INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY
Int J Geriatr Psychiatry 2009; **24**: 118–124.
Published online 19 June 2008 in Wiley InterScience
(www.interscience.wiley.com) **DOI**: 10.1002/gps.2077

Long term care staff beliefs about evidence based practices for the management of dementia and agitation

Liat Ayalon[1]*, Patricia Arean[2], Heather Bornfeld[2] and Renee Beard[3]

[1]*Bar Ilan University, School of Social Work, Israel*
[2]*University of California, San Francisco, Langley Porter Psychiatric Institute, San Francisco, CA, USA*
[3]*University of Illinois at Chicago, Chicago, IL, USA*

SUMMARY

Context Despite a growing literature on effective interventions for Alzheimer's disease (AD) and agitation, the management of these conditions in long term care (LTC) often is inadequate. The goals of the present study were: (a) to evaluate existing beliefs about evidence based practices (EBP) for the management of Alzheimer's disease and agitation among LTC staff; and (b) to evaluate the contribution of demographic and attitudinal variables to LTC staff beliefs about these EBP.
Method A cross sectional study of 371 LTC staff members completed an EBP questionnaire, a short demographic questionnaire, and an attitudinal questionnaire about AD and agitation.
Results Paraprofessional caregivers, those of lower educational level, and ethnic minorities were more likely to be in disagreement with the EBP views examined in this study. Those in disagreement with the EBP views also reported a preference towards not working with residents with AD and agitation and a sense of helplessness associated with such work. Disagreement with EBP views was associated with both normalization and stigmatization of AD and agitation.
Conclusions Paraprofessional caregivers, ethnic minorities, and people of lower educational level are most at need for educational activities about AD and neuropsychiatric symptoms. Educational efforts geared towards changing the belief system of LTC staff should target not only EBP but also information about AD and agitation as conditions that are deviant from the normal aging process, yet non-stigmatizing. It is expected that following EBP will empower staff and improve staff motivation to work with residents with AD and agitation. Copyright © 2008 John Wiley & Sons, Ltd.

KEY WORDS — attitudes; knowledge; nonpharmacological intervention; patient centered-care; dissemination

INTRODUCTION

Long-term care (LTC) settings have become a popular outlet for older adults. It is estimated that every second woman over the age of 65 will enter an LTC setting at some point during her lifetime (Murtaugh *et al*., 1990). The rates of dementia in LTC are particularly striking, encompassing as many as 50% of the residents (Feldman *et al*., 2006). Dementia in LTC often is complicated by neuropsychiatric symptoms (NPS), with depression, apathy, and agitation being the most frequent symptoms (Lyketsos *et al*., 2002). As a result, LTC staff is obligated to care for older adults who present with complex medical and mental health conditions.

Recent evidence has shown that the use of typical and atypical antipsychotics for the management of NPS of AD often is ineffective and may even result in early death (Schneider *et al*., 2005; Wang *et al*., 2005). Hence, current OBRA regulations emphasize the use of nonpharmacological interventions (Federal Nursing Home Reform Act from the Omnibus Budget Reconciliation Act of 1987 or simply OBRA '87 summary, 2001). Successful nonpharmacological interventions usually apply an interdisciplinary individualized approach in which potential causes of the behavior are identified and addressed using behavioral techniques. Most of these behavioral interventions emphasize the importance of increased contact with the resident in order to perform a thorough assessment

*Correspondence to: Dr L. Ayalon, School of Social Work, Bar Ilan University, Ramat Gan, 52900 Israel.
E-mail: ayalonl@mail.biu.ac.il

Received 23 October 2007
Accepted 16 May 2008

of the problem behavior and may encourage the involvement of family members as an important source of information and stimulation (Cohen-Mansfield and Mintzer, 2005; Cohen-Mansfield and Bester, 2006). Despite the growing evidence base on the management of NPS in dementia (Sink *et al*., 2005; Ayalon *et al*., 2006), there is a proliferation of inadequate management of NPS in LTCs (Briesacher *et al*., 2005). Research has shown that the disconnect between research and practice is in part due to negative perceptions of dementia held by LTC staff (Brodaty *et al*., 2003) and inaccurate knowledge regarding dementia care (Helmuth, 1995; Thurmond, 1999). Negative perceptions and inaccurate knowledge are particularly dominant among paraprofessional staff (e.g. certified nurse's aides, nurse's assistant, etc.), more so than among nursing staff (e.g. registered nurse, licensed practical nurse, etc.) (Spore *et al*., 1991; Gallagher *et al*., 2006). Furthermore, many LTC staff members openly report having the need for training in mental health issues related to dementia (Curry *et al*., 2000; Pennington *et al*., 2003; Sung *et al*., 2005; Ramirez *et al*., 2006).

While not specific to LTC staff workers, ethnicity has been associated with knowledge and attitudes about AD. Specifically, research has shown that people of ethnic minority groups often hold beliefs and attitudes about AD that are substantially different from those of the majority culture, with more acculturated minorities holding beliefs and attitudes that are more similar to the majority culture (Ayalon and Arean, 2004).

To evaluate staff attitudes about EBP, we examined professional group differences on three EBP domains: beliefs about the effectiveness of behavioral versus pharmacological interventions, views about the role of the family in the management of AD and agitation, and views about physical isolation and supervision of residents as important in the care of AD residents. Next, we evaluated the role of sociodemographic and attitudinal variables as predictors of staff beliefs about EBP.

Because paraprofessional caregivers provide the bulk majority of services to older adults, we were most interested in this professional group and compared all other groups to paraprofessional caregivers. We expected paraprofessional caregivers to be less knowledgeable about EBP for the management of AD and agitation than the other professional groups. We had no prior expectations about administrators who, on the one hand, present with higher educational level, but, on the other hand, likely have less direct experience. We also expected that in addition to level of education, differences in knowledge about EBP would be explained primarily by work experience and acculturation level, with more work experience and exposure to the majority culture being related to more EBP knowledge. Last, we expected that stigmatizing views of AD and agitation would stand in contradiction to the EBP domains examined in this study.

METHODS

Sample

This study is part of the Senior Behavioral Health Services project (SBHS) a Substance Abuse and Mental Health Services Administration initiative to disseminate evidence based knowledge regarding the management of depression and agitation in LTC. We collected baseline data from ten study sites (eight assisted living/board and care facilities and two skilled nursing facilities). Data were collected in community workshops and a conference on assisted living facilities delivered specifically for LTC staff. At all sites, data were collected during the first meeting with our staff, prior to the first training session in agitation and/or depression management. A social worker approached staff members prior to training and offered them to complete the measure. All levels of staff were asked to complete the forms in order to gain a broad perspective on staff knowledge. There was no obligation to complete the questionnaire and we did not offer any compensation for completion. The study was approved by the Institutional Review Board of the University of California San Francisco.

Of 451 potential staff members, 371 completed the measures. The sample included primarily paraprofessional caregivers (227; 61.2%), followed by administrators/owners (42; 11.3%), social workers (18; 4.9%), nurses (16; 4.3%) and activity staff (15; 4%). A fifth group included those who self-identified professionally as 'other' (53; 14.3%). The sample was composed of females (277; 74.7%) of at least some college or trade school education (292; 78.7%). The majority of the sample was Asian 56.1% (208), and only 46.4% of the sample reported that their native language was English (172).

Measures

We adapted an existing measure for the purpose of this study (Ayalon and Arean, 2004) by reviewing the literature and conducting interviews with nursing staff for this purpose. Questions were then evaluated by experts in psychometrics and geriatrics and

DOI: 10.1002/gps

reevaluated once again by nursing staff. Questions were adapted based on feedback from these sources. The survey was translated into both Spanish and Tagalog, and participants were given the choice of taking the measure in their native language (if applicable).

Outcome variables

Beliefs about Evidence Based Practices (EBP) for the Management of AD and Agitation. We evaluated three major domains of EBP: (a) beliefs about *isolation and supervision of AD residents* were evaluated by five true (0)/false (1) questions. For example, 'older adults with agitation do not like to be talked to'; Cronbach's alpha = 0.62; (b) beliefs about *the effectiveness of pharmacological vs behavioral interventions* were evaluated by three true (0)/false (1) questions. For example, 'sedatives are the only effective treatment for agitation'; Cronbach's alpha = 0.56; and (c) beliefs about *the involvement of family members* were evaluated by two true (0)/false (1) questions. For example, 'it is better not to involve family members in the care of residents with AD'; Cronbach's alpha = 0.59. We used three composite scales to reflect the three domains. A lower score represented greater divergence from current EBP. Psychometric data are available upon request.

Predictors

Demographic information. We evaluated age, gender, and professional affiliation.

Culture and acculturation. Ethnicity was evaluated by self-report. We evaluated number of years in the United States and number of years of speaking English as proxies of acculturation.

Work experience. We evaluated work experience as number of years working with older adults and number of years at the facility.

Beliefs about the normality of AD and agitation. These were evaluated by two true (0)/false (1) questions. A normality composite index score was calculated to reflect all 'no' responses, range 0–2. Cronbach's alpha = 0.66

Stigma of AD and agitation. Stigma was evaluated by two true (0)/false (1) questions. A composite index score, reflecting all 'no' responses was calculated, range 0–2. Cronbach's alpha = 0.61

Level of comfort with the work. Level of comfort was assessed using two true (0)/false (1) questions. A composite index score, reflecting all 'no' responses was calculated, range 0–2. Cronbach's alpha = .57

Work preferences. We evaluated work preferences using two true (0)/false (1) questions. A composite index score, reflecting all no responses was calculated, range 0–2. Cronbach's alpha = 0.69.

Sense of helplessness associated with LTC work. Helplessness was evaluated by two true (0)/false (1) questions. A composite index score, reflecting all 'no' responses was calculated, range 0–2. Cronbach's alpha = 0.58.

Statistical analysis

We first ran descriptive statistics for each professional group separately. We used ANOVA to test for professional group differences in beliefs about EBP, using pre-planned contrasts to identify those professional groups that significantly differ from paraprofessional caregivers. To identify correlates of beliefs about EBP, we ran bivariate correlations between the three EBP domains and all sociodemographic and attitudinal variables. We then entered all significant variables into three separate regression equations, with each of the EBP domains as an outcome variable. We controlled for professional affiliation in all analyses. To deal with missing values, listwise deletion was used in all calculations.

RESULTS

Beliefs about Evidence Based Practices (EBP) for the management of Alzheimer's disease and agitation across professional groups

Significant professional group differences were found on all three EBP domains (F isolation and supervision $[317,5] = 21.75$, $p < 0.001$; F family role $[351,5] = 2.85$, $p = 0.01$; F treatment effectiveness $[323,5] = 6.68$, $p < 0.001$). On all three domains, paraprofessional workers differed significantly from all other professional groups. Relative to all other professional groups, paraprofessional caregivers reported greater beliefs in the ability of physical or chemical restraint to manage AD and agitation ($F[5] = 6.68$, $p < 0.001$). They were more likely to disregard the role of the family in the management of AD ($F[5] = 2.85$, $p = 0.01$) and to believe in intense supervision and isolation of residents as effective interventions ($F[5] = 21.75$, $p < 0.001$).

DOI: 10.1002/gps

Correlates of beliefs and attitudes about isolation and supervision of AD residents

Using bivariate correlations, professional affiliation (chi-square = 100.84, $p < 0.001$), ethnicity (chi-square = 109.63, $p < 0.001$), educational level ($p < 0.00128$, $p < 0.001$), years in the United States ($r = 0.37$, $p < 0.001$), number of years of speaking English ($p < 0.00141$, $p < 0.001$), experience with older adults ($r = 0.12$, $p = 0.03$), sense of helplessness ($r = 0.18$, $p = 0.001$), work preferences ($r = 0.15$, $p = 0.006$), and beliefs about the normality of AD and agitation ($r = 0.34$, $p < 0.001$) were all associated with beliefs about isolation and supervision of AD residents. There was no evidence of multicollinearity among potential predictors. In multivariate analysis, we found that relative to all other professional groups (with the exception of activity staff), paraprofessional caregivers reported greater beliefs in the importance of isolation and intense supervision of AD and agitated residents. In addition, Black, Latino, and Asian LTC staff, relative to White, reported greater beliefs in the importance of isolation and intense supervision of AD and agitated residents. Those who reported a lesser preference towards working with AD residents and residents with agitation and those who reported normalizing views of AD and agitation also reported more beliefs in the importance of isolation and intense supervision of AD and agitated residents (see Table 1 for details).

Correlates of beliefs and attitudes about the role of the family in the management of AD and agitation

In bivariate analyses, we found that professional affiliation (chi-square = 18.50, $p = 0.04$), ethnicity (chi- square = 18.66, $p = 0.01$), age ($r = -0.16$, $p = 0.003$), level of education ($r = 0.31$, $p < 0.001$), years in the United States ($r = 0.21$, $p < 0.001$), number of years of speaking English ($r = 0.25$, $p < 0.001$), sense of helplessness ($r = 0.27$, $p < 0.001$), work preferences ($r = 0.13$, $p = 0.01$), stigma of AD and agitation ($r = -0.14$, $p = 0.007$), and beliefs in the normality of AD and agitation ($r = 0.17$, $p < 0.001$) were all associated with beliefs about the role of the family in the management of AD and agitation. There was no evidence of multicollinearity among predictors. In multivariate analysis, we found that those of lower level of education, those who spent less years in the United States, those who had a greater sense of helplessness, those who expressed a preference towards not working with residents with agitation and AD, and those who expressed stigma about AD and agitation, reported a lesser preference towards the involvement of family members in the management of AD and agitation (see Table 1).

Correlates of beliefs and attitudes about the effectiveness of behavioral interventions vs chemical and physical restraint

In bivariate analysis, we found that professional affiliation (chi-square = 39.66, $p < 0.001$), ethnicity (chi-square = 59.66, $p < 0.001$), gender ($r = -0.13$, $p = 0.01$), education ($r = 0.33$, $p < 0.001$), years in the United States ($r = 0.18$, $p = 0.001$), number of years of speaking English ($r = 0.32$, $p < 0.001$), comfort level associated with the work ($r = -0.15$, $p = 0.006$), sense of helplessness ($r = 0.47$, $p < 0.001$), and beliefs about the normality of AD and agitation ($r = 0.35$, $p < 0.001$) all were associated with beliefs about chemical and physical restraint. There was no evidence of multicollinearity among predictors. In multivariate analysis, we found that lower levels of education, greater sense of helplessness, and beliefs in the normality of AD and agitation all were associated with greater beliefs in the effectiveness of physical and chemical restraint relative to behavioral interventions (see Table 1).

DISCUSSION

This study reports a number of useful findings related to why agitation is poorly managed in LTCs and how targeted training might be able to remedy the care situation. In particular, our data show that level of training/education, acculturation and beliefs about dementia and agitation influence caregiver knowledge about EBP for the management of AD and agitation, whereas time spent working with residents with dementia does not. The training and policy implications are discussed below.

Training

The most significant finding was that paraprofessional staff, those who have the most contact with LTC residents, and those of lower level of education also have the least knowledge about the EBP domains examined in this study. Our findings, coupled with data from Gallagher *et al*. (2006) and Spore *et al*. (1991), call for the importance of additional training in the management of AD and agitation specifically geared to meet the needs of paraprofessional caregivers and those of lower levels of education.

DOI: 10.1002/gps

Table 1. Predictors of the beliefs about evidence based practices for the management of AD and agitation

	B	SE	*p*
Domain 1 Isolation and supervision of residents			
Professional affiliation			
Paraprofessional caregivers (reference)			
Nurses	1.05	0.32	**0.002**
Social workers	1.09	0.36	**0.003**
Activity staff	0.42	0.34	0.21
Owners/administrators	0.90	0.28	**0.002**
Other	0.42	0.23	**0.06**
Ethnicity			
White (reference)			
Black	−1.22	0.39	**0.002**
Latino	−1.16	0.33	**0.001**
Other	−0.31	0.44	0.48
Asian	−0.55	0.26	**0.04**
Preference (0–2)	0.41	0.08	< **0.001**
Normality(0–2)	0.22	0.10	**0.03**
Domain 2 The role of the family in the care of the residents			
Education			
Less than 8th grade (referenace)			
Less than 12th grade	0.27	0.29	0.34
High school graduate/GED	0.79	0.26	0.**003**
Some college or trade school	0.93	0.25	<**0.001**
College graduate	0.93	0.24	<**0.001**
Graduate school	0.97	0.26	<**0.001**
Number of years speaking English			
Less than 1 year (reference)			
1–5 years	0.87	0.34	0.**01**
6–9 years	0.70	0.33	**0.03**
10 or more years	0.71	0.31	**0.02**
Not relevant	0.78	0.33	**0.02**
Helplessness	0.29	0.07	<**0.001**
Preference	0.11	0.04	**0.004**
Stigma	−0.22	0.09	**0.01**
Domain3 Beliefs about physical and chemical restraint			
Education			
Less than 8th grade (reference)			
Less than 12th grade	0.23	0.38	0.53
High school graduate/GED	1.08	0.33	**0.001**
Some college or trade school	1.16	0.33	<**0.001**
College graduate	1.27	0.32	<**0.001**
Graduate school	1.27	0.33	<**0.001**
Number of years speaking English			
Less than 1 year (reference)			
1–5 years	0.93	0.34	**0.007**
6–9 years	0.67	0.33	**0.04**
10 or more years	0.69	0.32	**0.03**
Not relevant	0.75	0.34	**0.02**
Helplessness (0–2)	0.53	0.07	<**0.001**
Normality of AD and agitation (0–2)	0.11	0.05	**0.02**

Note: We conducted three regression analyses, with each of the EBP domains as an outcome variable. Only significant results are presented in this table. Full tables are available upon request.
Bold values indicates significant results.

Culture and acculturation

We found that belonging to an ethnic minority group and acculturation level (i.e. number of years of speaking English) are related to beliefs that are in disagreement with current EBP for the management of AD and agitation. Specifically, relative to Whites, Blacks, Latinos, and Asians were more likely to think that isolation of agitated residents and intense supervision of AD residents are essential ingredients in the management of AD and agitation. In addition, those who spoke English for fewer years reported a

DOI: 10.1002/gps

lesser preference for the involvement of family members in the care of the residents and were more skeptical about the effectiveness of behavioral interventions relative to chemical and physical restraint. These findings are in accordance with Ayalon and Arean (2004) that found lower levels of AD knowledge in Latino and Asian older adults relative to Whites. Given that people of ethnic minority groups have a large role in the provision of nursing care in the United States, there is a need to invest in educational programs specifically designed for their needs. It is important to emphasize, however, that it is not ethnicity per se, but other variables associated with ethnicity such as socioeconomic status, education, and acculturation that likely contribute to the ethnic group differences identified in the present study. Even though, we controlled for some of these socio-cultural differences in the present study, we did not control for all. Hence, results should be viewed with caution.

KEY POINTS

- Alzheimer's disease (AD) and agitation often are poorly managed in long-term care.
- Staff beliefs likely play a role in the management of dementia and agitation in long-term care.
- Paraprofessional caregivers, ethnic minorities, and people of lower educational level are most at need for educational activities about AD and neuropsychiatric symptoms.
- Educational efforts geared towards changing the belief system of LTC staff should target not only knowledge about evidence based practice but also information about AD and agitation as deviant from the normal aging process, yet non-stigmatizing conditions.

Experience

Our findings show that neither years of experience with older adults nor years of experience at the LTC facility contribute to the overall knowledge and beliefs of LTC staff members. Possibly, the high levels of burden and the large working load so often reported in LTC facilities (Lin *et al*., 2002; Castle and Engberg, 2005; Zimmerman *et al*., 2005; Castle, 2006) hamper the development and acquisition of new knowledge and beliefs. Instead, we found that training level is associated with EBP knowledge. Hence, these findings reemphasize the importance of formal educational training.

Sense of helplessness and work preference

Given the increasing body of research that has shown the effectiveness of nonpharmacological interventions (Levine *et al*., 1995; Ayalon *et al*., 2006) and the relative ineffectiveness of chemical and physical restraint in the management of AD and agitation (Ejaz *et al*., 1994; Sink *et al*., 2005), it is not surprising that those who feel powerless and prefer not to work with residents who present with AD and agitation also believe in isolation, restraint, and constant supervision for the management of AD and agitation (techniques that have shown to be largely ineffective).

Beliefs in the normality of AD and agitation vs stigma of AD and agitation

We found that beliefs in the normality of AD and agitation often were in disagreement with the EBP views examined in this study. We also found that those who held a more stigmatizing view of AD and agitation were less likely to involve family members in patient care. In previous research we found that the normalizing and stigmatizing views of AD tend to go together (Ayalon and Arean, 2004). We suggest that beliefs in the normality of AD and agitation might reflect a general misconception of the aging process or a stigmatizing view of aging as a process that inevitably involves loss of cognitive and mental capacities.

Limitations

We used a convenience sample of sites that were interested in participating in the educational activities offered by the SBHS project and thus, we might have sampled particularly motivated LTC sites (i.e. either those most up to date sites or the ones that currently are experiencing the greatest difficulties). Furthermore, though quite typical for California, the large representation of Asian participants in this study is atypical of LTC staff members in the United States. Second, the cross-sectional nature of the design does not allow for assumptions about a cause and effect. Third, we only used a proxy of work experience (i.e. years working with older adults and years at the facility) and a proxy of acculturation (i.e. years of speaking English and years in the United States). Evaluating work experience and acculturation in greater detail could have been informative. In addition, because the questionnaire was not available in Spanish during the first few administrations, we cannot evaluate the true effect of language

DOI: 10.1002/gps

on the response pattern of participants in this study. Last, the relative small number of nursing staff limits the generalization of the findings. Nevertheless, the present study is important because it evaluates the unique contribution of demographic and attitudinal variables to the knowledgebase and belief system of LTC staff. Our findings show that work experience is insufficient as a tool for the acquisition of new knowledge and beliefs. Paraprofessional caregivers are most at need for educational activities about AD and agitation. These educational activities should be specifically tailored to meet the needs of ethnic minorities and people of lower command of English. Both beliefs about AD and agitation as normal and the stigmatization of AD and agitation were in disagreement with the EBP views evaluated in this study. Thus, more information about the specific nature of AD and agitation is required for appropriate management of these conditions. We expect that educational activities that improve staff attitudes toward EBP also will empower staff and improve their level of motivation.

CONFLICT OF INTEREST

None known.

REFERENCES

Ayalon L, Arean PA. 2004. Knowledge of Alzheimer's disease in four ethnic groups of older adults. *Int J Geriatr Psychiatry* **19**: 51–57.

Ayalon L, Gum AM, Feliciano L, Arean PA. 2006. Effectiveness of nonpharmacological interventions for the management of neuropsychiatric symptoms in patients with dementia: a systematic review. *Arch Intern Med* **166**: 2182–2188.

Briesacher BA, Limcangco MR, Simoni-Wastila L, *et al*. 2005. The quality of antipsychotic drug prescribing in nursing homes. *Arch Intern Med* **165**: 1280–1285.

Brodaty H, Draper B, Low LF. 2003. Nursing home staff attitudes towards residents with dementia: strain and satisfaction with work. *J Adv Nurs* **44**: 583–590.

Castle NG. 2006. Measuring staff turnover in nursing homes. *Gerontologist* **46**(2): 210–219.

Castle NG, Engberg J. 2005. Staff turnover and quality of care in nursing homes. *Med Care* **43**: 616–626.

Cohen-Mansfield J, Bester A. 2006. Flexibility as a management principle in dementia care: the Adards example. *Gerontologist* **46**: 540–544.

Cohen-Mansfield J, Mintzer JE. 2005. Time for change: the role of nonpharmacological interventions in treating behavior problems in nursing home residents with dementia. *Alzheimer Dis Assoc Disord* **19**: 37–40.

Curry L, Porter M, Michalski M, Gruman C. 2000. Individualized care: perceptions of certified nurse's aides. *J Gerontol Nurs* **26**: 45–51; quiz 52-43.

Ejaz FK, Jones JA, Rose MS. 1994. Falls among nursing home residents: an examination of incident reports before and after restraint reduction programs. *J Am Geriatr Soc* **42**: 960–964.

Federal Nursing Home Reform Act from the Omnibus Budget Reconciliation Act of 1987 or simply OBRA '87 summary. 2001. Retrieved august, 2002, from http://www.itcombudsman.org/ombpublic/%2049_346_1023.cfm.

Feldman H, Clarfield AM, Brodsky J, *et al*. 2006. An estimate of the prevalence of dementia among residents of long-term care geriatric institutions in the Jerusalem area. *Int Psychogeriatr* **18**: 643–652.

Gallagher S, Bennett KM, Halford JC. 2006. A comparison of acute and long-term health-care personnel's attitudes towards older adults. *Int J Nurs Pract* **12**: 273–279.

Helmuth AM. 1995. Nurses' attitudes toward older persons on their use of physical restraints. *Orthop Nurs* **14**: 43–51.

Levine JM, Marchello V, Totolos E. 1995. Progress toward a restraint-free environment in a large academic nursing facility. *J Am Geriatr Soc* **43**: 914–918.

Lin SM, Yin TJ, Li IC. 2002. An exploration of work stressors and correlators for nurse's aides in long-term care facilities. *J Nurs Res* **10**: 177–186.

Lyketsos CG, Lopez O, Jones B, *et al*. 2002. Prevalence of neuropsychiatric symptoms in dementia and mild cognitive impairment: results from the cardiovascular health study. *JAMA* **288**: 1475–1483.

Murtaugh CM, Kemper P, Spillman BC. 1990. The risk of nursing home use in later life. *Med Care* **28**: 952–962.

Pennington K, Scott J, Magilvy K. 2003. The role of certified nursing assistants in nursing homes. *J Nurs Adm* **33**: 578–584.

Ramirez M, Teresi J, Holmes D. 2006. Demoralization and attitudes toward residents among certified nurse assistants in relation to job stressors and work resources: cultural diversity in long term care. *J Cult Divers* **13**: 119–125.

Schneider LS, Dagerman K.S., Insel P. 2005. Risk of death with atypical antipsychotic drug treatment for dementia: meta-analysis of randomized placebo-controlled trials. *JAMA* **294**: 1934–1943.

Sink KM, Holden KF, Yaffe K. 2005. Pharmacological treatment of neuropsychiatric symptoms of dementia: a review of the evidence. *JAMA* **293**: 596–608.

Spore DL, Smyer MA, Cohn MD. 1991. Assessing nursing assistants' knowledge of behavioral approaches to mental health problems. *Gerontologist* **31**: 309–317.

Sung HC, Chang SM, Tsai CS. 2005. Working in long-term care settings for older people with dementia: nurses' aides. *J Clin Nurs* **14**: 587–593.

Thurmond JA. 1999. Nurses' perceptions of chemical restraint use in long-term care. *Appl Nurs Res* **12**: 159–162.

Wang PS, Schneeweiss S, Avorn J, *et al*. 2005. Risk of death in elderly users of conventional *vs* atypical antipsychotic medications. *N. Engl J Med* **353**: 2335–2341.

Zimmerman S, Williams CS, Reed PS, *et al*. 2005. Attitudes, stress, and satisfaction of staff who care for residents with dementia. *Gerontologist* **45** (Spec No 1): 96–105.