
The effects of music therapy on engagement in family caregiver and care receiver couples with dementia

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Abstract

The purpose of this study was to examine the effects of caregiver-implemented music applications on engagement with their care receivers. Eight couples participated individually in a series of sessions, where a music therapist trained and cued the caregivers to implement a music application of choice. Changes in engagement frequency over a series of five sessions was highly statistically significant. The authors conclude that music therapy applications are effective in increasing mutual engagement in caregiving and care receiving couples with dementia, and that caregivers can effectively facilitate the engagement using music. Furthermore, once the engagement is established, it carries over into visitation without music.

Key words: caregivers, dementia, music therapy, spousal caregivers

Introduction

Clinical research studies of persons with dementia have developed and tested music therapy protocols for the care and palliative treatment of persons diagnosed with dementia, including Alzheimer's disease. These studies have shown positive effects of music therapy interventions to facilitate alert responses,¹ increase engagement through musical activities,²⁻⁶ and increase participation in an exercise regimen.⁷ Further studies have shown successful applications of music to calm agitation,⁸⁻¹¹ decrease wandering,^{12,13} and increase engagement with others.¹⁴⁻¹⁶ These studies, implemented by professionals, have made monumental contributions

to the quality of life for persons in the later stages of dementia. However, there is a need to develop interventions that are viable for family caregivers to use with their care receivers to provide accessibility to their care receivers' decreasing capacities to respond. The purpose of this study was to examine the feasibility and the effect of music applications, delivered by family and significant other caregivers, on mutual engagement between the caregivers and their care receivers in late-stage dementia during one-to-one meetings.

The caregiver participants in this study indicated a strong desire to maintain a relationship with their care receivers, but were severely limited by the changed behaviors of their loved ones. The literature indicates that behaviors of care receivers in late-stage dementia disturb the relationships with caregivers by disrupting the bonds of affection and reciprocity that are vital to the relationships.¹⁷ These behaviors contribute to caregivers' burdens, emotional reactions, and feelings of anxiety that further contribute to relationship deterioration.¹⁸ As caregivers experience their care receivers' functional decline, they become separated from the supportive relationships they once shared.¹⁹⁻²² Recent research has confirmed that relational deprivation is significantly higher in wives whose care receiver husbands have severe cognitive decline than in those whose care receivers have higher cognitive status.²³ Furthermore, research has shown that a close, loving, relationship of caregiver and care receiver correlates positively with caregivers' well-being.²⁴

Observations reveal that caregivers attempt to maintain relationships with their loved ones in progressive dementia and become increasingly disappointed and frustrated when their traditional attempts fail. Time together with care receivers becomes a challenge for endurance rather than an opportunity for satisfying reciprocity. Nonetheless, many caregivers persist in their

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efforts to engage with their care receivers, continue in their disappointments, and yearn for quality interactions that go beyond meeting the physical needs of their care receivers.

This study was designed to incorporate music applications as a means to re-establish relationship reciprocity through mutual engagement in meaningful activity. The study answered the following research questions:

1. Do music applications tailored to the preferences of the caregivers and their care receivers increase mutual engagement over time?
2. Does mutual engagement carry over from a series of music visits to a visit without music?
3. Can a caregiver with a nonmusical background learn to implement the music application?

Method

Subjects

Administrators of 10 residential care facilities with special care units and the executive director of the local chapter of the Alzheimer's Association in a Midwestern metropolitan area were contacted regarding the study. The administrators were asked to present an abstract of the study to family or close friend caregivers who regularly visited their late-stage care receivers and to request permission for the experimenter to contact those interested. Criteria for selection included couples in which (1) the care receiver's disease had progressed to an inability to communicate through conversation, (2) the caregiver had an interest in re-establishing some form of interaction with a loved one, and (3) the caregiver either lived with the care receiver or visited regularly (*e.g.*, several times each week). Twenty-two caregivers responded and 15 consented to participate in the project with their care receivers. Of these, eight couples completed the series of baseline, trial, five experimental, and return to baseline for a total of eight sessions. Persons decided not to participate or dropped out of the study for a variety of reasons, including illness and, in one case, the death of the care receiver.

Of the participants, three were husband caregivers, four were wife caregivers, and one was a female caregiver for a female friend. All participants ranged in age from 67 to 82 years with a mean age of 75.25 years for caregivers and a mean age of 75.75 years for care receivers.

Procedure

Eight couples, in which one member was a family or

friend caregiver and the other was the care receiver, participated individually in a series of eight 40-minute sessions, conducted by a music therapist. All sessions for each couple were held once weekly on the same day at the same time, and all sessions were videotaped for later analyses.

Sessions occurred at the care receiver's residence, either the couple's home or the visitation room in a special care unit. Participants were positioned in chairs, face to face, with a video camera placed from six to eight feet away. The camera was turned on while the music therapist prepared materials and carried on brief conversations before each session began. Both caregivers and receivers seemed unaffected by the presence of the camera.

The first session was a baseline in which the couple was asked to spend time alone together as they would in a usual visit. In the following trial session, the music therapist presented an array of music applications and supported caregivers' attempts to use them. These applications consisted of ballroom dancing, adapted chair dancing, singing, and playing rhythm instruments (*e.g.*, paddle drums, egg shakers, and timbali sticks). The caregivers were asked to give verbal feedback concerning their preferences for music selections and applications, and the couple was observed for participation levels across the array of applications.

By the conclusion of the trial session, the music therapist had incorporated information from verbal comments and observations of the couple's participation into a protocol design. This protocol included the couple's preferred music and the music application that facilitated the most active participation during the trial. When this protocol was described verbally to individual caregivers, they were asked to indicate whether they were comfortable with the design and were willing to try to carry it out. All caregivers indicated a strong interest in using the protocol in subsequent sessions.

The protocols included two with singing and six with dancing or dance adaptations. One caregiver for the singing couples was female and one was male. Of the dancing couples, two caregivers were male and four were female. No protocols included instrumental rhythm playing of any type, possibly because caregivers did not feel confident to facilitate rhythm participation with their respective care receivers.

After the trial session, the protocols specifically designed there were used by respective couples over a series of five experimental music sessions. No protocol changes were made at any time over the course of the five experimental music sessions. The couple's protocol was implemented by the music therapist in the first experimental session, and caregivers were invited to assume as much leadership as they desired in the second experimental music session. In session three, caregivers

were asked to provide leadership for the session and for the subsequent sessions. From music sessions three through five, all caregivers independently conducted the applications for their care receivers with minimal or no verbal cueing from the music therapist.

After the fifth music session, the couple was asked to do a second baseline session. For these individual couple sessions, the music therapist asked the caregivers to visit as usual with their care receivers for 30 minutes as she excused herself from the room. At the conclusion of the session, the music therapist thanked the couple for their participation and asked caregivers whether they felt comfortable and confident to continue the music protocol in subsequent visits with care receivers.

Protocol description

In the protocol, the caregiver initiated the application with a verbal request to the care receiver, (e.g., "Please dance with me" or "Please sing with me"). In dance applications, the caregiver then moved into position to dance as the music began and cued the care receiver by gestures and touch. In the singing protocols, the caregivers followed the request with singing using a very familiar song, such as "Home on the Range," and other familiar folk songs.

Six couples chose to dance. Three of the couples danced regularly as young adults and were successful with traditional dance steps, (e.g., the fox-trot and the two-step). Two other care receivers in the dance protocol couples were not ambulatory due to late-stage dementia and adaptations were required. The sixth dance protocol couple was comprised of two women friends. They also required dance adaptations.

In one nonambulatory dance adaptation, the care receiver was seated in a straight chair, and the caregiver maneuvered up close behind, seated in an armless roller chair. The caregiver placed his arms around his care receiver wife. She leaned back against him, and, with her head on his shoulder, he gently moved her from side to side in rhythm to the music.

In a second nonambulatory dance adaptation, the care receiver was seated in a geri chair. The wife caregiver, seated on a roller chair, positioned herself before her husband, removed his chair tray, and leaned him over onto a large pillow in her lap. There she held him, patted his back, and gently swayed him with the music. In another adaptation with this couple, the wife caregiver sat on a roller chair before her care receiver husband, who was seated in a geri chair with a tray. She held his hands and moved his hands and arms in rhythm with the music.

For the two women in a dance protocol, the care receiver stood and moved to the music in a form of spontaneous

interpretive dance, apparently derived from her youthful experiences in theatre. Her partner sat in a straight chair on the dance floor, made gestures, and changed her facial expressions in response to the music and her friend's dance movements.

Two singing protocol couples were comprised of spouses. The wife caregiver in the first couple modeled and cued the singing for her husband, while she accompanied them both on a guitar. She selected country and western songs that they had both performed together for many years. In the second singing couple, the care receiver wife was seated on a piano bench with her husband caregiver. He cued her to play through a repertoire of songs that she had learned in her early years as he sang them to her.

All recorded music for dancers was provided in a compact disk format by the music therapist and was played on a portable CD player. Music was selected from that which was popular in the participants' young adult years and was approved by them as preferred dance music. Information for personal purchase of specific CDs was made available to caregivers who requested it at the conclusion of their respective final sessions.

The eighth and final session was a return to baseline in which all music participation was withdrawn and couples were asked to participate in visitation. Following this session, the music therapists asked each caregiver whether he or she felt confident to carry on the applications independently. All replied that they were comfortable to carry on with the protocol they had use throughout the study.

Videotape analysis

An observer was trained to record engagement data. During training, the experimenter worked with the observer to identify engagement for each couple, since each couple had a typical array of engagement behaviors. For all couples, these behaviors included interactions between the caregiver and the care receiver, and were operationally defined as physical touch, conversation (whether or not it was verbally discernible), looking at one another, singing, vocalizing, or moving or dancing to music.

The observer analyzed all videotapes for each couple and recorded a + for every 10-second time interval in which the two members of the couple were engaged with one another. Engagement was operationally defined for each couple to include their behaviors within the context of their particular music applications and style of interaction. Frequency data for the number of 10-second, engagement intervals were counted for the baseline, trial, five experimental, and the return to baseline sessions. These engagements included (1) participation

Table 1. Time interval frequency scores for mutual engagement in participant couples

Couple	Baseline 1	Experimental Music Application Sessions					Baseline 2
		1	2	3	4	5	
1	72	46	80	67	75	78	84
2	25	77	62	86	61	90	46
3	14	10	7	2	40	35	33
4	16	60	59	66	89	87	19
5	10	90	90	90	90	90	27
6	43	22	89	80	71	87	62
7	15	16	32	58	53	79	76
8	88	85	90	89	90	89	88

together in the music application designed for the couple, (2) verbal or vocal interactions between the two members of the couple, and (3) physical touching.

Observer reliability

After training, the experimenter required the observer to take data for the first couple in the first experimental session. After a waiting period of four days, the observer was again required to take the same data for the first couple for experimental session one. Data were compared for the observer from the first to the second viewing. Reliability was calculated by subtracting the number of time intervals in which disagreements occurred from the number of time intervals in which there was agreements. This was divided by the total number of time intervals observed and yielded agreement of .97, which far exceeded the minimum requirement of .80. To check for observer drift, this procedure was repeated after three weeks with the videotape of a subject couple randomly selected from those available. The calculation for agreements and disagreements yielded a coefficient of .96, which indicated the observer maintained strong reliability.

Results and discussion

To determine whether a music application tailored to the preference of the individual caregiver and care receiver increased mutual engagement visits over time, a

univariate analysis of variance was calculated over five experimental sessions. The analysis yielded $F = 4.57$, $p = .006$, which was highly statistically significant. Mean scores in Table 1 show linear increases in mutual engagement frequencies from the first to the fifth music application session.

To determine whether the music applications had a significant effect on nonmusic visits, a two-tailed t-test was calculated between engagement scores for baseline one and baseline two. This result was highly statistically significant at $t = 2.88$, $p = .024$. Mean scores in Table 1 show increases from the first to the second baseline sessions.

It is likely that the music provided a familiar structure for couples that allowed care receivers to reciprocate in engagement with their caregivers. It is possible that once the engagement was established with music, care receivers had re-established sufficient behavioral patterns to maintain their responses to caregivers in one follow-up session with no music. The potential to carry over into sessions beyond the one nonmusic session used in this study is unknown.

In the music sessions, observations revealed clearly that caregivers learned quickly the approaches and implemented them without assistance early in the series of session. Caregivers assumed most of the cueing for the care receivers' engagement early in the second music session. By the third music session, they were completely independent in their abilities to engage their care receivers with them in music participation.

Caregivers were asked at the conclusion of the last music session whether they had confidence to implement the music application alone. Without exception, all caregivers replied that they felt very comfortable and confident, and that they planned to continue to use the music protocol in the future to continue mutual engagement with their care receivers. They also said they liked the music participation very much, and they thought it added quality to the time they had with their care receivers.

Conclusion

This study was limited by a small subject sample, and generalizations thus are guarded. However, the study indicates that mutual engagement between caregivers and care receivers increases with music applications, and this engagement continues to increase over a series of sessions. Furthermore, these increases in engagement can carry over into a nonmusic visit.

This study shows that caregivers have abilities for quickly learning musical approaches to engagement that use familiar music in familiar contexts, such as singing or dancing. These caregivers were very successful, even though they had no previous musical training or background. The applications are sufficiently simple that caregivers felt confident to implement them on their own. It is possible that caregivers can use music to facilitate engagement in meetings or visits with their care receivers to maintain relationships well into the care receivers' functional decline.

Though this study provides data that show increases in mutual engagement in caregiver and care receiver couples, additional research is required with a larger population sample for fully establishing the effects of music on relationship reciprocity in late-stage dementia. In addition, further research is necessary to determine the effects of increased engagement on caregivers' relationship satisfaction, and the influence of relationship engagement on caregivers' well-being.

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