Pilot Study of Behavioral Treatment in Dementia Care Units

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Purpose: This article reports on the development and use of behavioral treatment as a well-being intervention for individuals with dementia residing at special care units in a nursing home. Design and Methods: The project took place upon the construction and opening of two new homelike units for dementia care in a rural community-care center. Twenty older adults with Alzheimer’s disease or related dementia diagnoses participated. One of the units was randomly selected for its residents to receive the behavioral treatment, and the other unit received usual care. A trained nursing assistant implemented the behavioral treatment three times per week for 20 to 30 min each session. The intervention lasted for 3 months. Measures taken before and after the intervention included depression and behavioral disturbance. Results: Compared with the usual care group, the behavioral treatment group demonstrated reduced severity in behavioral disturbance in terms of being troublesome to caregivers or dangerous to residents. Both the behavioral treatment and the usual care groups demonstrated a reduced frequency of behavioral disturbance overall. There were no differences with regard to depressive symptoms or diagnoses. The behavioral treatment was enthusiastically received by the facility staff and by the family caregivers of the participants.

Key Words: Dementia; Dementia care units; Well-being intervention

Special care units based in nursing homes, which are designed for residents with dementia, were created to help reduce the impact of dementing disorders on the well-being of individuals who suffer from them. In addition to having special training of staff, factors such as providing space (for wandering), reducing noise, programming appropriately, and providing a homelike setting have been identified as beneficial components to special care units. The characteristics of residents living in special care units, like the characteristics of residents of nursing homes in general, have changed during the past decade. Whereas special care units were created with the idea of serving those in the mild to moderate range of impairment (Reisberg’s 1982 Global Deterioration Scale of Stage 3 or early Stage 4; see Reisberg, Ferris, de Leon, & Crook, 1982), residents in special care units are now more clearly in the middle to later stages of moderate impairment (Global Deterioration Scale of Stage 4 and Stage 5). Therefore, the behavioral disorders accompanying dementia are more apparent and severe in the current group of residents than they were a decade ago. Nursing homes are thus looking for cost-effective means of training the staff on these units to interact with residents in ways that produce greater well-being. Well-being typically has been considered to be closely related to depression, negative or positive affect, but that definition was expanded for this study. Individuals with dementia often demonstrate their well-being in terms of agitation or behavioral disturbance (Camp & Nasser, 2003) in addition to mood disorders or negative affect.

Behavioral programming, based on Lewinsohn’s Pleasant Events model (Zeiss & Lewinsohn, 1986), is appealing as a method of programming on the special care unit. Zeiss and Lewinsohn discussed the adaptation of behavioral theory to the treatment of older adults. They noted three core components: (a) explicitly discussing the general rationale for the approach, emphasizing that what a person does is related to how...
he or she feels; (b) explicitly instructing clients that, on a daily basis, clients need to increase pleasant events and decrease negative ones; and (c) explaining that relaxation and mood monitoring are among the common strategies to assist the client in improving. Teri, Logsdon, and McCurry (1997) demonstrated that behavioral treatment was effective in reducing depression in both adults with dementia and their caregivers. These data also were compelling because it was the caregivers who were trained and who carried out the behavioral treatment with their loved ones.

Lichtenberg and colleagues carried behavioral programming one step further (Lichtenberg, Kimbarow, MacKinnon, Morris, & Bush, 1995; Lichtenberg, Kimbarow, Wall, Roth, & MacNeill, 1998). In addition to teaching and helping clients plan for pleasant events, clients were to have pleasant events facilitated by a staff member. Lichtenberg and associates tested a model of behavioral treatment for depression that they adapted for medical rehabilitation units and nursing homes. The researchers also emphasized the training of individuals from professions other than mental health, and these trained individuals administered the treatment. Our purpose in the current pilot practice-intervention study was to determine whether it is feasible to use the Lichtenberg model of behavioral treatment in a special care unit, and whether the treatment can (a) be extended to become a general well-being intervention and (b) be administered by a trained nursing assistant.

The Marquette County Medical Care Facility built a pair of new homelike special care units for individuals with dementia. These 15-bed units opened in the summer of 2002. The units each have their own kitchens and activity areas, as well as bedrooms that afford personal privacy. The programming is focused on tasks of daily living, and residents participate in these tasks to the extent they are able. The overall philosophy of the unit allows residents to sleep in and to get up when they want (6:30–10 a.m.). Residents are encouraged to come to breakfast in bathrobes and slippers if they do not wish to get bathed and dressed immediately on waking. Medications are administered in the kitchen setting. Television and music are kept off during meal times and kept to a minimum throughout the day. The activity schedule is based mostly on small-group activity. An active schedule of events is available for residents and typically includes activities such as these: 9:00 a.m., artistic expression; 10:00 a.m., exercise; 2:00 p.m., rhythm band; 3:45 p.m., walking group; 6:30 p.m., activities off unit.

### Training for Nursing Assistants in Behavioral Treatment

Paraprofessionals who possess interpersonal warmth and empathy, who are given a structured approach to treatment, and who are supervised regularly are able to provide effective treatment (see Lichtenberg, 1994, for review). These characteristics were thus critical in addition to the training provided. Five hours of didactic training, weekly onsite supervision by the unit leader (J. Kemp-Havican), and a monthly conference call with the project leader (P. Lichtenberg) provided the training opportunities. In addition, 4 weeks into treatment, the project leader observed the behavioral treatment by the nursing assistant for 1.5 days. The didactic training consisted of four parts. The first part was an overview of dementia with a focus on the progressive nature of the disease, its effects on cognition, and behavioral disturbances. The second part was an overview of depression, with a focus on a wide variety of treatment strategies (pharmacological, exercise, and behavioral treatment). The third part was an overview of depression in dementia, with an emphasis on potential comorbid conditions and the changing phenomenology of depression in dementia. The fourth part concerned behavioral treatment, with a focus on its basic tenants as well as a step-by-step instruction in the technique. This step-by-step method is explicitly laid out in the manual Behavioral Treatment for Depression in Medical and Nursing Home Settings (Lichtenberg et al., 1998). A copy of the didactic materials is available from P. Lichtenberg.

### Methods

#### Participants

The two special care units were physically separated and the residents underwent their treatment programming away from one another on their respective units. This facility layout enabled us to make a random selection of one unit to receive behavioral treatment and the other unit to receive usual care. Participants were 20 (out of 23) residents who were on one of the two special care units in the Marquette facility and who completed the initial assessment, the 3-month treatment, and the 3-month follow-up assessment. Demographic characteristics of the participants can be found in Table 1. The procedures were as follows: residents were engaged in a one-to-one pleasant event three times a week for 20–30 min each session for 3 months.

#### Activities Chosen as Pleasant Events

The Pleasant Events Schedule for Alzheimer’s disease (Teri & Logsdon, 1991) was administered to the primary informal caregiver of the nursing home resident. This, combined with brainstorming sessions by the nursing assistants on other areas of pleasurable events for each resident, comprised the way activities were matched with residents. Residents were approached at a variety of different times throughout the morning and afternoon. The times were regular but differed with each resident, because the residents had different group activities in which they spent time as well. That is, each resident in behavioral treatment also received the full complement of usual care group activity programming. Each session spent with the resident went as follows:

1. The nursing assistant gives an explicit explanation that how one feels is related to what one does, and that today the resident is going to spend time in some pleasurable activities.
2. If tolerated by the resident, the nursing assistant...
Geriatric Depression Scale.

T2 mood rating 8.2 (1.0) — T1 mood rating 4.4 (0.36) — T2 GDS 3.9 (3.4) 5.8 (3.6) — T1 GDS 3.6 (3.2) 4.5 (1.8) — T2 Cornell Scale 12.9 (7.2) 9.9 (5.9) — T1 Cornell Scale 13.1 (7.0) 11.3 (5.8) — T2 behave – AD global score 1.3 (0.30) 2.2 (0.32) — T1 behave – AD global score 1.9 (0.69) 1.4 (0.78) — T2 behave – AD total score 8.0 (3.8) 7.0 (4.1) — T1 behave – AD total score 15.5 (9.8) 12.4 (7.2) — Education 11.3 (2.5) 11.2 (2.0) — Age 84.8 (4.9) 85.0 (5.1).

The Nursing Assistant plans explicitly for the next pleasant event, offering options for the next pleasant event together.

The nurse assistant engages the resident in the activity for 15 to 20 min.

Mood Rating 2 is conducted.

The nursing assistant compares the resident’s mood at baseline to his or her mood at the end of the pleasant event and illustrates to the resident how his or her mood changed during their time together.

The nursing assistant plans explicitly for the next time, offering options for the next pleasant event session.

Table 2 lists the major behavioral treatment activities utilized in this study. Activities ranged from quiet (e.g., watching birds) to physically active (e.g., walking) and social (e.g., small group). Nine participants who received the entire 13 weeks of behavioral treatment completed a total of 298 sessions out of a possible 351 (85%), for an exceptional rate of implementation with a group of frail elders.

Assessments

A geriatric neuropsychologist (S. MacNeill) who was blinded to the treatment condition of the residents completed the behavioral and affected assessments. Information for these ratings was based on clinical interviews by the neuropsychologist, a thorough review of the medical record, and interview information from the charge nurse of the unit. Given the rural location of the facility, and its distance from the project di-rector, the neuropsychologist assessed all residents at baseline and follow-up within 1 day of one another; all residents began and ended treatment (or usual care) within the same week.

Notes: T1 = Time 1; T2 = Time 2; AD = Alzheimer’s disease; GDS = Geriatric Depression Scale.

Table 2. Behavioral Treatment Activities

<table>
<thead>
<tr>
<th>Behavioral Treatment Activities</th>
<th>Total Activities (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correspondence (holiday cards, letters)</td>
<td>6</td>
</tr>
<tr>
<td>Reminiscence (old photos, verbal recollections)</td>
<td>22</td>
</tr>
<tr>
<td>Social activity (special small group, one-to-one visiting)</td>
<td>18</td>
</tr>
<tr>
<td>Pampering (providing a massage, aroma therapy, hair care)</td>
<td>27</td>
</tr>
<tr>
<td>Quiet activity (watch birds, reading)</td>
<td>11</td>
</tr>
<tr>
<td>Physical activity (walking, fixing things)</td>
<td>16</td>
</tr>
</tbody>
</table>

Measures Used

The Behave-AD.—The Behave-AD (Reisberg et al., 1987) was created to measure the most common behavioral problems experienced with Alzheimer’s disease. Items included paranoia, hallucinations, activity disturbances, aggressiveness, affective disturbances, anxieties, and phobias and fears (ranges 0–75). In addition to a total score, there is also a global rating of the magnitude of trouble the behavior is to the caregiver or the level of danger to the patient. Higher scores indicate more problems with behavioral disturbance (range 0–3). The two measures, although related, measure different aspects of behavioral disturbance. The total score provides a frequency count of the number and type of behavioral problems. The global rating measures the magnitude of the behavioral problems present.

Geriatric Depression Scale–15.—The Geriatric Depression Scale (GDS) is by the far the self-report measure with the most applicability to older adults with dementia. Espiritu, Fitzgerald, Steinberg, Mast, and Lichtenberg (2001) found that dementia patients’ self-report of depression was a unique and significant predictor of the caregiver reports of the patients’ instrumental activities of daily living (IADL) scores. These findings held even when the sample was further divided into individuals who were more severely cognitively impaired, which was defined as scoring <15 on the Mini-Mental State Examination (MMSE). Higher scores indicate more self-reported problems with depression (scores range 0–15).

Cornell Scale for Depression in Dementia.—The Cornell Scale is a 19-item measure whose items were constructed so that they could be completed on the basis of interviews and direct observation (Alexopolous, Abrams, Young, & Shamoian, 1988). This rating scale was created especially for assessment of depression severity in dementia patients. The rater first conducts an in-depth interview with the dementia patient’s caregiver, and then he or she briefly interviews the patient. Internal consistency and interrater reliability were reported as strong in the validation study and in several more recent studies. One final advantage of the Cornell scale was its validation against the criteria for minor depression. Higher scores indicate increased ratings of depression (scores range 0–38).
Statistical Analyses

We used a $2 \times 3$ repeated measures analysis of variance for the three main outcome variables (Behave-AD, GDS, and the Cornell scale) between the two groups (behavioral treatment and usual care). To investigate the mood ratings from baseline to endpoint of each session, we used a repeated measures $t$ test.

Results

We found that all participants were suffering from dementia, with 60% carrying the clinical diagnosis of probable Alzheimer’s disease. We diagnosed approximately 50% of the residents as suffering from a major or minor depression on baseline, and we diagnosed 38% of the patients with depression on follow-up. The groups were equivalent in terms of the Mean Global Deterioration scale, with a mean of 4.5 and a standard deviation of .9, and in terms of MMSE scores [14.5 (1.2) vs 14 (.8)]. Table 1 shows the means and standard deviations of the demographic and clinical data. There were no differences between the behavioral treatment and the usual care group on any of the demographic or baseline clinical measures. The mean age of the individuals in the sample was 85 years, and they had a mean education of 11 years. Ninety percent of the participants were women. Consistent with the cultural makeup of the region, all participants were of northern European descent, with most having Finnish backgrounds.

The Behave-AD was the only clinical scale to demonstrate any significant change, either between Time 1 and Time 2, or between groups over time. As we can see in Table 1, both groups demonstrated significantly less frequent behavioral disturbance at Time 2 than at Time 1 ($F = 15.5, p < .001$). In addition, the behavioral treatment group had their behavioral disturbances rated as less troubling for the caregivers or dangerous to the participant at Time 2 than at Time 1, whereas the opposite was true for the usual care group. A repeated measures analysis of variance demonstrated a Time × Group interaction such that the behavioral treatment group evidenced significant improvement versus the usual care group ($F = 8.4, p < .01$), indicating that their behavioral problems were less troublesome or dangerous over time; in contrast, the usual care group actually had an increase in troublesome or dangerous behavioral problems over time.

There were no statistically significant differences on the depression measures. On the Cornell scale, residents obtained slightly lower ratings at Time 2, whereas their overall GDS score was slightly higher at Time 2. Although there were no differences in depression over time, there were significant differences in mood ratings from baseline (before each pleasant event) to after the event was concluded ($F = 12.4, p < .01$).

Discussion

This is the first study that we know of that uses behavioral treatment as an overall well-being intervention, rather than restricting it to depression treatment. The outcome measure used to assess behavioral disturbance is highly related to the behavioral ratings that facilities report with the Minimum Data Set, making the results pertinent to the nursing home industry. The quantitative data demonstrated some initial promise in that the impact of behavioral problems was significantly reduced in the behavioral treatment group but not in the usual care group. Although global depression outcomes were not affected by the intervention, participants were eager to participate in the program, and they rated their moods as significantly better following their engagement in the events themselves.

Of equal importance to the quantitative outcome data was the level of satisfaction with and enthusiasm for the program by residents, staff, and family caregivers. The individualized, one-to-one approach enabled project staff to guide families as to how to have more productive and enjoyable visits. Residents frequently discussed their activities with family caregivers, surprising many family caregivers who noted that this was the first time their loved ones were remembering and discussing events at the nursing home.

The behavioral treatment group incurred the following expenses. A half-time nursing assistant was hired to deliver all the behavioral treatment. She also was given a small budget for supplies for the treatment. The nursing assistant was supervised by the unit manager (J. Kemp-Havican), and, more infrequently, by the project director (P. Lichtenberg). This investment was so satisfying to the individuals in charge of the home that they decided to keep the program in place after the research project had ended. Although behavioral treatment delivered in a one-to-one fashion may not be feasible for larger units, this project demonstrated the promise of such an approach in special care units.

References


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