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The Closing Group: Therapeutic Recreation for Nursing Home Residents with Dementia and Accompanying Agitation and/or Anxiety

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Long-term care residents who have a dementia diagnosis could account for as much 50% of a nursing home's population. Often residents with dementia experience a distressing behavioral symptom that affects the resident experiencing the symptom(s), other nursing home residents, visitors, and staff. The Closing Group intervention was developed as a nonpharmacological alternative that aims to reduce agitation and anxiety, increase socialization, decrease restraint use, and decrease antipsychotic drug use for selected residents with a dementia diagnosis. The program was based on an understanding of the contributing factors to agitation and anxiety, the nursing home environment as it relates to behavior, and the offering of resident-driven recreational activities. The purpose of this 2-year study was, with use of multiple measures, to examine the extent to which the Closing Group intervention has met its goals. A sample of 16 long-term care residents was offered attendance at the group. Findings in the area of reducing agitation and anxiety were encouraging to the extent that further study with larger samples is needed.

Keywords: nursing home residents; dementia; recreation; agitation; anxiety

Long-term care residents who have a diagnosis of dementia present with a variety of symptoms, which is to be expected, since the onset and course of dementia depend on the underlying cause and vary from one individual to another.[1-4]

The manifestations of agitation and anxiety are many. It is not unusual to observe such symptoms as wandering[5]; hitting; kicking; grabbing[6]; spontaneous verbalizations such as screaming, loud utterances, moaning, and repetitive words or phrases[7,8]; unwanted verbal and/or physical sexual advances such as suggestive comments, gestures, grabbing, or touching[9]; extreme weepiness; fearfulness; and hand wringing in residents with a dementia diagnosis.[10] It is an ongoing challenge to manage these unpleasant behavioral symptoms so that quality of life is not diminished for residents who are experiencing the symptoms. Often symptoms are also disturbing to those who are near them, for example, other nursing home residents, staff, and visitors.[5]

Antipsychotic drugs may be part of behavior management. Although there is therapeutic benefit to psychotropic medication, there is the potential for adverse side affects such as sedation, orthostatic hypotension, and anticholinergic and cardiac side affects.[11] Physically limiting an agitated resident's environment by the use of mechanical restraints is sometimes used, but rather than having a calming effect, use of such restraints may increase distress in an already agitated and anxious resident.[8,10]

There are contributing factors that may cause an agitation or anxiety response. It is possible to group

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these factors into 3 categories: environmental, biological,[6] and psychosocial.

Continued management within an overstimulating, overdemanding environment sustains agitation and anxiety in many residents with dementia.[5,10] A resident with dementia may show sundowning behavior, which is a late-afternoon and early evening exacerbation of agitation.[3] Late afternoon can mean an increase of stimulation at the end of a shift, which may disturb some residents, and then what follows is the day winding down, daylight fading, and less stimulation, which may likewise distress residents.[10] In addition to environmental noise, other environmental correlates to agitation may include temperature, space, light, presence of music, and response to being restrained within the environment.[5]

Contributing biological factors include lack of exercise, fatigue, source of dementia, hearing, vision impairment,[12] pain, hunger, thirst, and frustration in imparting these physical needs[13]; and a physical source, such as sleep deprivation, acute illness, fecal or urinary urgency, constipation,[10] and immobility.[7] Psychosocial factors contributing to agitation and anxiety could be reinforcement of negative behavior; lack of stimulation[12]; unmet needs to love and be loved, to express feelings, and to feel useful and productive[14]; depression[15]; fear; anxiety; psychosis[7]; and invasion of personal space.[5]

The Closing Group project was developed in an attempt to eliminate contributing environmental, biological, and psychosocial factors to the extent possible and by doing so reduce the occurrence of agitation and anxiety in selected residents with a dementia diagnosis. This interdisciplinary effort tapped into the many therapeutic aspects of recreation and was composed of several key elements. Participants were assisted to an environment that was less stimulating and calmer than that of the nursing home unit. The group was held Tuesday through Saturday during hours of peak unit activity (i.e., 2:30 PM to 4:30 PM). The staff-to-resident ratio was 1 staff person to 4 residents. The intervention was a small group format with 8 participants at all times. A small group would not only be less stimulating but would create cohesion.[16] Activity was resident driven rather than staff driven and based on where residents seemed to be moodwise and behaviorwise that day. Wandering was not considered a behavior but rather a need to be met within a safe place. Restraint use was limited. Reasons for specific behaviors were explored, and needs were met to the extent possible. Naomi Feil's principles of validation were used whenever possible when communicating with participants.[14]

The purpose of this study was to examine the extent that providing the Closing Group intervention, a treatment package, to selected residents with dementia increased socialization, as evidenced by increased interaction with peers and active participation, decreased restraint use, decreased psychotropic drug use, and decreased agitation and anxiety among participants. The hypotheses are presented with the results for ease of comprehension and interpretation.

Methods

Measures

Several measures were chosen to test the hypotheses. A baseline of each participant's agitation and anxiety was obtained using the Cohen-Mansfield Agitation Inventory (CMAI). The CMAI is a 29-item, caregiver-rated assessment of agitation in the elderly. It uses a 7-point scale to rate the frequency of the manifested behavior.[17]

The Mini Mental State Examination (MMSE) was used to determine baseline and periodic cognitive functioning. The test consists of 2 parts. The first requires verbal responses only and assesses orientation, memory, and attention. The second part evaluates the ability to write a sentence, name objects, follow verbal and written commands, and copy a polygon design. Scores range from 30 to 0. A score below 24 suggests global cognitive impairment.[18]

The Global Deterioration Scale (GDS) was used to obtain a baseline of severity of cognitive impairment and to periodically assess functioning. This instrument uses a 7-item staging system, which ranges from stage 1, no cognitive decline, to stage 7, very severe decline.[19]

The Cornell Depression Scale (CDS), which includes assessment of agitation and anxiety, was used to obtain a baseline assessment of mood and to provide periodic monitoring of mood. The CDS is a 19-item, clinician-administered scale that uses information from the caregiver and the resident. Each item is rated on a scoring system, i.e., unable to evaluate, absent, mild, intermittent, or severe. The CDS has a high interrater reliability and internal consistency.[20]

A daily tracking sheet was developed internally and was used to monitor the occurrence of agitation or anxiety, weepiness, interaction between participants, participation, and restraint use. These items

were rated as follows: 0, did not occur; 1, rarely occurred;

2, occasionally occurred; 3, frequently occurred; 4, always occurred. A copy of the daily tracking sheet is available on request.

Procedures

As stated above, the CDS, MMSE, GDS, and CMAI were completed initially for purposes of establishing a baseline. They were also completed on a quarterly basis. Hence, the residents before participation in the project served as the control group. The project assistant, after receiving training in each measure, completed the assessments on all participants. Assessments were completed in the privacy of the participant's room. The daily tracking sheets were completed at the end of the group by the Closing Group project's recreational assistant, who was given instruction on how to use the rating system. For evaluation purposes, assessments of "before" and "after" the participation of the project were compared.

Sample

The Closing Group project was conducted at Robinson Terrace, which is a 122-bed, long-term care facility located in a rural upstate New York. Residents are not segregated based on care needs or any other grouping. In 2001, approximately 50% of the residents had a dementia diagnosis. A small percentage of residents come to the facility for rehabilitation and then return home. The remaining residents make their home at the facility.

Possible participants for the Closing Group were selected from the nursing home resident population. First, a review of the medical records was completed. Individuals without a dementia diagnosis and who would be returning home were eliminated. A cohort was then selected from the remaining group of residents who met the criteria of a MMSE score of 10-25 and a GDS score of severe. Possible participants needed to also present with a behavioral symptom(s) that interferes with daily functioning and requires frequent staff intervention following the consensus of treatment team. Participants had a score of at least "1" and a severity of 5 on the CMAI.

The established cohort list was then reviewed with the treatment team, and 8 eligible residents were selected. Residents sometimes became too ill to participate or died, in which case another participant was chosen based on the above criteria. There were 8 participants at all times in the group. In total, 16 residents were enrolled during the 2-year project. All participants were Caucasian, which reflects the demographics of the nursing home at that time. Of the 16 participants, there were 12 women and 4 men. Three participants left the group before they had participated for 1 quarter. One was discharged because he transferred to another facility, one ended participation because he improved in cognitive functioning and no longer met the criteria, and one female participant deteriorated physically, making participation impossible. Four participants were with the project for the entire 2 years. Nine participants were enrolled in the project for at least 1 quarter but were discharged at various times during the 2-year project owing to their physical decline and eventual death. Former occupations of participants varied (i.e., 1 beautician, 2 factory workers, 3 homemakers, 2 cooks, an interpreter, and a teacher). The average age of the 13 participants whose data were analyzed for this study was 83. The source of the 13 participants' dementia varied. According to medical records, 2 participants had a diagnosis of Alzheimer's disease, 2 were given a diagnosis of senile dementia, 1 had Down's syndrome/dementia, and the remaining 8 had a diagnosis of dementia, nonspecified.

Adverse reactions directly related to the Closing Group intervention were not anticipated, and there were none. If, however, a participant had found the group setting distressing to him or her, the resident would have been assisted to the unit and given 1:1 until calm and returned to his or her baseline. This resident would be invited back to the group when the symptom was absent, as long as selection criteria were still met. Residents were discharged from the study if they became terminally ill or medically unstable or if the progression of the disease made participation in the program not beneficial. Discharged residents were provided with alternative activity according to facility policy.

Quantitative Results

The description of analyses and reporting of relevant statistics for the hypotheses are reported in this section. The initial score (pre-score) and the median of the quarterly scores (the post-scores) are reported for each scale. Since there were only 13 participating residents in the group, scores are of ordinal scale, the sign test was performed on the differences of the scores of participants, and no assumptions for the test were required.

Table 1. Descriptive Statistics and Test for Median Assessment Score Differences* (n = 13)

	MMSE	GDS	CDS
Median of initial scores	9.0	6.0	5.0
Median of post-scores	6.0	6.0	5.0
Median of differences*	0.0	0.0	−0.5
Signed rank test	p value = .374 (n = 9)	p value = .059 (n = 5)	p value =. 906 (n = 12)

*Difference indicates the median of the pre-scores minus the post-scores. MMSE indicates Mini Mental State Examination; GDS, Global Deterioration Scale; CDS, Cornell Depression Scale.

Hypotheses and results.

H_0: The median of the MMSE post-scores was the same as the pre-score.
H_1: The median of the MMSE post-scores was different from the pre-score.

The participants had a median initial MMSE score of 9.0, the median of the medians of the post-scores was 6.0, and the median of the score differences was 0.0.

With a small sample of 9 participants who had nonzero differences, the Wilcoxon signed rank test yielded a p value of .374, which indicated no significant differences on the MMSE scores (Table 1).

H_0: The median of the GDS post-scores was the same as the pre-score.
H_1: The median of the GDS post-scores was different from the pre-score.

The participants had a median initial GDS score of 6.0, which was the same as the median of the medians of the later scores. The median of the score differences was 0.0. With a valid sample of 5 participants who had nonzero differences, the Wilcoxon signed rank test resulted in a p value of .059, which indicated no significant change of GDS scores at a 5% significance level (Table 1).

H_0: The median of the CDS post-scores was the same as the pre-score.
H_1: The median of the CDS post-scores was different from the pre-score.

The participants had a median initial GDS score of 5.0, which was the same as the median of the medians of the later scores. The median of the score differences was 0.5. With a valid sample of 12 participants who had nonzero differences, the Wilcoxon signed rank test gave a p value of .906, which also indicated no significant change of CDS scores (Table 1).

H_0: The probability of the median post-score (for 1 behavior) in CMAI equal to zero was the same as the probability of a score greater than zero.
H_1: The probability of the median post-score equal to zero is greater than the probability of a median score greater than zero.

Since the scores are of ordinal scale, performing the binomial test for each of the 36 behaviors, we found that most of the behaviors had p values < .05, which suggested that the median post-score equals zero, while some behaviors such as "repetitive," "noises," "attention," "verbal aggression," "bossy," "fidget," "wander," and "temper outburst" had a median post-score greater than zero. According to the Wilcoxon signed rank test, there were no significant differences between the initial scores and the median post-scores, except for "screaming" and "complaining" with respective p values .047 and .030. It was shown that the residents had considerably less "screaming" and "complaining" while participating in the Closing Group than they did initially. The overall mean score difference (pre-score minus post-score) for all participants was 0.126, and the median was 0. Using the Wilcoxon signed rank test for the hypothesis that the median score difference was greater than zero, we obtained the p value of .013, showing a significant overall CMAI score decrease at a 5% level (Table 2).

Furthermore, the overall changes of CMAI scores for each participant were assessed. For each behavior item in CMAI, the median of post-scores was calculated to compare with the initial score. Then the binomial test was used, to the hypothesis that there was a notable overall change for each participant. Among the 13 participants, 2 had significant decreases (left-tailed p values = .002 and .031), and 2 had a significant

Table 2. Binomial Test for Median Post-Scores of Behaviors in CMAI (n = 13)

Behavior	No. of Equal 0 (post-score)	*p* Value (post-score)	Mean (difference†)	*p* Value (difference)
Repetitive	8	.2915	0.077	.472
Relevant	10	.046*	0.182	.358
Nonrelevant	11	.011*	0.583	.140
Noises	9	.133	–0.231	.819
Screaming	10	.046*	0.808	.047*
Complaining	10	.046*	0.731	.030*
Attention	6	.710	0.462	.312
Negative	10	.046*	0.077	.708
Verbal aggression	7	.500	–0.115	.705
Spitting	12	.002*	–0.192	.977
Bossy	7	.500	–0.231	.845
Verbal sexual advances	12	.002*	–0.077	.977
Physical sexual advances	12	.002*	–0.039	.977
Fidget	5	.291	0.269	.439
Wander	6	.500	0.385	.242
Outside	13	.001*	0	NA
Inappropriate dressing	11	.011*	0.231	.428
Repetitious mannerisms	10	.046*	0.308	.394
Inappropriate handling	13	.001*	0	NA
Grab/snatch	10	.046*	–0.231	.819
Hoard	13	.001*	0.308	.500
Hiding	13	.001*	0	NA
Strange movement	12	.002*	–0.154	.814
Temper outburst	7	.500	–0.154	.735
Hitting	13	.001*	0.077	.500
Kicking	13	.001*	0	NA
Throwing	13	.001*	0	NA
Tearing	13	.001*	0	NA
Grab/cling	11	.011*	0.538	.343
Pushing	12	.002*	0.077	.500
Biting	13	.001*	0	NA
Scratching	13	.001*	0	NA
Hurt self	13	.001*	0	NA
Hurt others	13	.001*	0.077	.500
Intentional falls	13	.001*	0	NA
Eat/drink nonfood	13	.001*	0.769	.091
Overall	NA	NA	0.126	.013*

*Significant at 5% level.
†Difference = "pre-score"– "post-score."
CMAI indicates Cohen-Mansfield Agitation Inventory; NA, not applicable.

increase (right-tailed *p* values = .038 and .001) at a 5% level, whereas the rest had no significant changes (Table 3).

H_0: Group participation has no effect on participants' distress and anxiety, i.e., the probability of no distress (score 0) is the same as the probability of some distress (score above 0).

H_1: Group participation has a reduced effect on participants' distress and anxiety, i.e., the probability of no distress is greater than the probability of some distress; and

H_0: Group participation has no effect on participants' weepiness, i.e., the probability of weepiness (score 0) not occurring is the same as the probability of some weepiness occurring (score above 0).

H_1: Group participation has a reduced effect on participants' weepiness, i.e., the probability of weepiness not occurring was greater than the probability of some weepiness occurring.

The daily recorded data for all participants (n > 2000) were used in the binomial test, which resulted a *p* value < .001 for both hypotheses, indicating that

Table 3. Sign Test of Overall CMAI Difference for Individuals

Participant	No. of Below 0	No. of Equal 0	No. of Above 0	*p* Value
1	3	27	6	.254
2	12	20	4	.038*
3	0	31	5	.031†
4	4	28	4	.637
5	2	28	6	.145
6	15	19	2	.001*
7	2	33	1	.875
8	2	20	14	.002†
9	2	28	6	.145
10	4	28	4	.637
11	5	28	3	.856
12	0	34	2	.250
13	0	34	2	.250

*Significant increase at 5% level
†Significant decrease at 5% level

both distress/anxiety and weepiness hardly occurred during group participation (Table 4).

H_0: The probability of more frequent interaction (score 3 or 4) occurring in group was the same as the probability of less frequent interaction (score below 3).
H_1: The probability of more interaction occurring in group is greater than the probability of less interaction occurring.
H_0: The probability of more frequent participation (score 3 or 4) occurring in group is the same as the probability of less frequent participation occurring (score below 3).
H_1: The probability of more frequent participation in group occurring is greater than the probability of less frequent participation.

Inspection of the data did not show that frequent interactions occurred. In fact, they showed otherwise (Table 4).

The resulting *p* value of the binomial test was .036, indicating that more participation occurred during the group, but not significantly at the 1% level (Table 4).

Ho: The proportions of man-days using and not using restraints were the same.
H1: The proportions of man-days using and not using restraints were not the same.

According to the data, 680 man-days out of 1253 (54%) were kept under restraint, whereas 46% were not. With a *p* value of .003 from the binomial test, it did not support a statistical significance of restraint reduction during the participation. However, practically, the evidence that near half of the man-days did not require restraints has shown a positive effect on restraint reduction.

H_0: Use of psychotropic medications is reduced in both dosage and frequency.
H_1: Use of psychotropic medications is not reduced in dosage and frequency.

To simultaneously consider the medication dosage and frequency, we combined the monthly dosages and frequencies of the 2 medications Seroquel and Zyprexa and calculated the daily mean medication usage for each month and each participant. The above hypotheses were rephrased as the following:

H_0: The daily mean medication usage has no linear relationship with the months of participation in the program.
H_1: The daily mean medication usage has a negative linear relationship with the months of participation in the program, i.e., the longer the participation, the less the medications.

Since the mean medication usages and the number of months of ratio scale, the Pearson correlation coefficient *r* for the daily mean dosage and the number of months of participation in the program was calculated. The resulting *r* was 0.114, with a *p* value of .195 (n = 130), indicating that the mean medications had no significant linear relationship with the length of time. That is, there was not enough evidence to show significant reduction in the medications.

Qualitative Results

Qualitative methods involved both solicited and unsolicited comments about the effectiveness of the Closing Group. One unsolicited commentary on the possible success of the group came from one participant's obituary. This lady attended daily for several months. Her daughter recognized the impact the group had had on her mother's quality of life by noting in her obituary, "While at Robinson Terrace (Oma) participated in the Closing Group."[21]

Table 4. Binomial Tests for Distress, Weepiness, Interaction, and Participation (frequency in man-days)

	No. of 0*	No. of Above 0	No. of Below 3	No. of 3 or 4	Total	*p* Value
Distress	2053	363	. . .	. . .	2416	< .001
Weepiness	2350	66	. . .	. . .	2416	< .001
Interaction	. . .	. . .	1331	1085	2416	< .001
Participation	. . .	. . .	1163	1252	2415	.036

Scores: 0 = did not occur, 1 = rarely occurred, 2 = occasionally occurred, 3 =frequently occurred, and 4 = always occurred.

Another unsolicited comment came from a lady who was always looking for "her people." She left her homeland of Nova Scotia at a young age to attend nursing school in New York City and remained in the United States. She now experiences confusion associated with her dementia diagnosis. Each day she searched for "her people." She would ask anyone she saw to help her find them. Knowing her background, the treatment team was fairly certain she wanted to return to the nurturing love of her family. It was evident the Closing Group was meeting this need when she started referring to group attendance as going to be with "her people."

One gentleman referred to the Closing Group as his apartment. Another said he was going to his living room. A female participant would say she was going to her meeting, assigning it a term that meant to her this was something important. Participants were observed on a daily basis sitting in comfortable recliners within the circle of the group looking relaxed, without distress.

Six out of 16 families responded to a post-program family satisfaction survey. One daughter expressed her own relief that her mother's anxiety was reduced at a particularly difficult time of day. She felt the group helped her mother remember a happier time. One family member suggested more than one group a day should be offered, and staff on all units should be made aware of the interventions used in the Closing Group. A significant other noted it was worthwhile and helpful for his friend. One family member stated the quiet setting with controlled stimulus was pleasant. Two family members felt the group was moderately helpful at increasing socialization and reducing distress. A low response is noted. The survey sample of family/significant others is low, i.e., 16. It is speculated that out of the 16, several had family members (participants) who may have been transferred. Some participants had passed away, possibly making a response uncomfortable. It is also speculated that some may not have thought the group helpful and saw no reason to reply.

Twelve key staff were surveyed after the program. Six nurse managers, 1 evening supervisor, 3 recreational staff, and 2 social workers were asked an open-ended question about the group, "What were your observations about the Closing Group?" All who responded indicated that residents who were anxious before the group were calmer on return, although this was not the observation when the program first started. All reported the units were quieter during the 2:30 PM to 4:30 PM time frame. There were fewer disruptions, and it was easier to do documentation. Recreational staff noted activities had fewer disruptions now that those who were offered the group had a more needs-appropriate group. Recreational staff stated other residents offered fewer complaints since activities were calmer. One staff member who was also a family member appreciated that her grandfather used her grandmother's attendance at the group as a means to end his visit on a less-guilty, more positive note.

The nurse managers who were surveyed stated they would have liked to see more residents benefit from this type of intervention. They suggest it would have been beneficial to offer the program to residents on an as-needed basis and to have a larger group or 2 such groups.

Daily tracking sheets that quantitatively looked at participation also qualitatively tracked activity preference. Results of this survey are available on request.

Discussion

MMSE, CDS, and GDS data suggest participants remained stable in areas of cognitive status and mood. There were no significant differences on MMSE, CDS, or GDS scales. When assessing individuals with dementia, stability over the course of 2 years would appear to be a positive outcome. However, the sample was small. The project started with 8 residents, and as 1 was discharged from the group, another resident was added. It

is possible the new participant functioned at a higher level than the one leaving, which would offset any changes, either positive or negative. No conclusions can be made based on these data.

Based on analysis of data, the goal of decreasing anxiety and agitation for participants may have been met. According to analysis of the tracking sheet data, anxiety, agitation, and weepiness hardly occurred during the group. Occurrence was rated on an instrument that was developed for the purpose of the project, and it lacks validity and reliability. However, analysis of CMAI scores supports a significant overall decrease in agitation and anxiety indicators. Scores were also considered on an individual basis. This analysis revealed 2 participants had an increase of agitation. The remainder of the participants had no significant changes, a desired outcome. The scores on the CDS, which considers anxiety and agitation as possible indicators of depression, remained low. Considering the analysis of all assessment tools, it is entirely possible that group attendance may have been partially responsible for low levels of agitation and anxiety while residents were participating in the Closing Group.

The binomial test performed on the restraint use data does not support a statistical significance in restraint reduction. However, as it was pointed out previously in this report, nearly half of the participants did not require restraints. This is a positive outcome that could be related to participation. Restraint reduction is closely related to the previously discussed goal of reduced anxiety and agitation. It is possible the Closing Group staff assessed that a resident was less agitated and anxious and so was more comfortable, which eliminated the need for a restraint and/or a restraint order. Of course, other factors, such as progression of dementia, acute illness, or addition of medication, need to be considered as possible reasons for a decrease in restraint use.

The data analysis does not support that the goal of increasing social interaction, as evidenced by increase in participation and increase in interactions, was met. More interactions occurred, but not at a significant level. It is pointed out that scores in these areas remained at 3 (frequently occurs) or 4 (always occurs). Over the course of the 2-year project, it would seem this is a positive outcome.

Analysis of medication data suggests there was not enough evidence to show significant reduction in the antipsychotic medications quetiapine fumarate and olanzapine. Medication records for each participant were reviewed for the time he or she was involved in the group. For the purpose of this study, antidepressants and antianxiety medications were eliminated from analysis. Antipsychotic medications tend to have more serious side effects in the geriatric population and so were analyzed more closely. A review of participants' medication administration records for the period of time they were enrolled in the program revealed that quetiapine fumarate and olanzapine were the 2 antipsychotics given most frequently when an antipsychotic was ordered. A small sample size was a factor in drawing any conclusions. Residents with dementia can be at the same stage of illness yet vary in need for medication. It could also be speculated that there was little or no carryover with any positive results of reduced anxiety and agitation, i.e., medication was given to assist in managing distressing behavioral symptoms.

Summary

This study has several strengths. The intervention was an interdisciplinary effort that is inexpensive and easy to replicate. Multiple measures were used that were, with the exception of the tracking sheets, valid and reliable instruments. The value of the qualitative data cannot be ignored. The data suggest that the Closing Group may have partially met goals related to decreased anxiety and agitation and increased interaction. The consensus of the treatment team was that it made a difference in the participants' anxiety and agitation, the quality of life of other residents, and the quality of life on the units.

There are also several limitations to the current study that prevent making firm conclusions concerning goals being met or not met based on statistical analysis. The progressive nature of dementia, acute physical illness, small sample size, lack of validity and reliability of tracking sheets, and staff changes were among the variables that affected data. This study has hypotheses that are too numerous and too detailed, which makes clear interpretation of results difficult. The assessments were completed by individuals who were employees of the project, which may have created a bias.

A future study involving several long-term care facilities in a collaborative effort would serve to produce a larger sample. Replication of results would serve to encourage long-term care staff to adopt this intervention or a facsimile and better meet the needs of all residents. It may also be beneficial to consider other outcomes that may result from providing therapeutic recreation in a Closing Group format, such as the

affect the intervention has on resident falls during the end of the day, as well as fewer psychotropic drugs needed during this time, better nutrition intake for evening meals, and less evening staff turnover.

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