

# Knowledge of and Attitudes Toward Nonpharmacological Interventions for Treatment of Behavior Symptoms Associated With Dementia: A Comparison of Physicians, Psychologists, and Nurse Practitioners

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Received April 21, 2011; Accepted July 7, 2011

Decision Editor: Rachel Pruchno, PhD

**Purpose of the Study:** Behavior problems are common in nursing homes. Current guidelines recommend nonpharmacological interventions (NPHIs) as first-line treatment, but pharmacological regimens (PIs) continue to be used. Given differences in background and training of those who treat behavior problems in residents, we compared attitudes of physicians (MDs), psychologists (PhDs), and nurse practitioners (NPs) concerning PI and NPHI usage as well as knowledge of NPHIs. **Design and Methods:** One hundred and eight MDs, 36 PhDs, and 89 NPs responded to a web-based questionnaire that captured level of agreement with statements concerning treatment of behavior symptoms and familiarity with NPHIs. **Results:** NPs were the most favorable toward NPHIs. MDs were significantly more favorable to the use of PIs than were PhDs, with attitudes of NPs falling in between. All felt that NPHI usage should increase and that NPHIs should be implemented before using PIs but also believed that PIs work well for behavior problems. MDs had significantly lower knowledge of NPHIs than PhDs or NPs. Overall, NPHI knowledge was similar for PhDs and

NPs, although they differed on their use of specific interventions. **Implications:** As levels of knowledge and familiarity with NPHIs differed among providers, it is conceivable that all might benefit from training and experience with a wider range of NPHIs. Future studies might evaluate the impact of a uniform understanding of NPHI on communication and teamwork in nursing homes and examine ways to enhance a multidisciplinary approach that would allow for the tailoring and individualization that is required of successful interventions.

**Key Words:** Psychosocial, Nursing homes, Long-term care, Management, Intervention, Dementia

Behavior symptoms are commonly observed in dementia. Symptoms can include physical or verbal aggression, resisting care, screaming or repetitive vocalizations, wandering or pacing, restlessness, delusions, and hallucinations. These problems have been observed in 80% to more than 90% of nursing home residents with dementia (Brodaty et al., 2001; Cohen-Mansfield, Marx, &

Rosenthal, 1989; Margallo-Lana et al., 2001; Selbæk, Kirkevold, & Engedal, 2007; Zuidema, Koopmans, & Verhey, 2007).

Treatment of behavior symptoms in residents with dementia has been primarily pharmacological (Taipale, Bell, Soini, & Pitkälä, 2009). The questionable effectiveness of pharmacologic treatment (Ballard et al., 2008; Rosenheck et al., 2007) and the potential for side effects (Citrome, 2007; Gill et al., 2007; Jeste et al., 2008; Madhusoodanaan, Shah, Brenner, & Gupta, 2007) of medications makes pharmacological management an undesirable first-line treatment for behavioral problems in dementia patients. Moreover, current guidelines recommend that nonpharmacological interventions be used as the first line of treatment (American Geriatrics Society and American Association for Geriatric Psychiatry Expert Panel on Quality Mental Health Care in Nursing Homes, 2003; Howard, Ballard, O'Brien, & Burn, 2001; Salzman et al., 2008). These guidelines are consistent with the current understanding of the etiology of dementia-related behavioral symptoms, which combine physiological, environmental, systemic, psychosocial, and care-related issues (Cohen-Mansfield & Jensen, 2008a; Cohen-Mansfield, Jensen, Resnick, & Norris, 2011; Sloane et al., 1998; Zuidema et al., 2007).

Physicians (MDs), psychologists (PhDs), and nurse practitioners (NPs) are commonly consulted in regard to the management of behavioral problems in nursing home residents. Given the differences in their educational backgrounds, training, expectations, areas of expertise, perspectives on abnormal conditions, and scope of practice, members of each profession may approach the management of behavioral problems differently. MDs may focus on a medical model that posits a physiological basis for disorders and often utilize a pharmacological approach in their treatment (Cohen-Mansfield et al., 2011). In contrast, PhDs are nonmedical personnel whose training is centered around behavioral and psychosocial models of disease and methods of treatment. The role and training of NPs combines behavioral, psychosocial, and medical models to understand and manage diseases, such as dementia and the associated behavioral problems.

The purpose of this study was to explore the attitudes and beliefs of MDs, PhDs, and NPs concerning the use of pharmacological (PI) versus nonpharmacological (NPHI) interventions for behavioral problems in nursing home residents

with dementia. Given background and training, we hypothesized that PhDs would be more knowledgeable and supportive of the use of NPHI and less in favor of the use of PI compared with MDs. In addition, we hypothesized that the attitudes toward and knowledge of NPHI of NPs would be similar to those of PhDs, and the attitudes of NPs regarding the use of PI would be similar to those of MDs.

## Methods

Information regarding attitudes and knowledge of interventions for behavior symptoms was obtained using a web-based survey of close-ended items. Responses from MDs were solicited by E-mailing a link to the survey web page to 3,581 active members of the American Medical Directors Association (AMDA) during January and February 2006. PhDs were recruited by sending similar notices to 170 members of the Psychologists in Long-Term Care network and NPs through notices to the 1,000 members of the Gerontological Advanced Practice Nurses Association during August and September 2007. Informed consent was obtained from all participants, and ethical approval was given by the Institutional Review Board of the Research Institute on Aging. Information regarding the development of the questionnaire and issues involved in its administration is presented elsewhere (Cohen-Mansfield & Jensen, 2008a).

## Sample

Information concerning attitudes toward treatment of behavior symptoms and knowledge of NPHI was provided by 108 MDs, 36 PhDs, and 89 NPs. Response rates could not be computed exactly because we could not determine how many persons actually received the survey notification E-mails or how many did not work in nursing homes. In several cases, individuals reported not having received these, and some computer systems may have rejected the E-mails as spam.

MD, PhD, and NP respondents differed significantly in age, gender, the percent of time they spent in clinical work, the length of time they had been in nursing home practice, number of nursing homes with which they were affiliated, whether or not they had a faculty appointment or worked in a teaching facility, and in population density of the area in which the facility was located (Table 1). PhDs tended to be older than the other groups, with the largest percentage (44%) in the 56 to 70+ years

Table 1. Significant Differences in Demographic and Institutional Characteristics of Physicians, Psychologists, and Nurse Practitioners

	MD ( <i>n</i> = 108)	PhD ( <i>n</i> = 36)	NP ( <i>n</i> = 89)	Significant <i>p</i> values
Age (years, %)				
26–40	21	19	8	<.010
41–55	55	36	65	
56–70+	24	44	27	
Male	68	43	1	<.001
Faculty appointment	61	29	21	<.001
Affiliation with facility (%)				
Staff member	N/A	8	23	<.001
Consultant	N/A	92	33	
Other	N/A	0	44 <sup>a</sup>	
Number of nursing homes				
Single (%)	26	9	31	.049
% Time in clinical work (mean ± <i>SD</i> )	53 ± 34	75 ± 27	81 ± 29	.001
Years in nursing home practice (mean ± <i>SD</i> )	15 ± 9	15 ± 10	11 ± 9	.002
Facility location (%)				
Rural	25	36	13	.006
Suburban	42	44	39	
Urban	33	19	49	
Teaching facility	23	18	42	.009

<sup>a</sup>Independent health care provider (18), work with physician (3), contracted provider (5), clinic (3), Evercare (1), HMO (2), network employee (2), facility medical director (1), hybrid staff/consultant (1), represent insurance company (1). N/A=not available.

range. In contrast, the majority of MDs (55%) and NPs (65%) were between 41 and 55 years of age. Two thirds of the MDs were male compared with only 1% of the NPs. MDs were the most likely of the three groups to have a faculty appointment (61%), but NPs were the most likely to be working in a teaching facility (42%). Ninety-six percent of the MDs had specialties in either internal medicine or family practice; only one was a psychiatrist. The NPs described themselves as primary care providers and reported the fewest years in nursing home practice. MDs spent close to half of their time in clinical work (53%), compared with the 75% and 81% reported by PhDs and NPs, respectively, but 75% of the MDs also served as full or part-time medical directors. Twenty-three percent of the NPs were employed by the nursing home, and 33% were consultants; the self-descriptions of the remaining 44% are listed in Table 1. Almost all PhDs were consultants (92%), with 91% serving multiple facilities. Only 13% of the NPs worked in rural areas, whereas 49% were in cities; this trend was reversed for PhDs, with 36% in rural and 19% in urban locations.

### Measures

**Attitudes Toward Interventions for Behavior Symptoms.**—All respondents were asked to indicate their degree of agreement with 13 statements

regarding interventions for behavior symptoms using a Likert-type scale for which possible responses were 1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *undecided*, 5 = *somewhat agree*, 6 = *agree*, and 7 = *strongly agree*. These statements were organized into three categories: attitudes favoring the use of NPHI (five items), attitudes favoring the use of PI (three items), and attitudes concerning staff behavior and resources (five items).

In order to extend the areas of investigation of clinician attitudes regarding interventions for behavior symptoms, five additional attitude statements were added to the questionnaire that solicited responses from PhDs and NPs. These respondents were asked to indicate their degree of agreement with these additional items using the same scale described earlier. These statements covered opinions about medication dosage levels and potential limitations on the use of NPHI due to funding, the clinician's own knowledge of these treatments, and insufficient professional staff.

**Knowledge of Nonpharmacological Interventions.**—All respondents were also asked to indicate their familiarity with 30 NPHI using the following scale: 1 = *not at all familiar*, 2 = *somewhat familiar*, 3 = *familiar but have not used it myself*, 4 = *familiar and have discussed it with staff*

members but have not practiced it myself, 5 = familiar and have used this intervention, and 6 = familiar and able to train others to use this intervention. The items listed represented eight categories of interventions: environmental modification (three items), behavior change/modification (three items), behavior accommodation (five items), self-affirming interventions (three items), pleasant events/structured activities (six items), social contact—real or simulated (four items), sensory interventions (four items), and cognitive interventions (two items).

### Statistical Analysis

For the attitude statements, mean degree of agreement was computed for each of the three categories for each professional group. For the individual attitude statements, responses were dichotomized by combining those reporting some level of agreement (ratings of 5, 6, or 7) or disagreement (ratings of 1, 2, or 3). For the knowledge ratings, an overall mean rating and means for each of the eight categories of intervention were computed for each group. For the individual interventions, ratings were dichotomized by combining those the respondents reported having used in the past (ratings of 5 or 6) versus those the respondents reported not having used (ratings of 1, 2, 3, or 4). Knowledge ratings were also dichotomized to represent those having no familiarity at all with the intervention (rating of 1) versus those who had at least some familiarity with it (ratings of 2, 3, 4, 5, or 6).

Analyses of variance were used to compare MDs, PhDs, and NPs on the mean ratings computed for both attitudes and knowledge. The groups were compared on the dichotomized scores for the individual items using  $\chi^2$  analyses.

## Results

### *Attitudes Toward Interventions for Behavior Symptoms*

Table 2 presents the dichotomized percent of MDs, PhDs, and NPs expressing agreement with the attitude portrayed by each statement. Group mean ratings for the category of statements that favored the use of NPHI, those that favored the use of PI, and items concerning staff behavior and resource issues are also presented.

With respect to the individual statements, percent agreement expressed by MDs, PhDs, and NPs

was more likely to be similar (9 of 13 items) than different. Almost all clinicians agreed that NPHI should be used more often than they currently are used (95%–100%) and that NPHI should be used before PI (92%–97%). The belief that problematic behaviors cannot be handled by NPHI was comparatively low (16%–28%). Most respondents, nevertheless, still held the opinion that psychotropic drugs work well for disruptive behaviors (73%–82%), even though there was little belief that PI is more important than NPHI (5%–8%). Almost all clinicians believed that their treatment of agitated behaviors addresses the etiology of these behaviors (87%–98%). The groups were also of similar agreement regarding the effect of various staff behaviors and resources in influencing the clinician's use of interventions: specifically, that medication is requested too quickly by nursing staff (76%–87%), that resources are insufficient to use NPHI (65%–72%), and that staff does not know how to use NPHI (48%–66%).

Significant group differences in percent agreeing were seen for four of the individual statements. These included whether PI should be the treatment of last resort for dementia-related behavior symptoms, whether there are no PI for some behavior symptoms, and frustration with the nursing staff for not trying an NPHI before contacting the clinician. In all these cases, the highest percent agreement with these statements was expressed by NPs and the lowest by PhDs. PhDs, however, were the most likely to consider staff inattention to the resident as an etiologic factor in agitated behavior, and MDs were least likely to agree with this statement.

There were significant differences among groups in mean ratings of agreement to each of the three categories of attitudes. NPs had the highest mean agreement overall with the attitudes favoring NPHI (5.64), differing significantly from both MDs (5.28) and PhDs (5.14), whose agreement ratings were similar. The mean ratings above 5 for all groups indicated that, on average, respondents were in agreement with these statements. In contrast, mean group ratings for the category of statements favoring PI were all below 4, indicating general disagreement. Here, MDs had the highest levels of agreement (3.53), and PhDs had the lowest (3.08); the mean rating for NPs (3.40) did not differ significantly from either group. With respect to those items concerning staff behavior and resources, category means indicated neither overall agreement nor disagreement with these statements or a possible split in attitudes in this area.



**Table 2. Percent Agreement With Attitude Statements and Mean Category Agreement for Physicians, Psychologists, and Nurse Practitioners Regarding Interventions for Behavior Symptoms**

Statement <sup>a</sup>	Physicians	Psychologists	Nurse practitioners	Significant <i>p</i> values
<b>Attitudes favoring the use of nonpharmacological treatments</b>	<b>5.28</b>	<b>5.14</b>	<b>5.64</b>	<b>.002</b>
Nonpharmacological treatments should be used more often than currently used (%)	95	100	99	
Nonpharmacological interventions should be used before pharmacological ones (%)	92	97	97	
In my treatment of agitated behaviors, I treat the etiology of the behaviors (%)	92	87	98	
Psychotropic medication is the treatment of last resort for persons with dementia and agitation (%)	59	46	79	.001
For many agitated behaviors, there are no pharmacological treatments (%)	61	36	67	.009
<b>Attitudes favoring the use of pharmacologic treatments</b>	<b>3.53</b>	<b>3.08</b>	<b>3.40</b>	<b>.038</b>
Psychotropic drugs work well for behavior problems (%)	82	73	81	
Most behaviors cannot be handled by behavioral or nonpharmacological interventions (%)	24	16	28	
Drug treatment is far more important than nonpharmacologic intervention (%)	8	7	5	
<b>Attitudes concerning staff behavior and resources</b>	<b>4.24</b>	<b>4.47</b>	<b>4.86</b>	<b>.001</b>
Nursing staff request medication too quickly, more than it is really needed (%)	76	79	87	
There are insufficient resources to use nonpharmacological interventions (%)	65	66	72	
I am frustrated that the nursing staff does not perform a nonpharmacologic evaluation and treatment prior to turning to me (%)	52	26	69	<.001
The staff members do not know how to intervene nonpharmacologically (%)	48	66	62	
Many agitated behaviors stem from the staff not paying attention to the resident's request (%)	48	85	79	<.001

<sup>a</sup>Statements were rated using the following scale: 1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *undecided*, 5 = *somewhat agree*, 6 = *agree*, and 7 = *strongly agree*.

The category mean of NPs (4.86) was significantly higher than that of the MDs (4.24).

The statements added to the questionnaire submitted to PhDs and NPs are presented in Table 3. Rate of agreement/disagreement did not differ between these groups on any of the attitude statements listed. Approximately half to two thirds of each group agreed that drug treatments

are used in too high doses and that they are limited in their use of NPPI due to lack of government funding or to dependence on insufficient professional staff. Only 28% overall agreed that psychiatric consult is unavailable. Few (12% overall) believed that they are limited in their use of NPPI due to their own lack of knowledge of these methods.

**Table 3. Percent Agreement With Attitude Statements of Psychologists and Nurse Practitioners**

Statement	Psychologists (%)	Nurse practitioners (%)
Drug treatments are used in too high doses.	46	47
Psychiatric consult is unavailable.	38	24
I am limited in my use of nonpharmacological treatment because of lack of government funding.	60	49
I am limited in my use of nonpharmacological treatment because I lack knowledge about these treatments.	9	13
I am limited in my use of nonpharmacological treatment because I am dependent on insufficient professional staff.	58	67

*Note:* Differences were not statistically significant.

**Table 4. Percent of Physicians, Psychologists, and Nurse Practitioners Reporting Use of Each Intervention and Mean Knowledge Ratings for Intervention Categories**

Intervention <sup>a</sup>	Physicians	Psychologists	Nurse practitioners	Significant <i>p</i> values <sup>b</sup>
<b>Overall knowledge score</b>	<b>3.71</b>	<b>4.38</b>	<b>4.15</b>	<b>&lt;.001</b>
<b>Environmental modification</b>	<b>4.82</b>	<b>5.19</b>	<b>5.09</b>	<b>.018</b>
Removal of physical restraints (%)	86	54	91	<.001
Provide orienting stimuli (e.g., clock, nightlight, signs, pictures; %)	72	83	84	
Environmental accommodation of behavior/environmental modification (%)	66	97	75	.001
<b>Behavior change</b>	<b>4.49</b>	<b>5.63</b>	<b>4.91</b>	<b>&lt;.001</b>
Redirection (%)	83	100	95	.002
Communication techniques for dementia patients (%)	56	86	77	<.001
Behavioral therapy treatments/behavior modification/alter precipitants or consequences (%)	47	97	62	<.001
<b>Behavior accommodation</b>	<b>4.25</b>	<b>4.67</b>	<b>4.61</b>	<b>.008</b>
Monitors for wandering (%)	81	44	85	<.001
Restructuring routine (%)	65	91	81	.002
Modification of activity of daily living care to meet individual needs (%)	62	78	74	
Accommodating behavior (%)	49	66	49	
Change bathing methods (%)	26	47	57	<.001
<b>Self-affirming interventions</b>	<b>3.71</b>	<b>5.15</b>	<b>4.53</b>	<b>&lt;.001</b>
Pursuing old roles or hobbies/self-identity interventions (%)	44	91	64	<.001
Reminiscence therapy (%)	34	78	71	<.001
Validation (%)	34	78	63	<.001
<b>Pleasant events/structured activities</b>	<b>3.59</b>	<b>4.20</b>	<b>3.98</b>	<b>&lt;.001</b>
Physical activity (%)	73	54	85	.002
Activity therapy/recreation/structured activities (%)	71	66	74	
Pleasant events treatments (%)	37	92	57	<.000
Outdoor interventions (%)	34	42	47	
Games designed for persons with dementia (%)	23	36	39	.050
Montessori based activities (%)	4	11	11	
<b>Social contact—real or simulated</b>	<b>3.11</b>	<b>3.63</b>	<b>3.62</b>	<b>.002</b>
Pet therapy (%)	62	33	66	.003
Social contact interventions (%)	29	70	68	<.001
Respite videotapes (%)	13	17	24	
Simulated presence therapy (%)	6	17	12	
<b>Sensory interventions</b>	<b>3.08</b>	<b>3.12</b>	<b>3.48</b>	<b>.018</b>
Music therapy (%)	38	19	55	.001
Massage therapy (%)	15	6	28	.006
Aromatherapy (%)	7	8	21	.011
Bright light treatments (%)	9	9	12	
<b>Cognitive interventions</b>	<b>2.36</b>	<b>4.00</b>	<b>3.00</b>	<b>&lt;.001</b>
Memory books (%)	19	56	43	<.001
Spaced retrieval (%)	5	29	7	<.001

<sup>a</sup>Statements were rated using the following scale: 1 = *not at all familiar*, 2 = *somewhat familiar*, 3 = *familiar but have not used it myself*, 4 = *familiar and have discussed it with staff members but have not practiced it myself*, 5 = *familiar and have used this intervention*, and 6 = *familiar and able to train others to use this intervention*.

<sup>b</sup>*p* values for means refer to the results of analyses of variance and those for percents refer to  $\chi^2$  tests. Percents indicate ratings of 5 or 6.

### Knowledge of Nonpharmacological Interventions

Table 4 presents the percent of providers reporting having used each NPHI (rating of 5 or 6), along with overall mean ratings and mean ratings for the categories of interventions for each group. Overall, mean knowledge of NPHI was similar for PhDs

and NPs, with ratings for each group being 4.38 and 4.15, respectively, and both groups were significantly more knowledgeable than MDs (3.71). This is reiterated by the number of different interventions each of the groups reported having practiced: 12.36 (range = 0–29), 16.36 (range = 7–25),

and 16.59 (range = 0–29) for MDs, PhDs, and NPs, respectively. Mean data also signal a varying degree of knowledge of the different intervention categories: With all groups combined, knowledge is greatest for environmental modification (4.98), followed by behavior change (4.82), behavior accommodation (4.45), self-affirming interventions (4.24), pleasant events/structured activities (3.83), social contact interventions (3.38), sensory interventions (3.23), and cognitive interventions (2.86).

The professional groups also differed significantly in their reported knowledge of all categories of NPHI. MDs demonstrated the lowest mean knowledge ratings in all categories. PhDs had the highest mean levels of knowledge of all intervention categories except sensory interventions for which NPs indicated the greatest degree of familiarity. Level of knowledge of MDs differed significantly from that of NPs in all categories and from that of PhDs in all categories except sensory interventions. Knowledge of PhDs was significantly greater than that of NPs in the areas of behavior change, self-affirming interventions, and cognitive interventions; for all other categories of interventions, mean ratings reported by both of these provider groups were similar.

With respect to the individual NPHI, the groups differed significantly in the percent reporting use in practice of 21 of the 30 interventions listed. PhDs had the highest percentage of use in the case of 12 of these 21 interventions and NPs in 9; MDs reported the lowest percentage of use of all 21 interventions. All the PhDs reported having used redirection, and more than 90% reported the use of environmental modification, behavioral therapy, pleasant events treatments, pursuing old roles or hobbies, and restructuring routine. More than 90% of NPs reported using removal of physical restraints, and 85% had used monitors for wandering and activity therapy. The most frequently used interventions reported by MDs were removal of physical restraints (86%), redirection (83%), and monitors for wandering (81%).

PhDs rarely used aromatherapy (8%), bright light treatments (9%), and Montessori-based activities (11%). Rates of use of these interventions by MDs were similarly low (7%, 9%, and 4%, respectively) as were those for spaced retrieval (5%) and simulated presence therapy (6%). The interventions that were not likely to be used by NPs were spaced retrieval (7%), Montessori-based activities (11%), simulated presence therapy (12%), and bright light treatments (12%).

Lack of knowledge of specific NPHI was greatest among MDs and lowest among PhDs ( $p < .001$ ). MDs were not familiar with 4.48 (range = 0–19) interventions, which was significantly more than the number of which both PhDs (1.78, range = 0–8) and NPs (3.10, range = 0–16) were unaware. All providers in each group reported having at least some familiarity with physical activity, activity therapy, and pet therapy. Almost all also had at least heard about removal of physical restraints, redirection, monitors for wandering, provision of orienting stimuli, restructuring routine, environmental accommodation, communication techniques, modification of activity of daily living (ADL) care, behavioral therapy, and music therapy; lack of familiarity with these interventions ranged from 1% to 7%. However, over half of both MDs and NPs had no familiarity with spaced retrieval (66% and 56%, respectively) and Montessori-based activities (66% and 51%, respectively), and close to half of each group had not heard of simulated presence therapy (49% and 42%, respectively). Percent of PhDs reporting no knowledge of these last three interventions were 23%, 14%, and 36%, respectively.

## Discussion

The data support the expected outcomes with respect to overall knowledge of NPHI and attitudes toward PI. PhDs reported significantly greater levels of knowledge of NPHI than did MDs, but the overall level of knowledge of PhDs and NPs were similar. In addition, the attitudes of MDs were significantly more favorable to the use of PI than those of PhDs, whereas mean attitude rating regarding the use of PI of NPs was intermediate between those of the two other professional groups and differed significantly from neither.

The data do not support the expected outcomes with respect to attitudes favoring the use of NPHI. NPs had the highest level of mean agreement to statements in this category. This was significantly greater than levels expressed by both MDs and PhDs, whose mean levels of agreement did not differ. Attitudes and knowledge, however, do not necessarily predict behavior. Although NPs expressed the most favorable attitudes toward NPHIs and had overall knowledge levels similar to those of PhDs, NP treatment of an actual resident with behavior problems paralleled that of the MDs (Cohen-Mansfield et al., 2011). Eighty percent of MDs and 77% of NPs reported the use

of psychotropic drugs—primarily the atypical antipsychotics or benzodiazepines—whereas 71% and 73%, respectively, reported using nonpharmacological interventions as compared with 100% of psychologists. In over half of the cases—60% and 54%, respectively—both interventions were combined.

These practices are in concert with the finding that the majority of all groups also believed, at least to some extent, that PI work well for behavior problems. The persistence of this belief may be necessary to justify continued use of these medications by clinicians, who prescribe these drugs despite the attendant cardiac, cerebrovascular, mortality, and metabolic risks that have been documented (Ballard et al., 2008; Gill et al., 2007; Jeste et al., 2008; Madhusoodana et al., 2007). However, in asking respondents about their opinions regarding the effectiveness of PI, we did not differentiate among behaviors but phrased statements in terms of behavior problems in general. Some behaviors may show a better response to medication than others, and in some cases—where the patient is a danger to self or others—a medication regimen may be warranted. Other problems, such as wandering, hoarding, screaming, or stereotypical or repetitive behaviors, have less evidence for medication response. Additionally, the use of psychoactive medications—for example, medication for depression—may be considered more acceptable or more effective than antipsychotic drugs are with more purely behavioral symptoms (Locca, Büla, Zumbach, & Bugnon, 2008; Thompson, Herrmann, Rapaport, & Lanctôt, 2007). The low rates of agreement of PhDs to the statements that PI should be used as a treatment of last resort for dementia-related behavior symptoms and that there are no PI for many problem behaviors may stem from the higher prevalence of depressive symptoms reported by PhDs compared with NPs and MDs (Cohen-Mansfield et al., 2011). The understanding of the reasons for PhDs perceptions regarding PIs requires further investigation.

Nevertheless, there still exists no consensus or clear standard of care for the pharmacological management of behavioral symptoms in dementia. Although trials have produced positive results in some cases, especially for the newer antipsychotics, efficacy has been limited (Ballard et al., 2008; Jeste et al., 2008; Madhusoodana et al., 2007; Rosenheck et al., 2007), and the overall quality of the evidence has been judged poor to fair (McDonagh, Peterson, Carson, Fu, & Thakurta,

2010). Clinicians may feel that they need to do something, and as yet, there are no better pharmacological alternatives to choose for management of these symptoms (Madhusoodana et al., 2007). Treatment is often based on physician preference or local customs. Even though they are consistently recommended as first-line treatment, NPHI may be considered too difficult and time or labor intensive to implement.

The majority of providers believe that staff behavior, lack of training, and limited resources all effect the implementation of NPHIs. Frontline staff provide most of resident care, and they are responsible for implementing interventions. Yet, they are often poorly trained to deal with behavior problems in dementia and have little autonomy in how they perform their tasks. Although they have the most intimate knowledge of residents, they are rarely included in care team meetings or consulted in care planning (Cohen-Mansfield et al., 2011), where their input can help inform a proper response to resident behavior and provide feedback about its effectiveness. Many NPHIs can be administered by various caregiving personnel and do not require extensive training. Taken together, these results indicate the need for teaching of communication techniques, behavior management, modification of ADL care and other NPHI to suit the needs and preferences of the resident.

The mean category ratings indicate that NPs agree most strongly that staff behavior and resources are issues that influence the use of NPHI. Of the three groups, NPs are most likely to be employed by the facility and integrated into the care team (Stolee, Hillier, Esbaugh, Griffiths, & Borrie, 2006). They would, therefore, have a greater opportunity to work directly with nursing staff and be in a better position to observe staff behaviors and ability to use NPHIs. PhDs, on the other hand, work primarily as consultants in long-term care settings (Hyerstay, 1979; Molinari & Hartman-Stein, 2000), and they often are not considered part of the care team (Cohen-Mansfield et al., 2011; Slone, 1996). MDs have been described as actually spending little time in the nursing home (Helton, van der Steen, Daaleman, Gamble, & Ribbe, 2006; Katz, Karuza, Kolassa, & Hutson, 1997), often basing treatment decisions on information in the resident's chart or through proxy assessment (Helton et al., 2006).

Clinicians have the most knowledge of techniques in the categories of environmental modification, behavior change, behavior accommodation,



and self-affirming interventions; knowledge of pleasant events/structured activities, social contact interventions, sensory interventions, and cognitive interventions was lowest. Overall level of knowledge of NPHI of NPs and PhDs appears similar, and both are significantly more knowledgeable about these techniques than are MDs.

Yet, NPs and PhDs were likely to use different interventions. PhDs are clearly more familiar, in general, with NPHI dealing with behavior change, self-affirming interventions, and cognitive interventions. NPs, on the other hand, report greater use of removal of physical restraints, monitors for wandering, physical activity, pet therapy, and interventions involving sensory stimulation. Some of these interventions must be ordered by physicians (e.g., removal of physical restraints), and some are most appropriate for persons with advanced dementia (e.g., massage therapy) or are dementia specific (e.g., monitors for wandering behavior).

Choice of NPHI depends on several factors. First are the symptoms to be treated. PhDs appear to see more residents with psychological symptoms and fewer showing aggression toward staff and wandering behaviors (Cohen-Mansfield et al., 2011). MDs, on the other hand, are more likely to see the most disruptive cases. Residents seen by MDs tend to exhibit more behaviors overall and are more likely to be aggressive toward staff or to have psychotic symptoms (Cohen-Mansfield et al., 2011). Nonpharmacological interventions must be selected according to the behaviors exhibited and tailored to the capabilities and needs of each resident (Cohen-Mansfield, 2000, 2001, 2005; Cohen-Mansfield, Libin, & Marx, 2007). Second, interventions must take into account the suspected etiological factors underlying the observed behaviors, so that the cause of these behaviors can be addressed (Cohen-Mansfield, 2000; Cohen-Mansfield et al., 2007). PhDs, MDs, and NPs attribute the behaviors to different factors (Cohen-Mansfield et al., 2011). PhDs, for example, are most likely to consider depression as an etiological factor (Cohen-Mansfield et al., 2011), and self-affirming interventions, such as validation or pleasant events treatments, have been suggested as interventions that can be used to address negative affect (Cohen-Mansfield, 2005). Similarly, the greater role attributed to environmental or staff-related issues (Cohen-Mansfield et al., 2011) may drive the use by PhDs of behavioral accommodation or environmental change and appropriate communication

techniques. In contrast, NPs are more likely to focus on the presence of physical discomfort (Cohen-Mansfield et al., 2011) and hence their higher use of music therapy, massage therapy, and aromatherapy, which are often employed to reduce discomfort and induce relaxation (Cohen-Mansfield, 2001; Maddocks-Jennings & Wilkinson, 2004; Remington, Abdallah, Melillo, & Flanagan, 2006). Additional considerations might be the provider's perception of the adequacy of resources and the extent to which staff are knowledgeable about an intervention and are willing and able to implement it. Finally, the use of an intervention will depend on whether or not the intervention is even known to the provider. Thus, the appropriate use of NPHIs demands knowledge of a wide variety of techniques and has implications for training for all three categories of professionals.

As with PIs, evidence regarding the effectiveness of NPHIs is emergent. A recent report done under the auspices of the U.S. Department of Veterans Affairs that summarized findings of reviews and primary articles published through July 2009 dealing with the efficacy of various nonpharmacological interventions concluded that evidence supporting the use of these methods for behavior problems in dementia was neither clear nor consistent (O'Neil et al., 2011). Many reviews often presented mixed results regarding the utility of a particular intervention. Comparisons were hindered by few good quality studies, small sample sizes, and variability in the behavioral symptoms studied, degree of cognitive impairment of the participants, duration of the intervention, and outcomes measured. Nevertheless, the report concluded that some sensory interventions (i.e., massage, touch therapy, and music therapy) show some promise in being able to reduce behavioral symptoms in some persons with dementia. These techniques may be especially appropriate for individuals with advanced dementia (Kverno, Black, Nolan, & Rabins, 2009). There is also evidence in support of behavior management techniques (which can be individualized), exercise (especially helpful in improving sleep), and pet therapy. Overall, there is insufficient evidence to support the use of aromatherapy, light therapy, acupuncture, and various emotion-oriented approaches (which require preserved verbal capacity). Interventions appear to work best when they are targeted, tailored, individualized, and modified to take into account the behavioral symptom and its etiology, the cognitive capacity and preferences of the resident, the capabilities of caregivers, and

the circumstances of the environment. The need for individualizing interventions is likely to weaken any results based on methodologies that test specific interventions. Further research is needed that can provide guidance for the tailoring process.

There remains the question as to whose responsibility it is to suggest and provide nonpharmacological interventions to residents. In treating residents with behavior problems, MDs see their primary role to be determining if there is a treatable medical problem that is causing the behavior (Cohen-Mansfield & Jensen, 2008b). MDs may feel less of a need to be familiar with NPHIs because they are more likely than the other providers to refer a resident with behavior problems to a mental health professional (Cohen-Mansfield et al., 2011). The greater familiarity of NPs with sensory interventions suggests an involvement with individuals with advanced dementia. Many behavior problems occur during self-care routines, and one of the principal symptoms reported by all providers was resisting care (Cohen-Mansfield et al., 2011). Sensory interventions, such as touch and massage, are traditional parts of nursing, and staff can be taught to include these in self-care routines. NPs have the opportunity to serve as mentors to staff in this regard. PhDs are familiar with a broad range of techniques, many of which require specialized training. Simulated presence therapy, validation therapy, and reminiscence therapy require some devoted staff time for implementation and are most appropriate for individuals with some level of intact verbal skills and preserved cognitive capacity. PhDs additionally have knowledge of behavioral management techniques, environmental accommodation, and communications skills, which can be effective with residents at many levels of dementia severity and can be taught to caregiving staff. PhDs are more likely than the other providers to be involved in interventions aimed at educating staff or changing staff behavior (Cohen-Mansfield et al., 2011). The different roles regarding the practice and training of NPHIs require further clarification. This may potentially involve additional professionals such as social workers or persons specifically trained to provide NPHI expertise.

The divergent knowledge of the different providers and the complex needs and varying clinical presentations of residents argues for a multidisciplinary approach to care that can take advantage of the combined expertise offered by medical, pharmacological, nursing, and psychosocial perspectives. Multidisciplinary collaboration is the

model of care that is currently being advocated to provide for the complex needs of older adults. Yet, many barriers still exist to its implementation. A cohesive team culture and plans for how different disciplines should work together to manage behavior problems are often lacking, and care is still most often delivered in isolation from other providers (Halcomb, Shepherd, & Griffiths, 2009).

A major limitation of the study is the low response rates, which were minimally 3% for MDs, 21% for PhDs, and 9% for NPs. These cannot be computed exactly, however, as some people may not have received the E-mails due to incorrect E-mail addresses or their computers might have rejected them as spam. Others on the lists may not actually work in nursing homes. We did not use prenotification or financial or other incentives, all of which have been shown to increase survey response rates (Cook, Heath, & Thompson, 2000). Although low, other reports have indicated rates in a comparable range under similar conditions with various populations: 5.5% with chiropractic students (Banzai, Derby, Long, & Hondras, 2011); 15.6% with German trauma center physicians (Fischer et al., 2011); and 20.7% with Michigan State University undergraduate, graduate, and professional students (Kaplowitz, Hadlock, & Levine, 2004). The higher rates of response by NPs and PhDs compared with MDs may indicate a greater investment in the topic of nonpharmacological interventions by these groups. Because of background and training, it is an area that is particularly salient for PhDs (behavioral problems are one of the primary reasons PhDs are called to nursing homes, whereas both NPs and MDs are involved in multiple aspects of primary care for residents), and because of their grounding in research, PhDs may be more positively predisposed to research and participation in research efforts.

The data indicate that the NPs who responded to our survey are similar demographically to other NP samples. This occurs in the areas of age, gender, race, geographic distribution (Kennedy-Malone, Penny, & Fleming, 2008), time spent in clinical work (Kaasalainen, DiCenso, Donald, & Staples, 2007), facility size (Rosenfeld, Kobayashi, Barber & Mezey, 2004), and population densities of the area in which they practice (Kennedy-Malone et al., 2008). Less is known about the demographics of the MDs who comprise the current nursing home physician workforce (Katz & Karuza, 2006), although data are available that allow comparison of the current sample of MDs with other AMDA

members (AMDA Membership Survey, 2006). Both MD samples appear to be similar with respect to age, area of specialization (either family practice or internal medicine), and years in long-term care practice. Differences occur in that respondents to this questionnaire were more likely to be medical directors, to be board certified, and to be associated with more and larger nursing facilities compared with the general AMDA membership. AMDA membership is considered to be representative of the national medical director population (Caprio, Karuza, & Katz, 2009). Thus, the current data cannot be generalized to nursing home physicians in general but likely represent a subset who are more informed about and interested in the current topic. There is even less information to compare the PhD respondents with other PhDs who work in long-term care. Until recently, PhDs were very rare in nursing homes, and their role in this setting remains limited (Slone, 1996; Stokes, Pachana, & Helmes, 2004).

In summary, the results reveal that attitudes of MDs, NPs, and PhDs were all in favor of increased use of NPHIs for behavior problems in dementia and of their use as first-line treatments. These attitudes correspond with current guidelines for care. Nevertheless, providers still retain the belief that PIs work well for behavior problems. Although NPs appear to be more knowledgeable in general about NPHIs than are MDs, use by NPs of NPHIs parallels that of MDs, and both are lower than PhDs' rate of use of NPHIs for the nursing home residents under their care (Cohen-Mansfield et al., 2011). Overall levels of knowledge of PhDs and NPs regarding NPHIs were similar, although these providers tended to be more familiar with and to use different types of NPHIs. NPs were more likely to use sensory interventions, removal of physical restraints, monitors for wandering, physical activity, and pet therapy. PhDs reported greater use of behavior management techniques, environmental accommodation or restructuring routine, pleasant events, self-identity interventions, and cognitive interventions. This may be related either to different training of the different disciplines or to differential referral of residents to the different practitioners. In order to capitalize on the varying areas of expertise of the different providers, a multidisciplinary approach to resident care would be warranted. A more comprehensive training of professionals in the growing toolkit of NPHI and in the tailoring of NPHI to resident habits, preferences, remaining abilities, and to the behavior is also

indicated. Such toolkit itself needs to be further studied, refined, and documented for efficacy and effectiveness. A necessary complement is a front-line staff adequately trained in NPHIs, who can implement team recommendations.

## References

- American Medical Directors Association Membership Survey. (2006). *Profile of an AMDA medical director*. Retrieved July 26, 2011, from <http://www.amda.com/about/memberprofile.cfm>
- American Geriatrics Society and American Association for Geriatric Psychiatry Expert Panel on Quality Mental Health Care in Nursing Homes. (2003). Consensus statement on improving the quality of mental health care in U.S. nursing homes: Management of depression and behavioral symptoms associated with dementia. *Journal of the American Geriatrics Society*, *51*, 1287–1298.
- Ballard, C., Lana, M. M., Theodoulou, M., Douglas, S., McShane, R., Jacoby, R., et al. (2008). A randomized, blinded, placebo-controlled trial in dementia patients continuing or stopping neuroleptics (the DART-AD trial). *PLoS Med*, *5*, e76. doi:10.1371/journal.pmed.0050076
- Banzai, R., Derby, D. C., Long, C. R., & Hondras, M. A. (2011). International web survey of chiropractic students about evidence-based practice: A pilot study. *Chiropractic & Manual Therapies*, *19*, 6. doi:10.1186/2045-709X-19-6
- Brodsky, H., Draper, B., Saab, D., Low, L-F, Richards, V., Paton, H., & Lie, D. (2001). Psychosis, depression and behavioural disturbances in Sydney nursing home residents: Prevalence and predictors. *International Journal of Geriatric Psychiatry*, *16*, 504–512.
- Caprio, T. V., Karuza, J., & Katz, P. R. (2009). Profile of physicians in the nursing home: Time perception and barriers to optimal medical practice. *Journal of the American Medical Directors Association*, *10*, 93–97. doi:10.1016/j.jamda.2008.07.007
- Citrome, L. (2007). Atypical antipsychotics, elderly patients, and mortality risk. *Southern Medical Journal*, *100*, 964–965. doi:10.1097/SMJ.0b013e31815401cb
- Cohen-Mansfield, J. (2000). Nonpharmacological management of behavioral problems in persons with dementia: The TREA model. *Alzheimer's Care Quarterly*, *1*, 22–34.
- Cohen-Mansfield, J. (2001). Nonpharmacologic interventions for inappropriate behaviors in dementia: A review, summary, and critique. *American Journal of Geriatric Psychiatry*, *9*, 361–381.
- Cohen-Mansfield, J. (2005). Nonpharmacological interventions for persons with dementia. *Alzheimer's Care Quarterly*, *6*, 129–145.
- Cohen-Mansfield, J., & Jensen, B. (2008a). Assessment and treatment approaches for behavioral disturbances associated with dementia in the nursing home: Self-reports of physicians' practices. *Journal of the American Medical Directors Association*, *9*, 406–413. doi:10.1016/j.jamda.2008.02.010
- Cohen-Mansfield, J., & Jensen, B. (2008b). Physicians' perceptions of their role in treating dementia-related behavior problems in the nursing home: Actual practice and the ideal. *Journal of the American Medical Directors Association*, *9*, 552–557. doi:10.1016/j.jamda.2008.02.011
- Cohen-Mansfield, J., Jensen, B., Resnick, B., & Norris, M. (2011). Assessment and treatment of behavior problems in dementia in nursing home residents: A comparison of the approaches of physicians, psychologists, and nurse practitioners. *International Journal of Geriatric Psychiatry*, [Epub ahead of print]. doi:10.1002/gps.2699.
- Cohen-Mansfield, J., Libin, A., & Marx, M. S. (2007). Non-pharmacological treatment of agitation: A controlled trial of systematic individualized intervention. *Journal of Gerontology: Medical Sciences*, *62*, 908–916.
- Cohen-Mansfield, J., Marx, M. S., & Rosenthal, A. S. (1989). A description of agitation in a nursing home. *Journal of Gerontology*, *44*, M77–M84.
- Cook, C., Heath, F., & Thompson, R. L. (2000). A meta-analysis of response rates in web- or internet-based surveys. *Educational and Psychological Measurement*, *60*, 821–836. doi:10.1177/00131640021970934
- Fischer, P., Wafaisade, A., Neugebauer, E. A., Kees, T., Bail, H., Weber, O., et al. (2011). [Preparedness of hospital physicians for a mass casualty incident: A German survey amongst 7,700 physicians.] [Article in German]. *Der Unfallchirurg*. [Epub ahead of print]. doi:10.1007/s00113-011-2035-5.



- Gill, S. S., Bronskill, S. E., Normand, S. L., Anderson, G. M., Sykora, K., Lam, K., et al. (2007). Antipsychotic drug use and mortality in older adults with dementia. *Annals of Internal Medicine*, 146, 775–786.
- Halcomb, E. J., Shepherd, B. M., & Griffiths, R. (2009). Perceptions of multidisciplinary case conferencing in residential aged care facilities. *Australian Health Review*, 33, 566–571.
- Helton, M. R., van der Steen, J. T., Daaleman, T. P., Gamble, G. R., & Ribbe, M. W. (2006). A cross-cultural study of physician treatment decisions for demented home patients who develop pneumonia. *Annals of Family Medicine*, 4, 221–227. doi:10.1370/afm.536
- Howard, R., Ballard, C., O'Brien, J., & Burn, A. (2001). Guidelines for the management of agitation in dementia. *International Journal of Geriatric Psychiatry*, 16, 714–717.
- Hyerstay, B. J. (1979). The role of a psychologist in a nursing home. *Professional Psychology*, 10, 36–41.
- Jeste, D. V., Blazer, D., Casey, D., Meeks, T., Salzman, C., Schneider, L., et al. (2008). ACNP White Paper: Update on use of antipsychotic drugs in elderly persons with dementia. *Neuropsychopharmacology*, 33, 957–970. doi:10.1038/sj.npp.1301492
- Kaasalainen, S., DiCenso, A., Donald, F. C., & Staples, E. (2007). Optimizing the role of the nurse practitioner to improve pain management in long-term care. *Canadian Journal of Nursing Research*, 39, 14–31.
- Kaplowitz, M. D., Hadlock, T. D., & Levine, R. (2004). A comparison of web and mail survey response rates. *Public Opinion Quarterly*, 6, 94–101. doi:10.1093/poq/nfh006
- Katz, P. R., & Karuza, J. (2006). The nursing home physician workforce. *Journal of the American Medical Directors Association*, 7, 394–397. doi:10.1016/j.jamda.2006.05.003
- Katz, P. R., Karuza, J., Kolassa, J., & Hutson, A. (1997). Medical practice with nursing home residents: Results from the national physician professional activities census. *Journal of the American Geriatrics Society*, 45, 911–917.
- Kennedy-Malone, L., Penny, J., & Fleming, M. E. (2008). Clinical practice characteristics of gerontological nurse practitioners: A national study. *Journal of the American Academy of Nurse Practitioners*, 20, 17–27. doi:10.1111/j.1745-7599.2007.00275.x
- Kverno, K. S., Black, B. S., Nolan, M. T., & Rabins, P. V. (2009). Research on treating neuropsychiatric symptoms of advanced dementia with non-pharmacological strategies, 1998–2008: A systematic literature review. *International Psychogeriatrics*, 21, 825–843. doi:10.1017/S1041610209990196
- Locca, J. F., Büla, C. J., Zumbach, S., & Bugnon, O. (2008). Pharmacological treatment of behavioral and psychological symptoms of dementia (BPSD) in nursing homes: Development of practice recommendations in a Swiss canton. *Journal of the American Medical Directors Association*, 9, 439–448. doi:10.1016/j.jamda.2008.04.003
- Maddocks-Jennings, W., & Wilkinson, J. M. (2004). Aromatherapy practice in nursing: Literature review. *Journal of Advanced Nursing*, 48, 93–103. doi:10.1111/j.1365-2648.2004.03172.x
- Madhusoodanan, S., Shah, P., Brenner, R., & Gupta, S. (2007). Pharmacological treatment of the psychosis of Alzheimer's disease: What is the best approach? *CNS Drugs*, 21, 101–115.
- Margallo-Lana, M., Swann, A., O'Brien, J., Fairbairn, A., Reichelt, K., Potkins, D., et al. (2001). Prevalence and pharmacological management of behavioral and psychological symptoms amongst dementia sufferers living in care environments. *International Journal of Geriatric Psychiatry*, 16, 39–44.
- McDonagh, M., Peterson, K., Carson, S., Fu, R., & Thakurta, S. (2010). *Drug class review: Atypical antipsychotic drugs: Final update 3 report* [Internet]. Portland: Oregon Health & Science University. Retrieved July 26, 2011, from <http://www.ncbi.nlm.nih.gov/books/NBK50583/pdf/TOC.pdf>
- Molinari, V., & Hartman-Stein, P. (2000). Psychologists in long-term care: Overview of practice and public policy: Introduction to the special series. *Clinical Psychology: Science and Practice*, 7, 312–316.
- O'Neil, M., Freeman, M., Christensen, V., Telerant, R., Addleman, A., & Kanasagara, D. (2011). *Non-pharmacological interventions for behavioral symptoms of dementia: A systematic review of the evidence*. VA-ESP Project #05-225. Retrieved July 26, 2011, from [http://www.hsrd.research.va.gov/publications/esp/dementia\\_nonpharm.cfm](http://www.hsrd.research.va.gov/publications/esp/dementia_nonpharm.cfm)
- Remington, R., Abdallah, L., Melillo, K. D., & Flanagan, J. (2006). Managing problem behaviors associated with dementia. *Rehabilitation Nursing*, 31, 186–192.
- Rosenheck, R. A., Leslie, D. L., Sindelar, J. L., Miller, E. A., Tariot, P. N., Dagerman, K. S., et al. (2007). Cost-benefit analysis of second-generation antipsychotics and placebo in a randomized trial of the treatment of psychosis and aggression in Alzheimer disease. *Archives of General Psychiatry*, 64, 1259–1268.
- Rosenfeld, P., Kobayashi, M., Barber, P., & Mezey, M. (2004). Utilization of nurse practitioners in long-term care: Findings and implication of a national survey. *Journal of the American Medical Directors Association*, 5, 9–15.
- Salzman, C., Jeste, D. V., Meyer, R. E., Cohen-Mansfield, J., Cummings, J., Grossberg, G. T., et al. (2008). Elderly patients with dementia-related symptoms of severe agitation and aggression: Consensus statement of treatment options, clinical trials methodology, and policy. *Journal of Clinical Psychiatry*, 69, 889–898.
- Selbæk, G., Kirkevold, Ø., & Engedal, K. (2007). The prevalence of psychiatric symptoms and behavioral disturbances and the use of psychotropic drugs in Norwegian nursing homes. *International Journal of Geriatric Psychiatry*, 22, 843–849. doi:10.1002/gps.1749
- Sloane, P. D., Mitchell, C. M., Preisser, J. S., Phillips, C., Commander, C., & Burkner, E. (1998). Environmental correlates of resident agitation in Alzheimer's disease special care units. *Journal of the American Geriatrics Society*, 46, 862–869.
- Slone, D. G. (1996). Guidelines for psychologists working with dementia care nursing staff. *American Journal of Alzheimer's Disease and Other Dementias*, 11, 25–31.
- Stokes, D., Pachana, N., & Helmes, E. (2004). *Brief on the role of psychologists in aged care services*. Melbourne, Australia: Australian Psychological Society Ltd. Retrieved July 26, 2011, from <http://www.groups.psychology.org.au/Assets/Files/AgedCareBrief%5B1%5D.pdf>
- Stolee, P., Hillier, L. M., Esbaugh, J., Griffiths, N., & Borrie, M. J. (2006). Examining the nurse practitioner role in long-term care: Evaluation of a pilot project in Canada. *Journal of Gerontological Nursing*, 32, 28–36.
- Taipale, H. T., Bell, J. S., Soini, H., & Pitkälä, K. H. (2009). Sedative load and mortality among residents of long-term care facilities: A prospective cohort study. *Drugs & Aging*, 26, 871–881. doi:10.2165/11317080-000000000-00000
- Thompson, S., Herrmann, N., Rapaport, M. J., & Lanctôt, K. L. (2007). Efficacy and safety of antidepressants for treatment of depression in Alzheimer's disease: A metaanalysis. *Canadian Journal of Psychiatry*, 52, 248–255.
- Zuidema, S., Koopmans, R., & Verhey, F. (2007). Prevalence and predictors of neuropsychiatric symptoms in cognitively impaired nursing home patients. *Journal of Geriatric Psychiatry and Neurology*, 20, 41–49. doi:10.1177/0891988706292762