closely aligned, with Karen and Shirley having both provided six interventions, Ainsley five, and Becky seven.

Ways participants were engaged

Participants were engaged through several musical modalities, though voice (speaking and singing) and stringed instruments were present in all sessions. When participants were given opportunities to interact with an instrument, the music therapist, or a sensory tool this was brought to the participants individually, likely due to the physical abilities of the participants.

Characteristics of the music

Sessions overwhelmingly focused on receptive music therapy experiences provided by the music therapist. This primarily consisted of songs that were familiar to the participant or reported by family members as preferred by the participant.

Perceived benefits

All of the music therapists reported that the participants benefited from the session. Perceived benefits included increased alertness and increased engagement with the music therapist and/or music.

Differences

Primary goals

While there was a consensus among the music therapists that the goal for the intervention was to elicit a response or engagement from participants, Ainsley and Becky offered broader goals as well. Ainsley spoke of a broader goal as maintaining the cognitive function of orientation while Becky described a tiered structure of addressing sensory regulation prior to increasing awareness.

Session structure

Despite similarities in the number of interventions provided in each session, the length of each intervention varied greatly, from about one to 12.5 minutes. Shirley, Ainsley, and Karen provided sessions that were similar with regards to session opening and closing, and recognizable (i.e., unit like) interventions. Ainsley’s session was unique as the individual interventions were separated by the intentional use of silence. Ainsley’s interventions did not have typical intervention shape such as the start/end of a song, all participants having an opportunity to engage, or verbal cues. Shirley and Ainsley spoke of the challenge of

offering sensory stimulation interventions in groups when members of the group were more sensitive to overstimulation or understimulation, suggesting that sensory stimulation interventions may be more meaningfully tailored to individual sessions.

Ways participants were engaged

Both Ainsley and Becky provided the same opportunities for engagement in several interventions, whereas Karen and Shirley had different opportunities for engagement with each intervention. Raising further questions about whether more repetition or more variety is most effective in meeting participants' sensory needs.

Characteristics of the music

While all of the cases included auditory stimulation, Karen, Shirley and Ainsley offered interventions that included multiple types of stimulation (e.g., auditory and tactile), while Becky's interventions only offered one type (i.e., auditory). Becky's use of music was unlike the other music therapists, as she offered live music that did not resemble a song, and when she did introduce a song, only one was offered during the 35-minute session. Becky and Karen presented the idea of a lack of music (i.e., silence) during the intervention which raises questions about the role music plays as an agent of change in the intervention.

Perceived benefits

Similar benefits were reported across cases, though Ainsley and Becky offered greater specifics as Ainsley spoke about achieving "a balanced state" (e.g., not asleep, but not riled up), while Becky described achieving "a reduction in discomfort" as well as "increased tolerance of stimulation."

The Importance of a Theoretical Framework

Despite post-degree training providing a theoretical framework for Ainsley and Becky, Karen and Shirley tended to describe music therapy as an activity. Ainsley referenced a framework from a modified Neurologic Music Therapy technique which encourages the use of instruments that require minimal effort and reinforces engagement by attending to those initiating engagement. Becky described a framework which encourages trying different intensities of musical stimulation to determine what would best help meet the participant's sensory needs. A stronger theoretical foundation could increase the meaningfulness of the interventions by allowing music therapists to make more informed decisions when determining when/how to implement sensory stimulation interventions. A framework could also provide guidance on the depth/impact that sensory stimulation interventions provide and therefore a clearer understanding of the level of practice as defined by Bruscia (2014). When sensory stimulation interventions are provided as an activity, or at an auxiliary level, the perceived benefits appear to be limited to the session itself, whereas when provided at an augmentative level, the benefits have greater potential of a lasting impact on the participants' overall health (i.e., beyond the session). The lack of theoretical grounding also raises questions about the meaningfulness of receptive experiences, particularly those utilizing recorded music, which was characterized by Karen as background music.

By way of contrast, occupational therapists contextualize sensory stimulation theoretically in a variety of ways, one of which is the Snoezelen philosophy (Lape, 2009). Snoezelen encourages the use of environments that offer stimulation without requiring intellectual activity and without the goal of achievement. Occupational therapists also include both proprioceptive and vestibular stimulation in their literature, but neither were

observed in the case examples. Occupational therapists refer to the use of movement (e.g., rocking in a rocking chair) for vestibular stimulation, and changes in body positioning (e.g., sitting up in bed or readjusting the bed position) for proprioceptive stimulation (Lape, 2009; Tonelli, 2016). Utilizing a stronger theoretical framework could inform the decision-making process and even more importantly clarify the goal of implementing sensory stimulation interventions in music therapy.

Framing Sensory Stimulation

The variety of approaches to sensory stimulation undertaken by these music therapists suggests that sensory stimulation is not a single intervention type, but rather a range of approaches influenced by the music therapist's training, previous experience, and presenting needs of the participant(s). These music therapists tended to focus on increased alertness as the perceived benefit, but also spoke to the importance of maintaining orientation, improving sensory regulation, enhancing relaxation, and providing opportunities for meaningful touch. Of particular interest is the different use of the senses. Sensory stimulation was perceived as an intervention for stimulating, but instead can be used for calming as well. This aligns with previous reports suggesting the use of sensory stimulation interventions in response to agitation (Ridder, 2005).

Given the variety of sensory needs and presentations of participants in these cases, sensory stimulation may be most beneficial in individual sessions, at a frequency of at least weekly. Approaches primarily include auditory stimulation (e.g., singing with instrumental accompaniment), as well as opportunities for participants to engage in instrument play and/or engage with sensory tools offering secondary stimulation types. It is currently unclear what recommended amount of time is needed for greatest benefits but would likely best be determined on a case-by-case basis.

Though a variety of definitions were provided by the music therapists, based on these cases a possible definition for sensory stimulation in music therapy for folks living with dementia is provided: a range of approaches that including the use of music, sensory tools, and/or instruments for the purpose of stimulating senses to elicit enhanced or maintained areas of cognitive function including orientation, alertness, and sensory regulation.

Limitations

This study has a number of limitations that are important to acknowledge, particularly in reference to the continuing impact of COVID-19 and the lack of diversity among the music therapists who participated in this study. After the researcher obtained IRB approval for this study, CCRCs began restricting visitation policies due to an increased prevalence of the COVID-19 virus in the United States at that time. This significantly limited the ability of music therapists to participate in the study. Further, COVID-19 restrictions and the overall burden of care experienced by music therapists at the time decreased interest in participating. Given the limited availability of music therapists able to participate in the study, there was a parallel limit in the diversity of the music therapists who did participate. Given the burden experienced by music therapists at the time of data collection, the researcher made the choice not to contact the music therapists who participated in the study to ask for their feedback on their formulated case. While this was decided out of respect to study participants, it does limit the trustworthiness of the findings.

Implications for Future Research

Findings from this study suggest further research in this area. The sample size and limited diversity of this study suggest the need for a study with a larger sample size, that includes music therapists from diverse backgrounds, to create further understanding about the

characteristics of sensory stimulation interventions. The results revealed that a stronger focus is needed on explicating the theoretical framework of the music therapist to create greater meaning and clinical validity for the intervention. Finally, a prevalence study is important to ascertain the extent to which sensory stimulation interventions are part of the everyday practices of music therapists working with adults living with dementia.

Summary

Four music therapists, with clinical experience ranging from one to 13 years, were observed in one of their music therapy sessions and subsequently interviewed to examine the ways they approached sensory stimulation interventions. Findings from case analyses suggest that sensory stimulation is a range of approaches used to elicit engagement, varying in its implementation and inclusion of theoretical foundation, for increased alertness with the potential for improvement beyond sessions despite the degenerative nature of dementia. Findings warrant further examination of the nature of these interventions and the theoretical foundations that support their use.

About the Author

Shelby Shrader, MMT, MT-BC is a board-certified music therapist based in Richmond, Virginia. She currently works in hospice care and is an internship director. She holds her BM in music therapy from Radford University and MMT in music therapy from Shenandoah University. She is chair of the Virginia State Task Force for Music Therapy and the Mid-Atlantic Region (MAR) representative for the Reimbursement Committee of the American Music Therapy Association (AMTA).

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Appendix 1

Observational Data Intake Form

Name/Identifier:
Date:

Observational Notes

Observed goals of the session:
Specified or assumed:
Types of interventions utilized: improvisational_ receptive_ compositional_ recreative_

Descriptions and general times:

Intro:

1. What is the therapist/participant doing?
2. Describe the intervention:
3. What senses are being engaged?
4. How long is the intervention?
5. Where is the MT in relation to the participant?
6. How has the participant changed/benefitted?
7. What is the music doing?

Intervention 1:

1. What is the therapist/participant doing?
2. Describe the intervention:
3. What senses are being engaged?
4. How long is the intervention?
5. Where is the MT in relation to the participant?
6. How has the participant changed/benefitted?
7. What is the music doing?

Intervention 2:

1. What is the therapist/participant doing?
2. Describe the intervention:
3. What senses are being engaged?
4. How long is the intervention?
5. Where is the MT in relation to the participant?
6. How has the participant changed/benefitted?
7. What is the music doing?

Intervention 3:

1. What is the therapist/participant doing?
2. Describe the intervention:
3. What senses are being engaged?
4. How long is the intervention?
5. Where is the MT in relation to the participant?
6. How has the participant changed/benefitted?
7. What is the music doing?

Conclusion:

1. What is the therapist/participant doing?
2. Describe the intervention:
3. What senses are being engaged?
4. How long is the intervention?
5. Where is the MT in relation to the participant?
6. How has the participant changed/benefitted?
7. What is the music doing?

Researcher's perceived benefit of interventions:
End of session: Is the participant displaying any sensory seeking behaviors?
Explain:

Summary

I. Goals
II. Session Structure
III. Music
IV. Engagement
V. Materials
VI. Change/Benefit

Appendix 2

Interview Questions

Background Information
Name:
Date:
Age:
Address:
Location of Observation (type and address):
Gender:
Race:
Ethnicity:
Credentials:
CBMT #:
Years of Music Therapy Experience:
Degrees completed (or pursuing):
What population do you primarily work with?
What percentage of your participants have a formal diagnosis of dementia?
Do you know what stage of dementia the participant is at?

Interview Questions

1. In broad terms, tell me about the session.
    a. What were the goals for the session?
2. What led you to choose sensory stimulation as an intervention?
    a. What did you see in the participant that made you respond with sensory stimulation?
3. What are the most important parts of the intervention for you? How do you think about sensory stimulation interventions?
4. What senses did you intend to stimulate?
5. What do you perceive as the benefits for the participant from the sensory stimulation intervention(s)?
    a. How do you know the participant benefited?
6. How often do you use sensory stimulation interventions in your clinical practice with this population?
7. Are there any other key characteristics of sensory stimulation interventions when working with adults living with dementia that we did not observe in this session?
8. What is the purpose of sensory stimulation interventions in your practice?
9. Is there anything you would like another music therapist to know about sensory stimulation interventions? What's most important? When most indicated? How to shape a session?
10. In reference to the music, can you tell me how you thought about the music in today's session?
11. Now that we've discussed sensory stimulation. There's really no definition, would you like to give it a go?
12. Anything else you'd like to add or say?

[1] Clair and Memmott (2008) use the term “stimulation” without referring to sensory stimulation specifically.

[2] The exact title and link were unable to be provided, though Karen offered a similar selection: https://youtu.be/DXzk5i4Ofe8