The Effect of Reminiscence Music Therapy Sessions on Changes in Depressive Symptoms in Elderly Persons with Dementia

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This study examined the effectiveness of reminiscence focused music therapy treatment on depressive symptoms in elderly people with dementia. Twenty elderly (3 male & 17 female) who were diagnosed as having dementia and residing at 2 different residential care facilities in Florida were assigned to 1 of 4 small groups. Each of the participants served as his or her own control in an O1 O2 X O3 design. The depressive symptoms were measured using Cornell Scale for Depression in Dementia. *The differences between the scores of pretest, posttest 1 after a week of 5-day no treatment, and posttest 2 after a week of 5-day reminiscence focused music therapy treatment were compared. A one-way analysis of variance (ANOVA) and Newman-Keuls Multiple Comparison Procedure indicated statistically significant differences between pretest and posttest 2 as well as posttest 1 and posttest 2, while no significant differences were found between pretest and posttest 1. Results indicated that participation in small group reminiscence focused music therapy groups might help to reduce depressive symptoms in elderly people with dementia. Results of behavioral observations and future implications are also discussed.*

The number of older adults in the United States is growing rapidly, and is expected to continue to grow (Treas & Longino, 1997) due to the prolongation of life expectancy that has resulted from medical and technological advances (Hooyman & Kiyak, 1996). As people live longer, they face more problems related to ag-

ing such as cognitive deterioration and social isolation. The prevalence rate for dementia increases with age. It is reported that about 50% of the population 85 years of age and older have some type of dementia (Alzheimer's Association, 1996) and over four million older Americans are affected by this disease (Institute for Brain Aging and Dementia, 1999).

Depression is also a frequently occurring diagnosis among elderly people (Gurland & Cross, 1982) and often comorbid with dementia. The prevalence rate of depressive disorder was found to be 20 to 30% among patients with Alzheimer's disease in one study (Wragg & Jeste, 1989) and 24% in patients with dementia in another study (Cohen et al., 1993). Higher prevalence rates of depression were found in people with dementia than in people without dementia (Forsell et al., 1997; Lobo, Saz, Marcos, Dia, & De-la-Camara, 1995).

Possible consequences of the coexistence of depression and dementia are higher rates of institutionalization (Folstein, 1994), mortality (Arve, Lehtonen, & Tilvis, 1998; Folstein, 1994), impairment in activity of daily living (Monini, Tognetti, Sergio, & Bartorelli, 1998), aggression (Lykestos et al., 1999) and psychological distress in the patients themselves as well as in their caregivers (Brodaty & Luscombe, 1998). Since depression is a treatable disease while there is no cure for dementia (Reifler, Larson, Teri, & Poulsen, 1986), it is essential to find effective treatment for the depressive symptoms.

Many recent studies address the importance of developing tools for accurate and comprehensive assessment of depression in older adults (Abrams & Alexopoulos, 1994; Meyers & Bruce, 1998; Teri & Wagner, 1991). However, it is very difficult to accurately diagnose depression in elderly persons with dementia because of their impaired ability to express their moods and inner feelings (Abrams & Alexopoulos, 1994). In addition, many depressive symptoms such as weight loss, insomnia, and fatigue overlap with the signs of dementia (Miller, 1980). Although there is no perfect tool available, it was concluded in one study (Sunderland et al., 1988) that a combination of interview with the patients and direct observation might currently be the most accurate way to screen for depression in people with dementia.

Various studies indicate that elderly people with dementia respond remarkably well to music intervention compared to other

means of intervention. It has been documented that the ability to respond to music is often retained in people with dementia even after other cognitive abilities have deteriorated (Beatty et al., 1994; Crystal, Grober, & Masur, 1989). Music therapy is frequently used to treat people with dementia to increase motivation, self-expression, and communication (Bright, 1981), evoke memories and feelings, provide a sense of accomplishment, bring comfort (Smith, 1990), increase social interaction and physical movement, and to treat short-term memory (Hennessey, 1986). In older adults with dementia, music is also used to reduce behaviors related to depression, such as agitation (Brotons & Pickett-Cooper, 1996; Clair and Bernstein, 1994; Clark, Lipe, & Bilbrey, 1998; Gerdner & Swanson, 1993) and disruptive vocalization (Casby & Holm, 1994). The effectiveness of music therapy in treating depressive symptoms of elderly people without dementia has been documented (Hanser, 1990), but there seem to be no widely known studies that focus on such therapy for elderly people who suffer from dementia.

The most common treatment strategy for depression in people with dementia is pharmacological intervention (Harris, Gierz, & Lohr, 1989). Studies that look at nonpharmacological approaches indicate that it is important to increase active group participation, especially by creating new groups through which individuals can meet their affiliation needs in the current stage of life (Lowy, 1962; Ward, 1979), and pleasant activities (Teri, 1994) to minimize the depressive symptoms in elderly with dementia. Participating in a reminiscence group has also been found to be a very effective non-pharmacologic approach to treating depressive symptoms among older adults with dementia (Butler, 1961; Goldwasser, Auerbach, & Harkins, 1987). One study in music therapy found that patients with Alzheimer's disease recalled personal histories better in music oriented sessions (Lord & Garner, 1993). Another study found an increase in conversational fluency among the patients who reminisced during music sessions (Pollack & Namazi, 1992). The purpose of this study is to investigate the effectiveness of reminiscence groups in a music therapy setting in alleviating depressive symptoms in elderly people with dementia, specifically by looking at scores on the *Cornell Scale for Depression in Dementia* (Alexopoulos, Abrams, Young, & Shamoian, 1988), drumming patterns at the beginning and end of each session, and behavioral characteristics of participants during the sessions. It was theorized that changes in

depression level might be reflected in interaction patterns during music therapy sessions.

Method

Participants and Setting

The participants in this study were 20 residents in two Florida residential care facilities for older adults. All participants were diagnosed as having dementia of some type prior to their participation in the study and were able to express their feelings either verbally or nonverbally. A diagnosis of depression or mood disorder was not included among the criteria because each participant served as his or her own control, and the study focused on looking at changes in the depressive levels and not on curing the depression. There were 3 males and 17 females in the sample. The ages of the participants ranged from 73 to 94, with an average age of 86.2. The length of stay at the current facilities ranged from 3 months to 33 months, with an average of 23.29 months. Seventeen participants were taking antidepressant, antianxiety, and/or mood stabilizing medication at the time the study was conducted. Three of the participants had been diagnosed with depression, and three had been diagnosed with anxiety disorder.

Two groups were held in enclosed living rooms, and the other two groups were held in an open common area at the end of a hallway. All locations had several windows, and the participants were able to look outside while talking about the weather or season. The participants were seated in a semicircle facing the therapist, facing away from the entrances to minimize possible distractions from unexpected visitors. The participants were always asked to choose their own seats or asked if they liked the position they were being placed in.

Materials

The materials used in the music therapy sessions were one classical acoustic guitar, one small African drum, and a collection of songs from the period between the 1890s and 1930s. A video camcorder, Canon ES900, on a tripod, was placed behind the therapist to record the facial expressions and behaviors of the participants in each session. Informed consent forms were sent out to the families of the participants to obtain written permissions. Copies of the *Cor-*

nell Scale for Depression in Dementia were distributed to staff members at each facility to gather weekly data on the depressive symptoms of each subject. Data collection sheets with an operational definition and a stopwatch were also used to observe behaviors and collect data from videotapes.

Procedure

The 20 participants were divided into four small groups according to the locations at which they resided. All groups were treated identically and combined for data analysis with each subject serving as his/her own control. Each group participated in a 3-week study period. Two groups started at the same time, and the other two groups started on the first day of the second week of the first two groups. During these 3-week periods, the Cornell Scale for Depression in Dementia (Alexopoulos et al., 1988) was used to measure the changes in depression levels of each participant on a weekly basis. The activity staff members were given blank forms at the beginning of every week and asked to interact socially with each participant daily for at least 5 minutes. The time of daily interaction was not specified. At the end of each week, the activity staff interviewed nursing staff members who primarily took care of each participant and filled in the scales based on their own observations and interactions with the participants, and interviews with the nurses. The design used in this study was O1 O2 X O3.

At the end of the first week (O1), the pretest period, the music therapist collected the depression scale forms that had been filled in by activity staff members and passed out blank forms to be used in the following weeks so that the raters were not able to refer back to the data of the previous week. The music therapist did not come in contact with any of the participants during his period.

Data were collected in the same manner at the end of the second week (O2). This period served as the no treatment phase.

The participants attended five daily reminiscence focused music therapy sessions during the third week (X). In developing the structure of this study, it was decided that providing daily music therapy sessions would be more effective than less frequent sessions for participants with dementia. Because of the nature of the disease, it is important to give consistency to their daily lives. Also, daily intensive intervention seemed to be more appropriate for

treatment of depressive symptoms. All sessions were videotaped for subsequent analysis. The length of sessions ranged from 38 to 45 minutes, and the average was 42.95 minutes. The number of participants in each session ranged from four to seven people, including visitors who wandered into the groups. The average number of participants of all sessions was 4.8.

Each session started with a drumming activity, in which the therapist asked one participant at a time to play the drum that the therapist was holding. This activity allowed the therapist to greet and converse with each participant individually and to provide personal attention, as well as to assess the mood of each participant at the beginning of the session. The opening songs followed the drumming activity. The same songs were used in every session to provide consistency of structure.

The main part of each session was focused on reminiscence. The topics of reminiscence varied from day to day (home, nature/outdoors, events/hobbies, travel/places, and love songs). In this part of the session, the therapist sang familiar songs that were related to the theme of the day, accompanied by the guitar. Then the therapist repeated parts of the lyrics and asked related questions directed to each participant. Songs used in reminiscence were chosen so that most participants were familiar with their tunes and lyrics to help participants more easily understand the topics of discussion. Even though a particular theme was prepared for each session, topics changed frequently as participants brought up or showed interest in different topics.

Each session ended with a drumming activity that was similar to the opening activity. Participants were again given individual attention and the chance to express anything they wanted to the therapist. This activity also allowed the therapist to evaluate whether participants' moods or manner of drumming had changed since the beginning of the session.

The Cornell Scale for Depression in Dementia was filled out by activity staff members at the end of the treatment week (O3) in the same manner as in the previous two weeks. It was not specified that the evaluators should interact with participants either before or after music therapy sessions; they were told that they were free to do so at any time of the day, to monitor the overall changes in mood and behaviors throughout the week.

Table 1

Analysis of Variance for Mean Scores of Cornell Scale for Depression in Dementia

Source	SS	df	MS	F
Between	168.93	2	84.47	3.77
Within	1281.25	57	22.48	/
Total	1450.18	59	/	/

Results

Cornell Scale for Depression in Dementia

The completed Cornell Scale for Depression in Dementia forms were collected at the end of each week. The interrater reliability ($kw = 0.67$) and concurrent validity of this scale compared to two other scales (Research Diagnostic Criteria, $rs = 0.83$, $p < .001$; Hamilton Depression Rating Scale, $rs = 0.54$, $p < .01$) were tested and documented in the study entitled *Cornell Scale for Depression in Dementia* (Alexopoulos et al., 1988). The possible scores range from 0 to 38, with lower scores indicating less depression. Only the participants who attended at least four sessions out of the five provided were included in statistical analysis. The total number of participants who were included in statistical analysis was 20. Ten of the participants attended four sessions, and the others attended five sessions. A one-way analysis of variance (ANOVA), F test, was used as the statistical method to test the significance of the difference between the obtained results (see Table 1).

The obtained F value (3.77) was larger than the F critical value (3.23) for df 2, 57, $p < .05$; therefore, it was determined that there was a significant difference between groups. A Newman-Keuls Multiple Comparison Procedure was used in order to determine between which weeks the significant differences were found (see Table 2). Values used for this test were $df = 57$, $\alpha = .05$, and critical values 3.032 (two-step) and 3.646 (three-step). Obtained values were .3 (between O1 and O2), 3.4 (between O1 and O3), and 3.7 (between O2 and O3). Significant differences were found between pretest and posttest 2 (baseline and treatment), and between posttest 1 and posttest 2 (control and treatment). There were no significant differences between pretest and posttest 1 (baseline and control condition).

TABLE 2

Comparison of Mean Scores between the Three Tests Using Newman-Keuls Multiple Comparison Procedure

Tests	Posttest 2 O3	Pretest O1	Posttest 1 O2
Mean	2.85	6.25	6.55

Note. Underline indicates no significant difference.

Behavioral Observation

Videotapes of all sessions were later analyzed using data collection sheets. The purpose of this observation was to examine the levels and characteristics of participation in each group and also to see if there were any changes in participation as the treatment week progressed. Each participant was observed every 2.5 minutes for 30 seconds. Observed behaviors included positive affect, on-task, active participation, and passive participation. The percentage of participation levels was calculated. A reliability check (total agree/total agree + total disagree; Madsen & Madsen, 1983, p. 252) was performed between two observers and was .87. The reliability rate was low because it was difficult to see the facial expression of participants in the videotape. The interobserver reliability was .92 when the category of positive affect was excluded from calculation.

The collected data shows high participation levels in one group compared to the other three, and this resulted in different types of intervention techniques being implemented by the therapist. The data also shows that the active participation level increased while passive participation level decreased as the week progressed in three out of four groups. No changes were seen in the group with higher functioning participants because their participation levels were already high to start with.

Drumming

A videotape of all segments of drumming activities was prepared to see if there were any differences in how participants played the drum at the beginning and end of sessions. Activities were recorded in random order so that the evaluator did not know whether a clip was from the beginning or the end of a session. The evaluator rated the perceived mood of participants' drumming on

the scale of 1 (sad) to 9 (happy). An interobserver reliability check was performed between the evaluator and the therapist and was .88. The data were used only if the participant was present for both beginning and ending drum activities of the session. Seventy-six sets of data were available for statistical analysis using the Mann-Whitney U Test. The following hypotheses were established:

H0: Both pre and postsession drumming are equal
H1: Pre and postsession drumming are not equal

The U value for presession activities was 255, and that for post-session activities was 145. A one-tailed critical value of $U = 138$ ($\alpha = .05$, n1 = 20, n2 = 20) was obtained from the Mann-Whitney U Table. The smaller obtained U value (145) was larger than the critical value; therefore, the test failed to reject H0. Even though a statistically significant difference was not found from the collected data, the obtained U value was close to the critical value for U, and some improvement of mood could be seen in the average of the rating scores. The average score for presession drumming was 6.29 and for post-session was 6.76.

Discussion

The results of this study showed significant decrease in the depressive symptoms of participants after they received 5 days of reminiscence focused music therapy treatment. The music therapy technique employed, reminiscing through the use of familiar songs in a small group, was found to be effective in treating depressive symptoms in elderly people with dementia.

Staff members of each facility reported that the mood and interaction skills of participants during and right after music therapy sessions improved dramatically. However, several staff members also reported that participants' improved moods were not retained long after the sessions, and the staff who rated the depression scales thought that no significant changes would be seen in scores after the treatment period. A significant difference was documented through statistical analysis despite raters' perceptions. This points out the importance of keeping records to evaluate the progress of patients, residents, or students because not all progress can be seen clearly or easily without documentation.

Although the time of observations and interactions by activity and nursing staff members who rated the depression scales was not

specified, most interactions did not occur right after music therapy sessions. The significant decrease in scores shows that improved symptoms might have been retained right after the sessions and also throughout the day and the week of the observation period. The most dramatic improvement in scores was seen among five participants who scored 10 or higher in the pretest. The highest score given in the after treatment period was 9.

The results of behavioral observation show high participation levels in one group compared to the other three groups, an indication of higher functional levels for the participants in this group. This difference in the functioning level led to different types of intervention techniques being implemented by the therapist. Even though there were some differences in functional levels of participants between groups, the basic discussion topics that seemed to . catch the interest of participants at any functioning level remained generally the same in every group. Other results from behavioral observation indicate that the active participation level increased and passive participation level decreased as the treatment week progressed; this implies the possibility of maximizing the effectiveness of treatment by extending the treatment period.

Even though no significant difference between the perceived mood of drumming activities before and after sessions was found, some improvement of mood was noted in the close values of obtained and critical U values in the statistical test. A possible reason for not being able to obtain a significant difference might be that a number of participants were generally happy after one or two sessions and reacted with anticipation when everybody was being gathered into the room where sessions occurred. The observation of one activity staff member indicated that the participants who usually did not verbalize very much seemed to express more by drumming louder and longer.

One of the most difficult aspects of this study was choosing the tool to be used to evaluate depression The *Cornell Scale for Depression in Dementia* was chosen after a careful review of published literature discussing various assessment scales. Some researchers argue that it is impossible to evaluate depressive symptoms in people with dementia accurately because of their impaired ability to think and communicate (Abrams & Alexopoulos, 1994). The activity staff members who rated the scales expressed uncertainty about this tool at the beginning of the study. However, when they were asked

about the scale again after all completed forms had been collected, they all stated that they felt confident about accuracy of the ratings, indicating that the scale was useful in investigating changes in observable symptoms.

Many other confounding variables could have influenced the results of this study such as weather, participants' state of health, and change of medication. These findings should be further investigated with a larger number of subjects in order to generalize results. It would be helpful to conduct a similar study with elderly people who reside in the community and do not often come in contact with other people of their age. It would also be interesting to investigate the differences in the effectiveness of music therapy treatments for subjects at different functioning levels. A much larger population sample would be needed to achieve this result. A study using groups of various sizes might also be useful to find out what group size would be the most effective in treating depression in people with dementia.

The reminiscence focused music therapy sessions provided participants a safe place to interact socially, to share their memories with other residents, and to improve self-image. Use of music helped to evoke meaningful interactions between the therapist and participants and also among the participants themselves. More study in music therapy for this population is needed to search for more effective intervention techniques. As the number of elderly people in the population grows and more health care professionals come to realize the importance of treating depression in people with dementia, music therapy could play an important role in providing a nonpharmacological approach to treatment.

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