

Familiar group singing: Addressing mood and social behaviour of residents with dementia displaying sundowning

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Abstract

This study examines the effects of a Music Therapy (MT) intervention adopting familiar group singing during sundowning, a period of disorientation and/or agitation in the evening hours (Cohen-Mansfield, Garfinkel, & Lipson, 2000), to address the negative mood and non-social behaviour observed in residents diagnosed with dementia. A music therapist, over four consecutive days in the late afternoon, engaged four female residents with dementia, aged 80 to 97, in a small-group singing MT session. Two observers, using a mood-behavioural checklist, assessed the residents, (a) during a 15-min pre-test session, (b) a 30-min MT session, and (c) a 15-min post-test session. Data analysis reflected a marked improvement in mood and social behaviour and a significant decrease in non-social behaviour. The study outcomes demonstrate that familiar group singing positively affects the mood and social behaviour of residents with dementia experiencing sundowning, affirming the valuable role music therapists play in facilitating quality aged care.

Keywords: sundowning, dementia, group singing, mood and social behaviour, personhood

Introduction

Sundowning is a term used to describe symptoms of increased arousal or impairment during the late afternoon and evening hours, that occur in people with dementia (Dewing, 2003; Rindlisbacher & Hopkins, 1992; Volicer, Harper, Manning, Goldstein &, Satlin, 2001). Observed since the time of Hippocrates (Bliwise, 1994), the sundowning phenomenon is not experienced by all people with dementia nor is it unique to this population but might “develop in any older person with organic brain impairment or

functional mental illness” (Dewing, 2003, p. 28). Sundowning warrants consideration in aged care planning (Lott & Klein, 2003), as approximately 29 million people have been diagnosed with dementia worldwide (WHO, 1997), and sundowning affects 10-25% of those with moderate to severe dementia in residential aged care (Satlin, Harper, Rheaume, & Volicer, 2003).

According to DMS-IV-TR (American Psychiatric Association, 2000), dementia embodies a progressive, cognitive decline resulting from the physiological effects of a general medical condition, substance abuse, or multiple illnesses. Reisberg (1983) described dementia in seven stages, from early confusional to late stage loss of verbal and psychomotor skills, utilising a global deterioration scale (GDS). Psychosocial needs evidenced with dementia relate to: (a) anxiety, fear, paranoia, and depression, (b) isolation and lack of cognitive and social awareness, and (c) agitated, aggressive, and/or wandering behaviours (Algase, et al., 1996; Bright, 1988). These problems are exacerbated when people with dementia experience sundowning (Cohen-Mansfield, Garfinkel, & Lipson, 2000; Dewing, 2003; Rindlisbacher, & Hopkins, 1992).

“Mediating the effects of sundowning with music can be particularly positive” according to Tomaino (2002, p. 2), a music therapist who described the playing of familiar music in the afternoon before sundowning began to avert agitated behaviours associated with the phenomenon. Whitcomb (1994) also discussed group singing in a “therapeutic milieu” (Whitcomb, 1994, p. 60), or a secure and peaceful social setting, to ameliorate sundowning and facilitate positive social interaction and wellbeing. Both interventions support Kitwood’s (1997) concept of personhood, which emphasised “the importance of human interaction as a determinant of psychological functioning” (Sherratt, Thornton, & Hatton, 2004, p. 10) and focused on facilitating overt social and wellbeing responses (Kitwood, 1997). Similarly, the purpose of the current study was to explore the efficacy of the music therapy intervention of familiar group singing to address adverse mood and social behaviours in residents with dementia experiencing sundowning.

Literature Review

Sundowning

The appearance and underlying aetiologies of sundowning do not present as a clear clinical picture (Satlin et al., 2003), hence the phenomenon is shrouded in controversy (Dewing, 2003; Lott & Klein, 2003; Rindlisbacher & Hopkins, 1992). Sundowning refers to the behavioural disturbances and/or confusion

that manifest initially or are worsened with the afternoon and/or evening hours (Burney-Puckett, 1996; Burns & Hope, 1997; Cohen-Mansfield et al., 2000; Volicer et al., 2001). Symptoms specifically linked to this phenomenon include increased disorientation and confusion, wandering, hyperactivity, restlessness, aggressive behaviour, and anxiety (Burney-Puckett, 1996; Rindlisbacher & Hopkins, 1992). The existence of sundowning is supported by reports of increased agitated¹ and confused states in the evening in 12 out of 52 nursing home residents in one study (Drake, Drake, & Curwen, 1997), and in 11 out of 25 patients with Alzheimer's disease in another (Volicer et al., 2001). In contrast, Rindlisbacher and Hopkins (1992) did not find supportive evidence for sundowning among people with Alzheimer's disease.

Sundowning is associated with (a) "a phase delay of body temperature" (Volicer et al., 2001, p. 704), in conjunction with the disruption of circadian rhythm (caused by Alzheimer's disease); (b) negatively altered perception of light (associated with normal aging), which may counteract the release of melatonin potentially needed to prevent sundowning (Bliwise, 1994; Cohen-Mansfield et al., 2000; Norton, 1991), and (c) brain hypoxia (associated with cardiovascular or pulmonary disorders, dehydration, or medication), sensory overload or deprivation, relocation stress, fear, and "spontaneous and induced awakenings from sleep" (Bliwise, 1994, p. 1011; Burns & Hope, 1997; Burnside, 1988).

Social isolation and the evening darkness may also precipitate sundowning behaviours and reflect unmet or unexpressed needs (Dewing, 2003; Gwyther, 1985; Taira, 1986). Sundowning may be abated by carefully assessing new admissions to aged care facilities, providing orientation cues, minimal relocation within a facility, maintaining daytime structure and outdoor exercise, turning lights on before it gets dark outside, offering soft music and social stimulation in the late afternoon (Burney-Puckett, 1996; Dewing, 2003; Evans, 1987; Gwyther, 1985; Lott & Klein, 2003; Weiner, 1991), and by utilising the psychotherapeutic approach of reminiscence (Lott & Klein, 2003). Dewing (2003) emphasised a "person-centred assessment framework" (p. 31), underpinned by personhood (Kitwood, 1997), to detail

¹ Many of these behaviours may be categorised as agitation (Cohen-Mansfield et al., 2000). Agitation is defined as "inappropriate verbal, vocal, or motor activity that is not explained by needs or confusion per se" (Cohen-Mansfield, 1986, p. 712). However, sundowning includes the heightened confusion/disorientation observed in the evening hours (Cohen-Mansfield et al., 2000), which may or may not manifest in specific agitation behaviours. This study will focus on sundowning, with an understanding that many agitated behaviours are components of the phenomenon.

individual precipitators of sundowning and better understand unmet and/or unexpressed needs.

Music Therapy Literature

Music therapy may address psychosocial (Aldridge, 2000) and cognitive losses (Taylor, 1997) in those with dementia by prompting “the use of alternative processing circuits in the brain” (Taylor, 1997, p. 47) and providing access to long-term memory storage (Heal & Wigram, 1993). Broton’s (2000) meta-analysis of 38 clinical empirical music therapy studies supported the effectiveness of varied music therapy interventions in people with dementia. Live, structured music, in individual or small group (three to five people) sessions was seen to be most efficacious in enhancing participation and social/emotional skills, stimulating recall and language skills, and decreasing behavioural problems in residents with dementia, particularly when the music therapist, or a higher functioning peer, models appropriate responses (Broton, 2000). Sherratt, Thornton, and Hatton (2004) also reviewed empirical studies utilising music activities/interventions with people with dementia and cited the theory of personhood (Kitwood, 1997) as a framework for future music therapy research. The shared focus of “interpersonal processes, engagement and well-being”, within the personhood and music therapy philosophy, could facilitate the exploration of how individual variables effect musical responses (Sherratt et al., 2004, p. 11).

Music therapy interventions addressing mood or behavioural aspects of sundowning in residents with dementia have scarcely been cited in the literature, perhaps due to the unclear clinical picture the phenomenon represents and the difficulty in assessing many mood and behaviour aspects objectively (Sherratt et al., 2004). Sundowning has been described in part as a response to “unmet expectations of familiarity” (Tomaino, 2002, p. 2) in the late afternoon and early evening, and it was also suggested that the fear, agitation, restlessness, persistent questioning, shortened attention span, and aggressive behaviour connected with sundowning may be “manifestations of deep longings and attempts to be back home again with mother” (Whitcomb, 1994, p. 65).

The aforementioned expectations may be addressed through the repeated singing of a resident’s favourite song to promote “a pattern of predictability” (Tomaino, 2002, p. 2), as well as with familiar group singing utilising sedentary music in a secure and peaceful social setting (Whitcomb, 1994). Often slow, soothing waltzes and songs with a home, evening or spiritual connection, particularly those from the residents’ childhood and

early adulthood, provide “qualities the residents are searching for: safety, reassurance, affection, relaxation, a sense of belonging...simulating all the comforts of the old home at twilight” (Whitcomb, 1994, p. 70). The music therapist should observe the existing affect of the group/individuals and then interact with familiar selections, using variance in words, tempo, volume, emphasis, and interval to address needs and promote a positive and uplifting atmosphere within the sundowning group (Whitcomb, 1994).

Singing is a useful music therapy intervention with residents with dementia because the human voice has a deep inducing and reverberating power within people (Gaston, 1968) and can be a connecting point between individuals (Clair, 2000). The process of deep breathing inherent in the phraseology of singing also promotes oxygenation and physical relaxation whilst enhancing mood, thus facilitating positive related behavioural outcomes (Clair, 2000). Particularly when we sing, “the words, emotions and situations can be recalled” (Aldridge, 2000, p. 9), so that even during the middle stages of dementia, when cognitive decline affects conversational interaction, singing familiar songs with a group often provides structured participation and the best sense of community they may be capable of experiencing (Brooker, 1999; Clair, 2000). Familiarity with a resident’s specific preferences, inclusive of song titles, performers, vocal, or instrumental music, is vital for success (Clair, 1996a), promoting communication, reminiscence, relaxation, and the expression of feelings in a non-direct manner (Bright, 1988; Tomaino, 1994; 2002).

Similarly, Pollack and Namazi (1992) noted a 24% increase in social behaviours, such as talking, vocalising, gesturing, smiling, touching, humming, singing, and whistling when pre-post-test scores were compared in eight residents with dementia after implementing preferred musical activities, inclusive of singing. Wandering behaviour decreased significantly in varied music activity sessions (Groene, 1993) and during singing (Fitzgerald-Cloutier, (1993) when compared with reading. Clair (1996b) also cited more alert responses during singing sessions, when compared to reading and silence, in a study with 26 late stage residents with dementia.

Structured, familiar group singing was used as a technique by Olderog-Millard and Smith (1989) in a study comparing the singing technique to group discussion. Outcomes reflected significantly higher frequencies of vocal/verbal participation and sitting/walking with others, both during and after the music intervention, as compared to the discussion session. *The Dementia Music Behavioural Assessment* (Bright, 1988), *A Creative Therapy Profile* (Dennes & Hogan, 1998), and the more recent *Music Therapy Assessment Manual with a focus on Aged Care* (Baxter & Vance, 2001) may

be helpful to the music therapist in assessing and selecting appropriate music and interventions for each resident with dementia. Although individual music therapy focuses optimally on the one-to-one therapeutic relationship, group music therapy brings out social connections that may well facilitate empathetic, supportive, and therapeutic peer interactions (Hanser, 1999).

This study proposed that familiar group singing would positively affect aspects of mood and social/non-social behaviours in residents with dementia experiencing sundowning. The literature reflected the following behaviour criteria as being relevant when investigating sundowning: Mood (Dennes & Hogan, 1998), and social behaviour and non-social behaviour (Olderog-Millard, 1989; Pollack & Namazi, 1992). Hence, these elements were assessed before, during, and after familiar group music therapy sessions. More specifically, familiar group singing was the independent variable suggested to effect positively upon three dependent variables: mood, social, and non-social behaviour. It was speculated that flat and anxious moods and non-social behaviour would decrease, and that moods of wellbeing and social behaviour would increase, when compared with these variables before the session.

Method

Participants

Four female residents, aged 80, 92, 96, and 97, were chosen for this study. The criteria for selection were: (a) dementia diagnosis at the middle phase/6th stage of severe cognitive decline according to the Global Deterioration Scale (Reisburg, 1983), and scores less than 13 on the Mini-Mental State Examination (MMSE, Folstein, Folstein, & McHugh, 1975); (b) the appearance of aspects of sundowning, including heightened negative mood and confusion/agitated behaviour, as noted by clinical staff observing residents on the ward in the late afternoon/early evening, and completing a non-standardised facility constructed Behaviour Assessment Chart (Kable, 1998); (c) ambulation with or without the assistance of a walking frame; and (d) the informed consent of each resident's caregiver/next of kin. A group of no more than five residents was desirable to facilitate the best possible outcomes (Fitzgerald-Cloutier, 1993; Hanser, 1999; Olderog-Millard & Smith, 1989; Pollack & Namazi, 1992; Tomaino, 2002) in a small family room, where the study took place. The female residents selected were all Anglo-Saxon widows of middle socio-economic background who had at least one regularly visiting child. Each had resided at a 64-bed metropolitan

nursing home for a minimum of five months prior to the study, and three had participated in weekly group music therapy sessions during that time. Ethical clearance for the research was secured through the facility review board.

Design

Applied behaviour analysis design was chosen, as it may be “useful to test hypotheses about the behaviour of a single individual or group and examine the effect of a particular strategy on this entity” (Hanser, 1995, p. 150). In a similar manner to other music therapy research studies on residents with dementia, data were gathered before, during, and after music therapy sessions (Olderog-Millard & Smith, 1989; Pollack & Namazi, 1992).

A Mood-Behaviour Assessment Chart (MBAC) was author-designed, informed by aforementioned literature (Dennes & Hogan, 1998; Olderog-Millard & Smith, 1989; Pollack & Namazi, 1992), as a research tool could not be found to optimally measure the mood and frequency of social/non-social behaviour regarding the hypothesis and resident needs. The MBAC’s 13-item checklist broadly assessed the dependent variables for each resident in appearance of: (a) mood (items 1-3); (b) non-social behaviour (items 4-7); and (c) social behaviour (items 8-13).

Procedure

Over a four-day period, as darkness approached in the late autumn (between 4.15–5.30pm), two assistants discreetly observed two of the four residents daily on a rotating basis. Each resident was constantly observed and their mood/behaviour was recorded in one-minute segments over a 5-minute period, allowing for a maximum score of 5. The dependent variable was the frequency of occurrence of each of 13 MBAC items during individual minutes of the 5-minute observation interval, yielding a score from 0 to 5. Data were collected for each resident in two hour-long periods of 5-minute blocks (that is, 24 blocks for each resident, and 96 blocks overall), during: (a) a 15 min pre-test session, as the residents sat in their room, lounge room, or foyer, or wandered within the facility; (b) during the 30 minute singing session; and (c) during a 15 minute post-test session, when residents either remained in the family room or wandered out into the corridor.

Residents were escorted into the family room and seated for the music therapy session after the initial 15-minute pre-music therapy observation period. This room, unfamiliar to the residents, was a special, warmly lit lounge room with homelike atmosphere, inclusive of a fireplace, a wall clock,

and silk floral arrangement. Comfortable chairs were arranged in a small semi-circle around a keyboard set on a low table. The curtains remained open allowing the fading daylight/twilight darkness to be noticed by the residents. Two observers sat towards the edge of the group, with the music therapist centred within the resident semi-circle. The door of the room was left ajar, so residents would be free to leave.

The music therapist commenced the familiar group singing session with a welcome song. Following on from Whitcomb's (1994) suggestions for a "therapeutic milieu" during sundowning, the music therapist played and sang gentle, soothing waltz-tempo songs as well as individually favoured selections (Tomaino, 2002). Songs were paused for emphasis and focus, repeated to increase participation and promote security, and altered in volume and tempo to match the affect of the group. Additionally, the music therapist used imitation and modelling to support, extend, and reinforce resident response.

Singing was more or less continuous for 30 minutes, with positive verbalisations, hand clapping, *acappella* song verse interjections, and reminiscences from the residents, prompting pauses and verbal responses from the music therapist. A gentle farewell song brought the session to a structured close, and the residents were individually thanked for coming. Some residents chose to linger and chat with one another, while others left the room, all still being observed. At the close of the 15-minute post-test session, residents were assisted to move to the dining room for their evening meal.

Results

The music therapy intervention of familiar group singing was the independent variable proposed to effect a positive change upon the dependent variable MBAC items (i.e. flat and anxious mood; mumbling, touching face/clothes, wandering, and sitting alone). Scores of the data collected were converted into a "percentage of time" variable (by multiplying the score by 20) and results compared between the three time periods (pre-therapy, during music therapy, and post-therapy). The summary statistics for each activity for each period are shown in Table 1.

Analysis of variance was computed for each activity, using a model with subject and period as factors. When the period effect was significant, the three periods were compared in pairs *post hoc* using a Bonferroni adjustment for multiple comparisons. The results of the tests are shown in Table 2. Corresponding graphs, separated into the three activity groups, are shown in Figures 1, 2, and 3.

Table 1
Means and standard deviations of scores

Activity	Pre		Therapy		Post	
	Mean	SD	Mean	SD	Mean	SD
1 well-being	34	41	83	27	78	27
2 flat	40	40	15	26	4	12
3 anxious	24	39	4	14	19	31
4 mumbling	3	10	0	3	16	34
5 touching face/clothes	29	40	12	27	15	34
6 sitting alone	25	44	0	0	0	0
7 wandering alone	2	6	0	0	12	32
8 walking with others	11	29	0	3	0	0
9 sitting with others	38	49	75	43	75	44
10 eye contact, smiling	26	44	78	29	43	34
11 singing, talking	33	43	77	35	47	36
12 moving to music	0	0	40	43	0	0
13 reminiscence	0	0	4	8	7	18

Analysis of the data supported the suggestion that the independent variable of familiar group singing affected positively upon the three dependent variables of mood, non-social, and social behaviour in residents with dementia experiencing sundowning. Each of the MBAC items, except for reminiscence (item 13) was significantly different across the three periods, as shown in Figures 1, 2, and 3.

It was postulated that flat and anxious moods would decrease, and results affirmed this, in that being flat decreased from 40% to 15% and being anxious decreased from 24% to 4% from pre-therapy to therapy. In the post-therapy period, being flat decreased further to 4% but being anxious rose by 19%. The mood of well-being was speculated to increase from pre-therapy to therapy, a positive outcome reflected in the 49% rise that lingered nearly as high into the post-therapy period (Figure 1).

It was suggested that non-social behaviour would decrease from pre-therapy to therapy and this was also affirmed in results displaying differing patterns across the three time periods. As recorded on the MBAC, a significant decline in item 5 touching face/clothes and item 6 sitting alone, from pre-therapy to therapy was observed, with item 7 wandering alone rising from 2% in pre-therapy and 0% during therapy to 12% post-therapy, perhaps reflective of the agitation associated with sundowning.

Table 2
Analysis of variance of scores (percent of time) by period and subject for each activity.

Activity	Overall p-value	Post hoc tests with Bonferroni adjustment		
		Pre vs Therapy	Therapy vs Post	Pre vs Post
1 well-being	< 0.001	< 0.001	1.0 ns	< 0.001
2 flat	< 0.001	< 0.001	0.31 ns	< 0.001
3 anxious	0.003	0.005	0.05	1.0 ns
4 mumbling	0.002	1.0 ns	0.04	0.002
5 touching face/clothes	0.040	0.037	1.0 ns	0.23 ns
6 sitting alone	< 0.001	< 0.001	1.0 ns	< 0.001
7 wandering alone	0.011	1.0 ns	0.010	0.08 ns
8 walking with others	0.009	0.013	1.0 ns	0.030
9 sitting with others	0.001	0.001	1.0 ns	0.005
10 eye contact, smiling	< 0.001	< 0.001	< 0.001	0.22 ns
11 singing, talking	< 0.001	< 0.001	0.003	0.52 ns
12 moving to music	< 0.001	< 0.001	< 0.001	1.0 ns
13 reminiscence	0.08 ns			

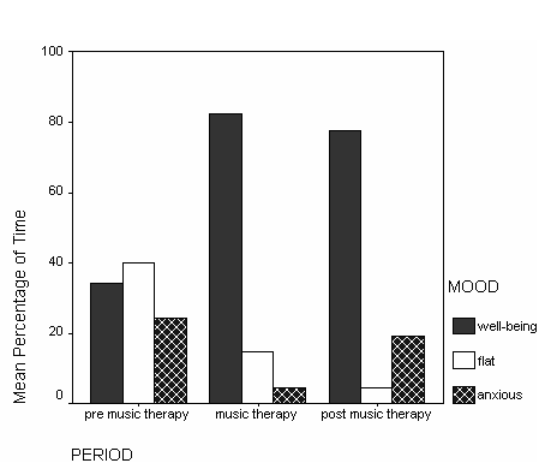


Figure 1. Mood of the resident group.

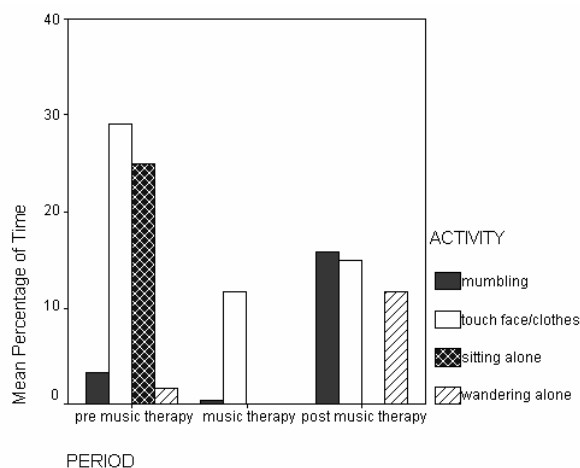


Figure 2. Non-social behaviour of resident group.

Social behaviour, presupposed to rise from pre-therapy to therapy, showed significant increases across most behaviours, although item 8 “walking with others” decreased and item 13 “reminiscence” only rose slightly from therapy to post-therapy. Eye contact/smiling/gesturing/touching increased 52% and singing/talking/ humming increased 44% from pre-therapy to therapy, while sitting with the group also rose 37%, remaining high into the

post-therapy period. Moving/clapping/nodding to music was an additional positive response, reaching the 40-percentile mark during the singing session.

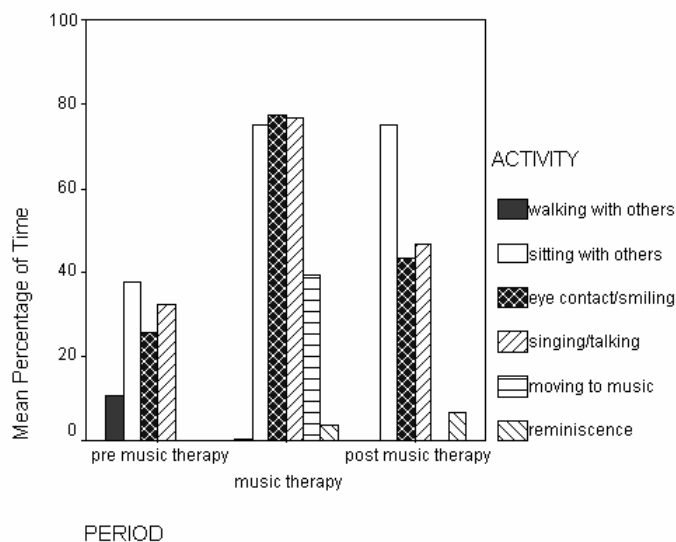


Figure 3. Social behaviour of resident group.

Discussion

Outcomes of this study support the proposal that the music therapy intervention of familiar group singing positively affects aspects of mood, social, and non-social behaviour in residents with dementia experiencing sundowning, upholding related sundowning and music therapy literature (Clair, 2000; Cohen-Mansfield et al., 2000; Dewing, 2003; Fitzgerald-Cloutier, 1993; Groene, 1993; Lott & Klein, 2003). As darkness approached, the negative mood and non-social behavioural aspects observed in the residents (e.g., flat and anxious mood, mumbling, touching face/clothes, wandering, and sitting alone) reflected the heightened confusion and restlessness characteristic of sundowning (Cohen-Mansfield et al., 2000; Dewing, 2003; Rindlisbacher & Hopkins, 1992), as did anecdotally noted comments in the post-music therapy period (e.g., “It’s getting dark early,” “I don’t like the dark,” “I must find Nelly”). Music, specifically familiar group singing, ameliorated the sundowning effects (Tomaino, 2002) by utilising gentle, waltz-style selections in a secure, small group setting (Whitcomb, 1994). Wellbeing and positive social/behavioural outcomes were promoted in support of Kitwood’s (1997) theory of personhood, as indicated by increased

social interaction, singing, reminiscence, movement to music, and remaining seated for the length of session.

From pre-test to music therapy, vocal/verbal responses (singing, talking, humming) rose from 33% to 77%, and sitting with others rose from 38% to 75%, which was similar to responses found by Olderog-Millard and Smith's (1989) study. Pollack and Namazi's (1992) discovery, that direct nonverbal behaviours (gesturing, smiling, touching, humming, singing, whistling) were the greatest social behaviour increases pre to post-testing with individualised music activities, was comparable to this study's results for group singing activities. Pre-post-test scores for both studies also reflected a decrease in non-social sensory behaviour, inclusive of touching face/clothes. The group singing's effect on wandering reduction also confirmed findings from previous comparable studies (Groene, 1993; Fitzgerald-Cloutier 1993).

The clinically adapted applied behaviour analysis design used to frame this study did, generally, provide numerical data to inform music therapy practice relevant to residential aged care. Utilising a data-based treatment plan, the single-case approach implemented with selected residents with dementia experiencing sundowning was helpful in assessing the effectiveness of familiar group singing with this population (Hanser, 1999).

However, the findings are limited due to: (a) use of an untested mood-behavioural tool comprising less-distinct and somewhat subjective variables, both in assessing aspects of sundowning and the music therapy intervention; (b) bias issues, including lack of internal reliability, and the observers became quasi-group members when an awkwardness/suspicion arose among some residents; (c) a limited time frame for data collection; and (d) the presentation of the results as a group, rather than individually, obscuring individual sundowning variables and the clarity of results. Other factors restricting the conclusions are: (a) the small sample and similar background of each of the residents, and (b) the idiosyncrasies of the music therapist. Future research may be strengthened when utilising: (a) videotaping to collect and analyse data (Groene, 1993), (b) a qualitative process-oriented research approach, or (c) a no-music control group.

Conclusion

Sundowning, a phenomenon argued to affect approximately one-fifth of people diagnosed with dementia (Satlin et al., 2003) in aged care/psycho-geriatric facilities, manifests with varied mood and behavioural disturbances (Burney-Puckett 1996; Cohen-Mansfield et al., 2000; Dewing 2003; Rindlisbacher & Hopkins, 1992; Volicer et al., 2001) and is of concern and

challenge to caregivers (Bliwise, 1994; Burney-Puckett, 1996; Dewing, 2003; Lott & Klein, 2003; Satlin et al., 2003). The music therapy intervention of familiar group singing, framed by Kitwood's personhood approach (Kitwood, 1997), to promote social interaction and well being positively addressed aspects of sundowning mood and social/non-social behaviour. Anecdotal comments from residents at the close of the singing sessions (who displayed suspicious, anxious, and wandering behaviours prior to music therapy) included "It's wonderful to sing these old songs. You can't forget them. We had a great time this afternoon. Music was the best part." Results compared favourably with previous music therapy and agitation study outcomes, although limitations of the chosen quantitative design and methodology have been acknowledged.

Suggestions for future research call for a reliable tool to measure wellbeing and social behavioural outcomes in people with dementia. This measure should consider individual variables influencing outcomes inclusive of sundowning, to better facilitate the interface of personhood with music therapy (Sherratt et al., 2004) and support EBP for dementia care (Dewing, 2003; Wigram, Pedersen, & Bonde, 2002). Findings from this sundowning study suggest that in the late afternoon and early evening, when observable negative mood and non-social behaviour may peak for the resident with dementia and reflect unmet psychosocial needs, music therapists can provide valuable support to the clinical team and enhance the quality of life for this population of older adults.

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