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Factors Affecting the Utilization and Quality of Long-Term Care

by

April Temple

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
School of Aging Studies
College of Behavioral and Community Sciences
University of South Florida

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ABSTRACT

The aging of the nation in the coming decades will contribute to an increased demand for long-term care. Given this trend, it is becoming increasingly important to understand utilization of services along the continuum of care and to determine factors that influence the provision of quality care. These insights are needed to reduce national expenditures on long-term care and to maximize independence and well-being among older adults.

The purpose of the present dissertation was to explore factors that influence the utilization and quality of long-term care by conducting three separate studies. The first study examined risk of nursing home (NH) placement in a frail sample of older adults receiving publicly-funded long-term care in two settings: home and community-based services (HCBS) or assisted living (AL). Specifically, it explored whether these settings of care modify the relationship between dementia and NH placement. The second study examined NH organizational characteristics and job characteristics of staff in relation to turnover of nursing assistants (NAs) in a nationally representative sample of NHs. Using the same sample, the final study examined the presence of employment-based benefits of NAs and explored the relationship between NH organizational characteristics and the availability of staff benefits.

Findings from this dissertation can contribute to a greater understanding of the use of long-term care services and the retention of staff to provide quality care.   In the

first study, AL was associated with longer time to NH placement for individuals with dementia when compared to HCBS. In the second study, the provision of competitive wages and benefits, involvement of NAs in resident care planning, and high levels of nurse staffing were associated with lower NA turnover, which may be important for quality of NH care. In the final study, for-profit ownership and high Medicaid occupancy were negatively associated with NA benefits whereas facility size, chain membership, occupancy level, union involvement, and education of the NH administrator were positively associated with benefits offered to these staff. Collectively, the findings from this dissertation may have important implications for policy makers, providers, and consumers of long-term care.

Chapter One: Introduction

The aging of the population in the ensuing decades will likely contribute to an increased demand for long-term care. Approximately 9 million older adults in the United States currently need long-term care, and this number is projected to rise to 12 million by the year 2020 (U.S. Department of Health and Human Services, 2007). Although the majority of long-term care is provided by informal caregivers, greater numbers of older adults will need formal care provided by home and community-based services (HCBS) or provided in an assisted living (AL) or nursing home (NH) setting. Given these trends, understanding outcomes of care in long-term care settings is an increasingly important issue. The purpose of this dissertation is to examine factors affecting the utilization and quality of long-term care.

Utilization of Long-Term Care

Long-term care provides assistance to persons with physical or cognitive impairments that result in functional limitations in activities of daily living. The continuum of long-term care includes HCBS, AL, and NH care. HCBS offers an array of services including case management, home health care, and personal care assistance with activities of daily living to approximately 2.8 million clients in the United States (Ng, Harrington, & O'Malley, 2008). AL refers to a variety of residential care settings that provide personal care and 24-hour assistance with activities of daily living within an environment that focuses on maximizing dignity, privacy, and autonomy (National Center for Assisted Living, 2006). There are approximately 68,000 AL communities in the United States that provide care to nearly one million older adults (National Center for

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Assisted Living, 2006). NHs operate under a medical model of care and provide acute

rehabilitation and 24-hour skilled nursing care to the most functionally impaired. There

are approximately 16,500 NHs nationwide that provide long-term care to approximately

1.3 million residents (Harrington, Carrillo, & Blank, 2008).

In an effort to provide care in the least restrictive setting and eliminate the

institutional bias inherent in public funding of long-term care, HCBS and AL are

increasingly serving frail older adults as less institutional and less expensive alternatives

to traditional NH care. As a result, the number of older adults with dementia or cognitive

impairment in these settings is substantial. Approximately one-quarter of HCBS clients

and more than one-half of AL residents have dementia or other cognitive impairment

(Alzheimer's Association, 2007; Zimmerman et al., 2007). In comparison to HCBS, AL

may be better able to meet the needs of residents with dementia since a core philosophy

of AL is to adapt its service provision to allow residents to age in place (Chapin & Dobbs-

Kepper, 2001). However, the differential effect of HCBS and AL on risk of NH placement

for individuals with dementia remains unknown. The purpose of the first dissertation

study is to explore the modifying effect of setting of care in HCBS or AL on the

relationship between dementia and NH placement. The findings may contribute greater

understanding of the role of HCBS and AL along the continuum of care.

Nursing Home Staffing and Quality of Care

For frail older adults who need medical or skilled nursing care, NHs are often the

most appropriate setting of long-term care. In this setting, quality of care has been a

persistent concern. In 2007, nearly one in five NHs received a serious deficiency during

state inspection for causing actual harm to residents or placing residents in immediate

jeopardy (Harrington et al., 2008). In addition, failure to provide quality care is the third

most frequently cited deficiency in NHs across the country (Harrington et al., 2008). Therefore, improving the quality of NH care is a priority for consumers, providers, and policy makers.

Central to the delivery of quality NH care are registered nurses (RNs), licensed practical nurses (LPNs), and nursing assistants (NAs). A large body of research has demonstrated a direct relationship between nurse staffing levels and the quality of care provided to residents (e.g., Bleismer, Smayling, Kane, & Shannon, 1998; Harrington, Zimmerman, Karon, Robinson, & Beutel, 2000; Schnelle et al., 2004). Although research and policy have primarily focused on achieving adequate staffing levels to ensure optimal resident care (Centers for Medicare and Medicaid Services, 2001; Harrington et al., 2000), the presence of high nursing staff turnover has also been associated with poor quality of care outcomes. For example, studies have documented that high turnover of nursing staff is associated with physical restraint use, catheter use, contractures, pressure ulcers, psychoactive drug use, hospitalizations, infection rates, and quality of care deficiencies (Castle & Engberg, 2005; 2006; Spector & Takada, 1991; Zimmerman, Gruber-Baldini, Hebel, Sloane, & Magaziner, 2002).

Given the deleterious consequences to quality of care associated with high turnover, there is a need to determine factors that influence turnover of NH staff. Since NAs provide the majority of direct care to nursing home residents and generally have the highest turnover rates in the industry (Cohen-Mansfield, 1997), turnover of NAs may be particularly important. The purpose of the second dissertation study is to examine NH organizational characteristics and job characteristics of staff in relation to turnover of NAs. The findings may provide insight into possible retention strategies, which may help reduce turnover and subsequently improve the delivery of resident care.

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With respect to maintaining a qualified workforce of NAs, high turnover and labor shortages represent major challenges faced by the NH industry. Moreover, the demand for these direct care workers is expected to increase with the aging of the nation (U. S. Bureau of Labor Statistics, 2000). One factor affecting recruitment and retention of NAs is the limited availability of employee benefits. For example, greater availability of benefits has been associated with fewer intentions to leave the job among NAs (Stearns & D'Arcy, 2008). However, little is known about the range of benefits offered to NAs and the variation of benefits across the NH industry. The aims of the third dissertation study are to describe the employment-based benefits offered to NAs and to explore the relationship between NH organizational characteristics and the availability of NA staff benefits. Findings from this study may be informative for strategies to enhance the provision of benefits to attract and retain NA staff.

Summary

In summary, the present doctoral dissertation is organized as three individual studies that address two primary goals of long-term care: to allow older adults to age in place in the least restrictive setting and to provide high quality of care. Since NHs are the most expensive and least preferable option, the first study examines the viability of HCBS and AL to prevent or delay NH placement among frail older adults, including those with dementia. In an effort to improve the quality of care for older adults residing in NHs, the second and third dissertation studies explore correlates of turnover and benefit provision of NAs. Collectively, the findings may have important implications for understanding the continuum of long-term care and maintaining a direct care workforce to provide quality care. The three dissertation studies are presented in turn in the following chapters.

Chapter Two: Study I

Setting of Care Modifies Risk of Nursing Home Placement

for Older Adults with Dementia

April Temple, NHA, Ross Andel, PhD & Debra Dobbs, PhD

Abstract

Purpose: The purpose of this study was to examine risk of nursing home (NH) placement among older adults receiving home and community-based services (HCBS) or assisted living (AL) and to explore whether these settings of care modify the relationship between dementia and risk of NH placement.

Methods: The sample consisted of dually eligible Medicare and Medicaid beneficiaries age 65 and over who received HCBS (n=1,630) or resided in AL (n=836) in Florida between July 1999 and June 2000. Cox proportional hazard regression models were used to estimate risk of NH placement over a five year study period and to test the interaction of setting of care by dementia status.

Results: In all, 15% of HCBS participants were placed in a NH compared to 26% of AL participants. As indicated by a significant interaction term in the regression model, setting of care modified the relationship between dementia and NH placement (*HR*=0.45, *CI*=0.31-0.66). In post-hoc analyses stratified by setting of care, dementia was associated with a 50% increased risk of NH placement from HCBS (*HR*=1.50, *CI*=1.12-2.02) but was not associated with placement from AL (*HR*=0.86, *CI*=0.63-1.16).

Implications: The findings suggest that AL may prevent or delay nursing home placement for individuals with dementia when compared to HCBS.

Introduction

The number of older adults needing long-term care is projected to rise from 9 million to 12 million by the year 2020 (U.S. Department of Health and Human Services, 2007). This growth will contribute to an increased demand for long-term care services across the continuum of care including home and community-based services (HCBS), assisted living (AL), and nursing home (NH) care. NH care represents the most expensive option for long-term care services and consumes a majority of public funding under the Medicaid program (Centers for Medicare and Medicaid Services, 2007a). As a result, states have increased the availability of Medicaid-funded waivers for HCBS and AL to provide long-term care in less expensive and less institutional settings to individuals who would otherwise require institutional care. The number of cognitively-impaired older adults in these alternative settings is substantial, with one-quarter of HCBS recipients and more than one-half of AL residents having dementia or other cognitive impairment (Alzheimer's Association, 2007; Zimmerman et al., 2007). Thus, the purpose of this study was to examine the effect of these settings of care on subsequent NH placement, particularly for persons with dementia.

A large body of research has examined the role of dementia in regards to NH placement from the community. Dementia has been associated with an increased likelihood of NH utilization compared to HCBS and AL in a sample of publicly-funded clients in Florida (Borrayo, Salmon, Polivka, & Dunlop, 2002). Dementia has also been found to be a risk factor for NH placement among HCBS clients (e.g., Andel, Hyer, & Slack, 2007; Scott, Edwards, Davis, Cornman, & Macera, 1997), yet the findings remain equivocal from AL. In a national survey of AL facilities, dementia was associated with an increased likelihood of discharge to a NH (Phillips, Munoz, Sherman, Rose, Spector, &

Hawes, 2003). A few studies, however, reported no association between dementia or cognitive impairment and risk of NH placement from AL (e.g., Dobbs, Hayes, Chapin, & Oslund, 2006; Kopetz et al., 2000; Rosenberg et al., 2006). Collectively, these findings suggest that the community setting of care for persons with dementia may have an important influence on future NH utilization.

In comparison to HCBS, AL settings may be better able to meet the needs of residents with dementia since a core component of the AL philosophy is to allow residents to age in place (Chapin & Dobbs-Kepper, 2001). To achieve this goal, AL facilities adjust their service provision and level of care criteria to meet residents' changing needs in avoidance of discharge to a higher level of care in a NH. Research also suggests that AL may be an appropriate (Sloane, Zimmerman, Gruber-Baldini, Hebel, Magaziner, & Konrad, 2005) and less costly (Leon & Moyer, 1999) setting of care compared to a NH for persons with mild to moderate dementia. Thus, AL may be superior to HCBS for older adults with dementia to age in place; however, the differential effect of HCBS and AL on risk of NH placement for persons with dementia remains unknown.

The objective of this study was to explore the modifying effect of setting of care on the relationship between dementia and NH placement in a sample of frail older adults receiving publicly-funded long-term care in HCBS or AL. Potential risk factors for NH utilization were classified according to the behavioral model of health services use (Andersen, 1995; Andersen & Newman, 1973). This model, commonly used in health services research, suggests that people's use of health services is a function of three factors: predisposition to use of services, presence of enabling resources, and health characteristics representing need for care. Setting of care in HCBS or AL represents an

enabling resource while dementia represents an important need for care characteristic. We hypothesized that setting of care would modify the association between dementia and risk of NH placement, so that the effect of dementia would be greater among HCBS participants compared to AL residents while controlling for other important factors.

Methods

Sample

The sample for this study consisted of older adults age 65 and over who were enrolled in a Medicaid waiver program for HCBS or AL in the state of Florida between July 1999 and June 2000. HCBS participants were derived from the Florida Medicaid Aged and Disabled Adult waiver program. This program provides services such as personal care, case management, home health care, homemaker assistance, and home delivered meals. AL participants were derived from the Florida Medicaid Assisted Living for the Elderly waiver program, which provides services within the scope of AL care. Both of these programs provide long-term care to low income, community dwelling older adults who are at risk for NH placement. Participants had to be dually eligible for Medicare and Medicaid and have complete data for all study variables. A total of 2,894 individuals met these criteria. To assure that the long-term care assignment was not temporary or transitional, participants were also required to remain continuously enrolled in HCBS or AL for the first three months in the study. This criterion led to the exclusion of 428 participants. Those excluded were less likely to be White or have an available caregiver and were more likely to be in HCBS and have a greater number of chronic diseases ($p < .05$). The analytic sample consisted of 2,466 participants, 1,630 who were receiving HCBS and 836 who were residing in AL. These individuals were followed until June 2004 or until death or placement in a NH.

Data used in this study were derived from three state administrative data sources: Agency for Health Care Administration (AHCA) Medicaid claims data, Department of Health death records, and Department of Elder Affairs (DOEA) assessments in the Comprehensive Assessment Review and Evaluation Services (CARES) system or the Client Information Registration and Tracking System (CIRTS). These data sets reside in a data warehouse established by the State Data Center at the Florida Policy Exchange Center on Aging. Permission to use the data was obtained from AHCA and DOEA, and the study procedures were approved by the Institutional Review Board at the University of South Florida.

Florida Medicaid claims data were used to determine demographic information, dual eligibility status, enrollment in the AL and HCBS waiver programs, and NH use. The Department of Health death certificate files were matched with Medicaid claims data to determine date of death. The Medicaid claims data and death records were subsequently matched with assessment data in CARES and CIRTS, from which sociodemographic characteristics, functional limitations, and health and cognitive status were obtained. CARES and CIRTS assessments are administered to community dwelling elders who apply for the Medicaid waiver programs used in this study and are designed to help the DOEA evaluate need and eligibility for long-term care services. These assessments are administered by trained nurses or social workers and reviewed by physicians and program managers to evaluate service eligibility and ensure data accuracy. An informed proxy, a family member, or a caregiver is used to obtain information when the client cannot participate in the assessment due to severe physical or cognitive impairment. Participants may have multiple assessments prior to and during enrollment in the programs, and the time between assessments and actual enrollment

tends to vary widely due to administrative delays. Therefore, a twelve month window was used to identify the assessment closest to the first month in HCBS or AL. On average, the assessment took place within 6 months (SD = 3.9 months).

Measures

Dependent Variable. The dependent variable was time to NH placement in months. NH placement was defined as a NH stay of 30 or more days with Medicaid as the primary payer to reflect long term, custodial care.

Independent Variables. Predisposing characteristics of the participants included age, gender, and race. Age was measured as a continuous variable, gender was dichotomized into female (1) and male (0), and race was dichotomized into White (1) versus non-White (0). Enabling resources included marital status dichotomized into married (1) and other (0), and the availability of a family caregiver was coded as present (1) or absent (0). In addition, setting of care was included as an enabling resource and dichotomized to reflect participants residing in AL (1) versus the reference group receiving HCBS (0) at baseline.

To measure need for care characteristics, a diagnosis of the following health conditions at baseline were included as dichotomous variables: arthritis, cancer, dementia, diabetes, emphysema/chronic obstructive pulmonary disease (COPD), heart disease, incontinence, and stroke. To create a parsimonious regression model, arthritis, cancer, diabetes, emphysema/COPD, heart disease, and stroke were summed to reflect a chronic disease score ranging from 0 to 6. Dementia and incontinence were not included in the chronic disease score but examined separately since both have been found previously to be important predictors of NH placement (Andel et al., 2007; Friedman, Steinwachs, Rathouz, Burton, & Mukamel, 2005). In addition, difficulty with

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activities of daily living (ADLs) and instrumental activities of daily living (IADLs) were used to assess functional status. ADLs included bathing, dressing, eating, toileting, transferring, and walking. IADLs included heavy and light housework, preparing meals, taking medications, managing finances, shopping, talking on the telephone, and transportation. The scale for both ADL and IADL variables was coded as no difficulties (0), needing some assistance (1), or cannot perform (2), and the scores reflect a sum of scores ranging from 0 to 12 for ADLs and 0 to 16 for IADLs.

Analyses

Descriptive statistics were calculated for all study variables. Chi-square and t-tests were used to test for frequency and mean score differences, respectively, between HCBS and AL participants.

A Cox proportional hazards regression model in the SAS procedure PHREG (SAS Institute, 2003) was used to estimate risk of NH placement. Cox proportional hazards regression is one approach to survival analysis that is used to study the occurrence and timing of events in longitudinal data (Allison, 2007). Analyzing longitudinal data with this method allows for determining the predictive risk of NH placement independently associated with each study variable while accounting for the proportion of time spent in the study. Participants were right censored if placement in a NH was not observed during the study period. Of the sample, 22% (n = 534) were censored for the number of months for which data were available during the follow-up period and 59% (n = 1,465) were censored due to death. The results are presented as the adjusted hazard ratio or relative risk of NH placement associated with each predictor controlling for the covariates. A hazard ratio greater than 1.00 indicates an increased risk of NH placement and below 1.00 indicates a decreased risk of NH placement. A 95%

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confidence interval was used with a significance level at a two-tailed *p*=0.05.

To test the hypothesis that setting of care modifies the association between dementia and risk of NH placement, an interaction term between setting of care and dementia was included in a second Cox proportional hazards regression model. Operationally, a modifying effect (or moderation) occurs when the modifying variable affects the direction or strength of the relationship between an independent variable and a dependent variable and the interaction between the modifying and independent variable is significant (Baron & Kenny, 1986). Since the interaction was statistically significant, post-hoc analyses were conducted in which the sample was stratified by the modifying variable, setting of care, to interpret the interaction effect. We used the likelihood ratio chi-square test to assess change in model fit with the inclusion of the interaction term. Specifically, the difference in -2 log likelihood values between the two models corresponds approximately to a chi-square test for goodness of fit. A statistically significant chi-square test indicates a change in model fit in which a smaller -2 log likelihood is a better fit.

Results

Sample Characteristics

Baseline predisposing, enabling, and need for care characteristics for all participants and by setting of care are presented in Table 2.1. The average age of the sample was 81.56 years (*SD* = 8.56), the majority were female (77%) and white (67%), and few were married (17%) or had an available caregiver (31%). In regards to need for care, nearly all participants had arthritis (99%), 64% had heart disease, and 55% were incontinent. Less than half of the sample had dementia (43%), diabetes (30%), stroke (30%), emphysema/COPD (24%), or cancer (16%). On average, participants had at

least two chronic diseases as represented by a mean chronic disease score of 2.62 (*SD* = 1.09). The mean ADL score was 5.57 (*SD* = 2.85), and the sample had substantial limitations in IADLs as represented by a mean IADL score of 12.49 (*SD* = 3.22). Of the entire sample, 19% (n = 467) were placed in a NH during the duration of the study with an average time to placement of 16.92 months (*SD* = 12.40 months).

The baseline characteristics of the sample varied greatly by setting of care as indicated by the t-test and chi-square statistics presented in Table 2.1. HCBS participants were younger, less likely to be female or White, and more likely to be married or have an available caregiver. HCBS participants were also less likely to have dementia compared to AL participants. In addition, HCBS participants were less likely than AL participants to have diabetes, incontinence, and difficulties with IADLs but more likely to have emphysema/COPD or stroke. In relation to NH placement, HCBS participants were less likely to be placed (15% versus 26%) but had a shorter average time to placement (15.14 months, *SD* = 12.57 months) compared to AL participants (18.38 months, *SD* = 12.08 months).

Risk of NH Placement

Results from the Cox proportional hazard models adjusted for all study variables and the inclusion of the interaction term are presented in Table 2.2. In the first model, each year of age increased the risk of NH placement by 3%, being White increased the risk by 24% compared to non-White, and having an available caregiver reduced the risk by 24%. Although chronic diseases and IADLs approached significance, the only need for care characteristic that increased the risk of NH placement was incontinence. The second model, which included the addition of the interaction term, provided a better fit to the data as indicated by a statistically significant change in -2 log likelihood (degrees of

freedom = 1, χ^2 = 16.31, p < .01). In this model, setting of care, dementia, and the interaction term emerged as significant predictors but the main effects are not interpreted with the inclusion of the interaction (Baron & Kenny, 1986).

Modifying Effect

The sample was stratified by the modifying variable, setting of care, to interpret the significant interaction effect between setting of care and dementia. As presented in Table 2.3, dementia was a significant risk factor for NH placement from HCBS but not AL. Other differences in risk between the two settings were that chronic diseases, incontinence, and ADLs increased the risk of placement from AL but not HCBS. In contrast, having a caregiver reduced the risk among HCBS participants but had no effect on risk among AL participants. Age and IADL limitations increased the risk from both settings of care.

Discussion

In this study, we examined risk of NH placement among dually eligible older adults receiving a Medicaid waiver for HCBS or AL while controlling for factors important for the utilization of health services (Andersen, 1995; Andersen & Newman, 1973). We also explored whether these settings modify the relationship between dementia and risk of NH placement. One of the strengths of this study was the ability to examine risk of NH placement among recipients of two community settings of long-term care, and we found that dementia emerged as a significant risk factor for NH placement from HCBS but not from AL. Specifically, a diagnosis of dementia increased the risk of subsequent NH placement by 50% among HCBS recipients only. This finding supports our hypothesis and suggests that differences in care provided in HCBS or AL affect future NH utilization among individuals with dementia.

The results of this study are consistent with prior research in which dementia is a particularly strong determinant of NH placement among HCBS recipients (Andel et al., 2007; Scott et al., 1997). For HCBS recipients with dementia to remain in the community, it is likely that they receive care from a family caregiver. Even though availability of a caregiver significantly reduced the risk of placement among HCBS recipients, the burden and stress associated with caregiving for a person with dementia often precipitates the need for NH care (Gaugler, Leach, Clay, & Newcomer, 2004; Yaffe et al., 2002). HCBS may not provide enough assistance to these caregivers to prevent institutionalization. Therefore, HCBS clients with dementia may need additional case management and more comprehensive services. A challenge for policy makers would be to balance the costs of increased care at home with the potential cost-savings of delayed NH placement.

Similar to recent studies (e.g. Dobbs et al., 2006; Rosenberg et al., 2006), dementia was not associated with NH placement from AL in this study. The AL industry has played an increasingly important role in caring for individuals with dementia, and our study provides additional evidence that these residents may be able to age in place. In relation to health outcomes of care, research has demonstrated that AL can provide adequate care to residents with dementia that do not have significant medical needs (Sloane et al., 2005). If the preference among consumers is to avoid NH placement, those with dementia may be better served in AL rather than at home with HCBS. From a policy perspective, national expenditures on long-term care could also be reduced by an estimated 14% if individuals with dementia received care in AL instead of a NH (Leon & Moyer, 1999). More research is needed, however, to examine the long-term cost effectiveness of providing care in AL versus HCBS to publicly-funded clients

with dementia.

Another important finding of our study was that only a relatively small percentage of the sample (19%) was placed in a NH during the duration of the study. Other research indicates that dually eligible older adults are much more likely to be institutionalized (Clark & Hulbert, 1998). Although our finding may partially reflect the high death rate in our sample (59%), it may also suggest that these beneficiaries with significant long-term care needs may be able to avoid NH placement by utilizing HCBS or AL. Similarly, another study found that individuals at risk of NH placement were largely able to remain in the community and avoid NH placement with the provision of publicly-funded HCBS or AL (Chapin, Baca, Macmillan, Rachlin, & Zimmerman, 2009). Avoiding placement in a NH is not only consistent with the preferences of older adults but also has significant cost-saving implications for the Medicare and Medicaid programs. Moreover, the results provide support for current state and federal initiatives that aim to eliminate the institutional bias and expand access to community alternatives to "rebalance" the delivery of publicly-funded long-term care (e.g., Kane, Kane, Priester, & Homyak, 2008).

This study identified other important risk factors for NH placement. Consistent with similar studies of the dually-eligible population (e.g., Andel et al., 2007; Friedman et al., 2005), increasing age, White race, and incontinence increased the risk of institutionalization. The only need for care characteristic that significantly increased the risk of placement was incontinence, which may reflect the overall frailty of our sample. This finding may also reflect policies to discharge residents with incontinence in many AL facilities (Chapin & Dobbs-Kepper, 2001).

Limitations

Several study limitations should be mentioned. First, the sample consisted of

relatively frail, dually eligible older adults in one state receiving a Medicaid waiver for HCBS or AL. Although this sample is unique, the results cannot be generalized to other publicly-funded or private pay long-term care clients. Second, setting of care and health assessments were derived at baseline. We were not able to capture whether HCBS recipients transitioned into AL, although movement between Medicaid waiver programs in Florida has been estimated at less than 10% (Mitchell, Salmon, Polivka, & Soberon-Ferrer, 2006). There is a need for future longitudinal studies to use multiple assessments to account for changes in utilization of services and health status over time. Lastly, we were not able to assess the severity of dementia or cognitive impairment. Although we accounted for overall disability with measures of limitations in ADLs and IADLs, the inclusion of dementia severity would be more desirable.

Conclusion

It is of significance to policy makers and consumers alike to understand the viability of less costly and less institutional settings of care, namely HCBS and AL, to prevent or delay NH placement. Given these settings, the results of this study suggest that individuals with dementia in HCBS remain at risk of NH placement but those in AL may be able to age in place longer. The findings have important implications for understanding the role of HCBS and AL along the continuum of care and improving well-being and independence among older adults with dementia.

Table 2.1 Predisposing, Enabling, and Need Characteristics of the Sample

	% or M (*SD*)			
	All	HCBS	AL	p-value[a]
N	2,466	1,630	836	
Predisposing Characteristics				
Age	81.56 (8.56)	80.47 (8.67)	83.69 (7.57)	<.01
Female	77	76	80	0.03
White	67	61	78	<.01
Enabling Resources				
Married	17	21	9	<.01
Available caregiver	31	40	14	<.01
Need for Care				
Arthritis	99	99	100	0.10
Cancer	16	17	14	0.09
Dementia	43	33	63	<.01
Diabetes	30	20	34	<.01
Emphysema/COPD	24	26	19	<.01
Heart disease	64	66	62	0.07
Incontinence	55	51	62	<.01
Stroke	30	35	22	<.01
Chronic diseases[b]	2.62 (1.09)	2.76 (1.11)	2.36 (0.96)	<.01
ADLs	5.57 (2.85)	5.64 (3.10)	5.44 (2.28)	0.10
IADLs	12.49 (3.22)	11.93 (3.44)	13.58 (2.40)	<.01
Outcome				
Nursing home placement	19	15	26	<.01

Notes. M = mean; SD = standard deviation; HCBS = home and community-based services;
AL = assisted living; COPD = chronic obstructive pulmonary disease; ADLs = activities
of daily living; IADLs = instrumental activities of daily living.
[a]Chi-square tests were used to examine differences between frequencies;
t-test statistics were used to assess mean score differences.
[b]Composite of arthritis, cancer, diabetes, heart disease, emphysema/COPD, and stroke.

Table 2.2 Risk of NH Placement

	Model 1			Model 2		
	HR	CI	p-value	HR	CI	p-value
Predisposing Characteristics						
Age	1.03	(1.02-1.05)	<.01	1.03	(1.02-1.05)	<.01
Gender (Ref = male)	1.01	(0.78-1.31)	0.90	1.02	(0.78-1.33)	0.89
Race (Ref = non-white)	1.24	(1.00-1.53)	0.05	1.23	(0.99-1.52)	0.06
Enabling Resources						
Marital status (Ref = not married)	0.99	(0.75-1.31)	0.95	0.99	(0.76-1.31)	0.97
Available caregiver (Ref = no caregiver)	0.76	(0.60-0.96)	0.02	0.70	(0.55-0.88)	<.01
Setting of care (Ref = HCBS)	1.18	(0.94-1.48)	0.17	1.71	(1.29-2.27)	<.01
Need for Care						
Chronic diseases[a]	1.09	(0.99-1.19)	0.07	1.08	(0.99-1.18)	0.09
Dementia	1.14	(0.92-1.42)	0.25	1.70	(1.27-2.25)	<.01
Incontinence	1.23	(1.00-1.51)	0.04	1.27	(1.03-1.55)	0.02
ADLs	1.03	(0.99-1.08)	0.12	1.03	(0.99-1.07)	0.17
IADLs	1.04	(0.99-1.08)	0.09	1.04	(0.99-1.08)	0.11
Interaction						
Setting of care x dementia				0.45	(0.31-0.66)	<.01
-2 log likelihood		5831.84			5815.53	

Notes. N = 2,466. HR = hazard ratio; CI = confidence interval; Ref = reference group; HCBS = home and community-based services; ADLs = activities of daily living; IADLs = instrumental activities of daily living.
[a]Composite of arthritis, cancer, diabetes, heart disease, emphysema/COPD, and stroke.

Table 2.3 Risk of NH Placement by Setting of Care

	HCBS			AL		
	HR	CI	p-value	HR	CI	p-value
Predisposing Characteristics						
Age	1.04	(1.02-1.05)	<.01	1.03	(1.01-1.05)	<.01
Gender (Ref = male)	0.85	(0.61-1.17)	0.31	1.54	(0.97-2.45)	0.07
Race (Ref = non-white)	1.22	(0.94-1.58)	0.15	1.34	(0.94-1.93)	0.11
Enabling Resources						
Marital status (Ref = not married)	0.92	(0.66-1.29)	0.63	1.25	(0.77-2.04)	0.37
Available caregiver (Ref = no caregiver)	0.56	(0.42-0.74)	<.01	0.91	(0.60-1.37)	0.65
Need for Care						
Chronic diseases[a]	1.05	(0.92-1.17)	0.51	1.17	(1.02-1.35)	0.03
Dementia	1.50	(1.12-2.02)	0.01	0.86	(0.63-1.16)	0.32
Incontinence	1.20	(0.90-1.60)	0.21	1.51	(1.12-2.03)	0.01
ADLs	0.98	(0.92-1.03)	0.36	1.12	(1.05-1.19)	<.01
IADLs	1.11	(1.05-1.17)	<.01	0.94	(0.88-1.00)	0.04

Notes. N = 2,466. HCBS = home and community-based services; AL = assisted living; HR = hazard ratio; CI = confidence interval; Ref = reference group; ADLs = activities of daily living; IADLs = instrumental activities of daily living.
[a]Composite of arthritis, cancer, diabetes, heart disease, emphysema/COPD, and stroke.

Chapter Three: Study II

Exploring Correlates of Turnover among Nursing Assistants

in the National Nursing Home Survey

April Temple, NHA, Debra Dobbs, PhD & Ross Andel, PhD

Abstract

Purpose: This study examined nursing home organizational characteristics and specific job characteristics of staff in relation to turnover of NAs.

Methods: Cross-sectional data on 944 nationally representative nursing homes were derived from the 2004 National Nursing Home Survey. Using a 3-month turnover rate, 25% of facilities with the lowest turnover rates were classified as low turnover, 25% of facilities with the highest turnover were classified as high turnover, and the remaining 50% of facilities were classified as moderate turnover. Multinomial logistic regression was used to examine organizational and job characteristics associated with low and high turnover compared to moderate turnover.

Results: One organizational characteristic, total staffing levels at or above 4.0 hours per patient day, was associated with greater odds of low NA turnover and reduced odds of high NA turnover. Job characteristics including higher wages and union membership were associated with greater odds of low NA turnover and higher wages, fully paid health insurance, employee assistance benefits, and involvement in resident care planning were associated with reduced odds of high NA turnover.

Implications: The results of this study suggest that job characteristics of NA staff may be particularly important for turnover. Specifically, the provision of competitive wages and benefits (particularly health insurance) and involvement of NAs in resident care planning could potentially reduce NA turnover, as could maintaining high levels of nurse staffing.

Introduction

Nursing assistants (NAs) are central to the delivery of quality nursing home (NH) care. Although research and policy have primarily focused on achieving adequate staffing levels to ensure optimal resident care (e.g., Centers for Medicare and Medicaid Services, 2001; Harrington et al., 2000), the presence of high NA turnover may also be deleterious to the provision of resident care (Castle & Engberg, 2005; 2006). Staff turnover of NAs represents a major challenge faced by the NH industry, measuring 71% annually (American Health Care Association, 2003). Furthermore, these staff members generally have the highest turnover rates and provide the majority of direct care to NH residents (Cohen-Mansfield, 1997).

Previous research has demonstrated that NH organizational characteristics (e.g., size, ownership, staffing) and job characteristics of staff (e.g., wages, involvement in care planning) may explain some of the variation in NA staff turnover rates (Banaszak-Holl & Hines, 1996; Brannon, Zinn, Mor, & Davis, 2002; Castle & Engberg, 2006; Kash, Castle, & Phillips, 2007). Although the relationship between organizational characteristics and turnover has been well studied, research including job characteristics of NA staff is limited. Moreover, commonly used data sets in turnover research including the Minimum Data Set (MDS), Online Survey, Certification and Reporting data (OSCAR), and state cost reports lack information on job characteristics of NA staff. Thus, the aims of this study were to confirm findings from prior studies on organizational characteristics associated with NA turnover and to explore specific job characteristics associated with turnover of NAs using a large, nationally representative sample of NHs.

Organizational Characteristics Associated with NA Turnover

NH organizational characteristics including size and ownership have been found to be associated with NA turnover in prior research. The size of a facility is likely to influence available resources and management practices, and research suggests that turnover is lower in smaller facilities (Castle & Engberg, 2006). For-profit facilities, which are often concerned with profit margins and may not invest as much in their employees, are consistently associated with higher NA turnover (Banaszak-Holl & Hines, 1996; Brannon et al., 2002; Castle & Engberg, 2006). Chain membership has also been associated with higher NA turnover (Castle, 2005), possibly because facilities belonging to chains have greater corporate oversight and stringency that may contribute to staff dissatisfaction.

Financial and staffing resources of a NH also represent organizational characteristics that have been found to be associated with turnover of nursing staff. Medicaid provides lower reimbursement for NH care than Medicare and private pay, and revenue from these sources is likely to affect the financial resources available to a facility to invest in nurse staffing. For example, higher proportions of Medicaid residents have been associated with greater nursing staff turnover (Harrington & Swan, 2003) whereas higher proportions of private pay residents have been associated with lower NA turnover (Castle, 2005). Facilities with higher occupancy rates, which may be indicative of greater revenue and better performance, have been found to have lower nursing staff turnover (Harrington & Swan, 2003). Higher nurse staffing levels, which likely reduce workload, have also been associated with lower NA turnover (Castle & Engberg, 2006; Donoghue & Castle, 2007). Finally, unstable leadership, as measured by director of nursing and administrator turnover, has previously been associated with an increased likelihood of

high and decreased likelihood of low NA turnover (Castle, 2005).

Job Characteristics Associated with NA Turnover

The relationship between job characteristics of NA staff and turnover is less clear. Higher wages have been associated with lower NA turnover (Kash et al., 2007), and limited availability of employee benefits including health insurance and pensions has been cited as a factor affecting retention of NAs (Institute of Medicine, 2008; Stone & Weiner, 2001). Moreover, union membership has been associated with lower NA turnover (Brannon et al., 2002), likely because of its effect on wages and benefits. Banaszak-Holl and Hines (1996) found that NA turnover was significantly reduced by involvement in resident care planning, although a similar study by Brannon and colleagues (2002) did not support this finding. In these same studies, increased training, permanent resident assignments, and involvement in resident assessments were not associated with NA turnover (Banaszak-Holl & Hines, 1996; Brannon et al., 2002).

This study examined nursing home organizational characteristics and specific job characteristics of staff in relation to turnover of NAs. It builds on prior research by utilizing a large, nationally representative sample of NHs, which allows for broad generalizability of findings. In addition, it includes several previously identified correlates of NA turnover within one study, allowing for an assessment of their relative importance. It further extends prior research by exploring more specific job characteristics of NA staff including several employment-based benefits.

Theoretical Framework

Numerous theoretical models of turnover exist in the literature that attribute turnover to structural, environmental, and individual factors (e.g., Price, 2001; Abelson & Baysinger, 1984). One causal model developed specifically through research in NHs

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focuses on a structural approach to explain the variation in nursing staff turnover rates (Halbur, 1983). This model consists of three factors which are assumed to influence turnover: the opportunity structure, organizational structure, and control structure. The opportunity structure broadly refers to labor market conditions (i.e., unemployment rate and availability of alternative employment), the organizational structure includes organizational characteristics (i.e., ownership and size), and the control structure refers to job characteristics (i.e., pay, benefits, promotion opportunities, and involvement in decision-making). All three factors were associated with nursing staff turnover, and the explained variance of turnover significantly improved, particularly for NAs, with the addition of the control structure to a model including the opportunity and organizational structures (Halbur, 1983).

We used a modified version of the structural model proposed by Halbur (1983) that focused specifically on the organizational and control structures. Within our framework of analysis (Figure 3.1), the organizational structure was measured by NH organizational characteristics (i.e., size, profit status, chain membership, financial and staffing resources) and the control structure was measured by job characteristics of NA staff (i.e., pay, benefits, unionization, training, and work-related tasks). We expected that both organizational and job characteristics would be associated with NA turnover but that job characteristics would be more important. We thus hypothesized that organizational characteristics would be associated with NA turnover when job characteristics were not examined. We further hypothesized that job characteristics would explain the relationship between organizational characteristics and NA turnover.

Methods

Sample

Data were derived from the 2004 National Nursing Home Survey (NNHS), a publicly available dataset provided by the National Center for Health Statistics that surveys a nationally representative sample of NHs in the U.S. The 2004 NNHS was administered between August and December 2004 and includes components on staffing and facility characteristics at the organizational level. The staffing questionnaire is a self-administered questionnaire completed by the NH administrator. It contains data on education, staffing levels, staff turnover and tenure, staffing practices, and wages and benefits of various categories of staff within the facility. The facility questionnaire is completed by an in-person, computer-assisted interview with the administrator. This component contains organizational characteristics and services provided by the facility. Both of these components are included together in one publicly available data set.

For this survey, a sampling frame of 16,628 NHs was stratified by bed size and metropolitan area and then sorted by certification status, hospital relationship, ownership, geographic region, state, county, and zip code. NHs included in the study were selected using systematic sampling based on probabilities proportional to bed size. A total of 1,500 NHs were selected from the sampling frame. Of these, 283 refused to participate and 43 were ineligible for the study. The final sample yielded 1,174 participating NHs included in the NNHS for a response rate of 81%. Participating facilities had at least 3 beds and were certified by Medicare or Medicaid or had a State license to operate.

The analytic sample for this study consisted of 944 of the 1,174 nursing facilities (80%) from the NNHS. Due to missing data on study variables, 230 facilities were

deleted. The 230 omitted facilities did not differ significantly ($p > .05$) on bed size, profit

status, or occupancy rate, although those omitted were more likely to belong to a NH

chain ($\chi^2 = 4.45$, $p = .04$).

Measures

    Turnover. For NA turnover, the NNHS ascertains the number of certified NAs

who left during the last 3-month period for full and part-time staff. To calculate an

average 3-month turnover rate for each facility, these full and part-time figures were

combined together to arrive at the number of NA full-time equivalents (FTEs) that left

employment in the last 3 months and then divided by the number of established

positions as given by NA FTEs. This definition of turnover includes both voluntary and

involuntary separations from the organization and both full-time and part-time staff on all

work shifts. With the exception of a 3-month time period used in the NNHS, this

definition is consistent with previous work assessing the measurement of NH staff

turnover (Castle, 2006). The 3-month NA turnover rate in this sample ranged from 0% to

148%, with a mean of 19% ($SD = 20\%$).

    Organizational Characteristics. A total of nine organizational characteristics that

may influence turnover of NA staff were included in this study. Several of these were

ordinal level variables that needed to be recoded to attain adequate data distribution

across levels of measurement. Facility bed size was measured as 3-49 beds, 50-99,

100-199, and >200 beds and was dichotomized for this study into <100 beds (0) and

≥100 beds (1). Profit status was measured as government or private not-for-profit (0)

versus for-profit (1), and chain membership was measured as belonging to a NH chain

(1) versus not (0). Medicaid census, or the proportion of Medicaid residents in the

facility, was measured as <19%, 20-39%, 40-59%, 60-79%, and ≥80%. For this analysis,

it was dummy coded into three variables to represent low (0-59%), moderate (60-79%), and high (≥80%) levels of Medicaid occupancy. Medicare census was measured as <9%, 10-19%, and ≥20% and was recoded into <9% (0) versus ≥10% (1). Furthermore, total facility occupancy was measured as <70%, 70-79%, 80-89%, 90-94%, and ≥95%. For this analysis, it was dummy coded into three variables to represent low (<70%), moderate (80-94%), and high (≥95%) facility occupancy levels. The level of total nurse staffing (i.e., RN, LPN, and NA) hours per patient day (HPPD) was also included. This variable was measured as <1.0, 1.0-1.99, 2.0-2.99, 3-3.99, and ≥4.0 HPPD and was dichotomized to reflect <4.0 HPPD (0) versus ≥4.0 HPPD (1) of total nursing care based on an optimal level of 4.1 HPPD recommended by the Centers for Medicare and Medicaid Services (2001. Lastly, administrative and nursing stability were included as measured by the NH administrator and director of nursing tenure, respectively, in months at the surveyed facility.

Job Characteristics. Several job characteristics of NAs at the facility level were available for inclusion in this study. The average NA hourly wage was included as a continuous measure. The following benefits were selected from a list of twelve benefits offered by the facility based on significant correlations ($p < .05$) with NA turnover: fully paid health insurance for the employee or family, partially paid health insurance for the employee or family, retirement, paid sick leave, paid personal days, and employee assistance benefits. Partially paid health insurance refers to health benefits in which NA staff were responsible for a portion of the premiums. Few facilities offered fully paid health insurance, so employee only and family coverage were combined. Involvement of NAs in a labor union at the facility was included as a dichotomous variable. Participation of NAs in resident care planning was dummy coded into three variables to represent

seldom/never, some of the time, or always/most of the time involved in resident care planning. The presence of permanent resident assignments, in which NAs are assigned to the care of the same residents, was included as a dichotomous variable. Since the survey did not include specific training of NAs, a dichotomous variable was included to indicate whether a facility had at least one of the following programs which utilized specialty trained staff as a proxy for staff training: hospice, palliative care, pain management, behavioral problem management, skin wounds, continence management, dementia, and restorative care. Lastly, the number of overtime shifts worked by NAs at the facility in the past week was included as a continuous measure.

Analyses

Descriptive statistics were calculated for all study variables, and bivariate correlations among variables were examined prior to the multivariate analysis to examine the possibility of multicollinearity. The variables showed no substantial indication of collinearity. The highest correlations were found between fully paid health insurance and partially paid health insurance for the employee ($r = -.41$) and for tenure of the NH administrator and director of nursing ($r = .37$).

Several previous studies have demonstrated that turnover is nonlinear and that factors associated with low and high turnover are different (e.g., Brannon et al., 2002; Castle & Engberg, 2006). Therefore, turnover was modeled as a discrete variable with low, moderate, and high categories, where moderate turnover was the reference group. We were particularly interested in identifying organizational and job characteristics that distinguish facilities with the lowest and highest NA turnover. Thus, 25% of facilities with the lowest turnover rates were classified as low turnover (3-month turnover rates less than 6%), 25% of facilities with the highest turnover were classified as high turnover (3-

month turnover rates greater than 25%), and the remaining 50% of facilities were classified as moderate turnover to represent the norm in the sample.

Multinomial logistic regression in the SAS procedure CATMOD (SAS Institute, 2003) was used to determine organizational and job characteristics associated with low and high NA turnover relative to facilities with moderate NA turnover. Multinomial logistic regression is an extension of binary logistic regression and is appropriate when there are more than two categories of a dependent variable that are mutually exclusive and exhaustive. To test the hypotheses, organizational characteristics were entered into the model first followed by job characteristics to examine the associations of organizational characteristics with NA turnover prior to and subsequent to entering job characteristics. Odds ratios and confidence intervals were calculated for each independent variable for low and high turnover compared to the reference group, moderate turnover. Odds ratios above 1.00 indicate an increase in odds and below 1.00 indicate a decrease in odds of being in the low or high turnover group compared to the moderate turnover group.

Results

Descriptive statistics for the facility sample are presented in Table 3.1. Nearly half of the facilities surveyed had more than 100 beds and approximately half belonged to a NH chain. A majority (59%) was for-profit and three-fourths had occupancy rates exceeding 80%. These facilities served predominantly Medicaid residents, with the majority having greater than 60% occupancy of Medicaid recipients. Forty-five percent had greater than 10% occupancy of residents reimbursed under Medicare. In terms of clinical resources, only 20% of facilities offered at least 4.0 HPPD of total nursing care. Tenure of the NH administrator and director of nursing in the facility was comparatively long for the industry, with slightly more than 5 years for the NH administrator and

exceeding 3 years for the director of nursing.

In relation to job characteristics, NAs were paid an average hourly wage of $8.70 per hour and were largely offered partially paid health insurance for the employee (69%) or for family coverage (58%), retirement (60%), paid sick days (79%), and paid personal days (64%). Relatively few facilities offered fully paid health insurance for the employee or family (13%) and access to employee assistance programs (30%). Union involvement of NAs was found in only 15% of facilities. The majority of facilities offered programs employing specialty trained staff (80%), suggesting widespread availability of staff training in the facilities. Furthermore, most facilities assigned residents permanently to NAs (68%) and involved NAs in resident care planning some or most of the time (65%). Facilities averaged 10 overtime shifts per week for NA staff.

Table 3.2 presents odds ratios and standard errors from the multinomial logistic regression models. To test the hypotheses, the first model examined associations with organizational characteristics only. Larger facility size, moderate occupancy, nursing care above 4.0 HPPD, and longer tenure of the director of nursing reduced the likelihood of high turnover whereas for-profit status increased the likelihood of high turnover compared to moderate turnover. A high Medicaid census and nursing care above 4.0 HPPD increased the likelihood of low turnover compared to moderate turnover.

The main analysis, which included the addition of job characteristics, is presented in the second model in Table 3.2. The second model accounted for more variance in turnover as represented by an increase in pseudo r-squared values from 0.15 to 0.22. Only one organizational characteristic, nursing HPPD, was statistically significant while several job characteristics of staff were significantly associated with NA turnover. Specifically, greater than 4.0 HPPD of nursing care was associated with over a

four-fold increase in the odds of low turnover and a 43% decrease in the odds of high turnover compared to moderate turnover. Other organizational characteristics including Medicare census and director of nursing tenure approached statistical significance ($p <$ .10). NA wage was significantly associated with both low and high turnover. Specifically, a one dollar increase in wages increased the likelihood of low turnover by 21% and decreased the likelihood of high turnover by 20% in comparison to moderate turnover. In addition, NA involvement in a labor union increased the likelihood of being in the low turnover group compared to the moderate turnover group by 66%. Two employment-based benefits, fully paid health insurance and availability of employee assistance programs, were significantly associated with a reduced odds of high turnover compared to moderate turnover by 50% and 38%, respectively. Finally, involvement in care planning some or most of the time compared to seldom or never was significantly associated with a lower likelihood of high turnover compared to moderate turnover by 44% and 38%, respectively.

To assess the robustness of these findings, a sensitivity analysis was conducted (not shown) using cut-off points for low and high turnover based on prior studies (e.g., Brannon et al., 2002; Castle, 2005; Castle & Engberg, 2006). No substantive or directional changes in the results were found, supporting the validity of the findings.

Discussion

Recruitment and retention of NAs has been an ongoing challenge with implications for the quality of resident care. In this study, we examined NH organizational characteristics and specific job characteristics of staff in relation to turnover of NAs. Only one organizational characteristic (albeit an important one for practice and policy), nurse staffing levels, was associated with NA turnover in the full model. In support of our

hypotheses, several job characteristics including unionization, wages, fully paid health insurance, employee assistance benefits, and involvement in resident care planning were associated with NA turnover. Consistent with our framework of analysis (Figure 3.1), these findings suggest that organizational characteristics are associated with NA turnover but their influence is mostly explained by job characteristics of staff. The findings also suggest that job characteristics appear to be particularly important for turnover of NAs. A practical aspect of our findings is that the organizational and job characteristics associated with NA turnover are all potentially modifiable, and the resulting implications are discussed below in detail.

The results of this study indicate that high levels of nurse staffing increased the likelihood of low turnover and decreased the likelihood of high turnover of NAs. Others have also found that greater staffing levels are associated with lower NA turnover (e.g., Castle, 2005; Castle & Engberg, 2006; Donoghue & Castle, 2007), although it is possible that a reciprocal relationship exists as high turnover has also been shown to have a negative effect on nurse staffing levels (Harrington & Swan, 2003). A possible explanation for the finding in this study is that greater staffing levels reduce workload and allow NAs to spend more time providing quality care and interacting with residents, which have previously been shown to be important to NA staff (Bowers, Esmond, & Jacobson, 2000; Chou, Boldy, & Lee, 2002). Thus, staffing at higher levels may potentially increase NA job satisfaction and subsequently reduce turnover. An important policy implication is that mandated staffing at or above the 4.1 HPPD recommended by the Centers for Medicare and Medicaid Services (2001) may not only improve resident care but may also reduce turnover. Although increasing staffing levels may initially be costly, it may save expenses associated with NA turnover which is estimated at $4.1

billion annually (Seavey, 2004).

Similar to the findings of Kash and colleagues (2007), this study provides evidence that hourly pay is an important factor contributing to NA turnover. Moreover, our finding that union involvement was associated with lower turnover further underscores the importance of pay, as unions tend to improve pay. Increasing wages may be a promising solution to the turnover crisis, yet it is also a challenging endeavor for many NHs that rely on fixed payments from Medicaid and Medicare. One possibility is for NH providers to reduce unnecessary spending in other cost centers, such as advertising expenses (Kash & Boyer, 2008), to increase spending on NA wages. Other initiatives that have successfully been used to increase wages of direct care workers include state utilization of wage pass-throughs to increase reimbursement from public funds, collective bargaining from unions or consumer groups, and improvements in minimum wage laws (Seavey & Salter, 2006). Policies such as these should continue to be implemented and dedicated to increasing NA wages.

In addition, availability of fully paid health insurance reduced the likelihood of high turnover. These findings provide evidence for the importance of health benefits on staff retention in the NH industry. The finding that only fully paid health insurance was significant suggests that even partially paid health insurance may not be as important to NAs, likely because of difficulty paying their portion of premiums. Ongoing strategies to increase the availability and affordability of health insurance coverage for direct care workers are needed and include subsidizing employer-sponsored health plans, expanding employer-based coverage, and increasing eligibility for publicly-funded plans (Seavey & Salter, 2006). On a much broader level, health care reform by policy makers is needed to improve the accessibility and affordability of health insurance, particularly

for low wage workers such as NAs. These findings are particularly relevant considering the increasing expenditures on health care, and national health care policy decisions will likely influence actions within the NH industry to offer affordable health insurance to its employees.

Findings from this study also highlight the importance of employee assistance programs, an employment-based benefit. Specifically, the availability of these programs reduced the likelihood of high turnover compared to moderate turnover. NAs face several personal and job-related stressors that may affect their ability to stay in their jobs. For example, Foner (1994) found that NAs face a multitude of personal problems including difficulties with finances, housing, child care, transportation, and domestic relationships. In the workplace, stressors may include demanding work schedules (Geiger-Brown, Muntaner, Lipscomb, & Trinkoff, 2004), heavy workloads (Chou et al., 2002), and the physically and emotionally challenging tasks of resident care (Myers, Silverstein, & Nelson, 2002). It may be that these employee assistance programs help NA staff more effectively manage their personal and work-related stress, which may increase job satisfaction and reduce turnover. Providers should consider the addition of this employment-based benefit to potentially reduce NA turnover.

Involvement in resident care planning significantly reduced the likelihood of high NA turnover, which is consistent with the findings of Banaszak-Holl and Hines (1996). Similarly, culture change movements such as the Wellspring model which involve direct care workers in decision-making have been found to successfully reduce staff turnover (Stone et al., 2002). Involvement in decision-making provides NAs with greater responsibility and empowerment, which may subsequently increase job satisfaction and reduce turnover. Involving NAs in resident care planning on a regular basis may be an

important and cost-effective intervention to implement in NHs to reduce turnover.

Limitations

There are a few notable limitations to this study. First, the study is cross-sectional, so only associations between organizational and job characteristics and NA turnover can be identified. For example, we cannot infer from the cross-sectional findings that higher wages reduce turnover since low turnover may also contribute to higher average wages. The measure of turnover also included both voluntary and involuntary separations from the facility, which likely have different correlates (Castle, 2006). Future research would benefit from utilizing longitudinal data to examine predictors of voluntary or involuntary turnover of NA staff.

There are additional limitations with the NNHS public use data. First, many of the variables were measured at the ordinal level when a continuous measurement may have been preferable. There may also be other potentially important organizational or job characteristics related to NA turnover that were not available in the data, such as acuity of residents (Castle, 2005) or quality of care indicators (Castle & Engberg, 2006). Moreover, we could not control for local market characteristics due to lack of information about facility location. Others have found that market factors such as unemployment rate, per capita income, and number of local nursing home beds may affect turnover rates (Banaszack-Holl & Hines, 1996; Castle & Engberg, 2006), although it is unlikely that these controls would have changed the findings. Lastly, we were not able to include individual-level factors such as job satisfaction or intent to leave, which may also explain turnover (Price, 2001). Future research efforts are needed to examine facility, market, and individual level factors associated with turnover within the same model.

Conclusion

More direct care workers will be needed in the coming decades to provide care for the increasing older adult population. Addressing the high turnover of these paraprofessionals may be important to ensure quality of resident care. The results of this study show that NH organizational and job characteristics of staff are important factors associated with turnover of NAs. Specifically, nurse staffing levels, wages, health insurance, employee assistance benefits, unionization, and involvement in resident care planning were significantly associated with NA turnover. Attention to these organizational and job characteristics may help reduce turnover and subsequently improve the delivery of resident care.

Table 3.1 Nursing Home OrganizationalCharacteristics, Job Characteristics, and Turnover

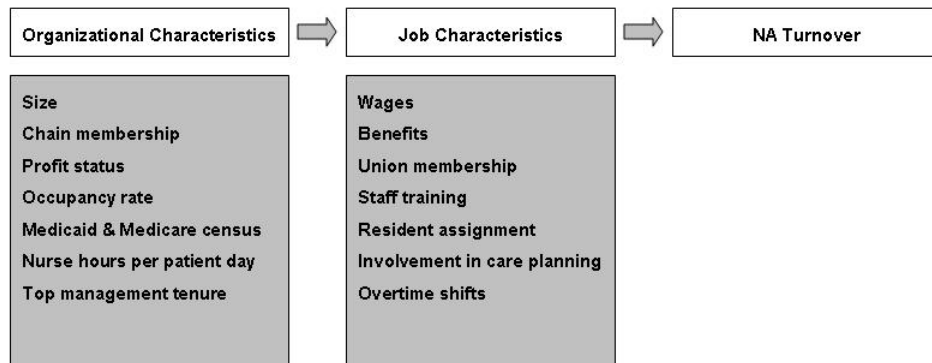| Variable	Operational Definition	% or M (SD)
Organizational Characteristics		
Facility size	≥ 100 beds	48
Chain membership	Member of a nursing home chain	51
For-profit ownership	For-profit ownership of facility	59
Occupancy	Proportion of beds utilized by residents	
< 80%		24
80-94%		42
≥ 95%		34
Medicaid census	Proportion of residents paid by Medicaid	
< 60%		37
60-79%		42
≥ 80%		21
Medicare census	≥ 10% of residents paid by Medicare	45
Nurse HPPD	≥ 4.0 HPPD of total nursing staff (RN+LPN+NA)	20
NHA tenure	Nursing home administrator months at current facility	64.3 (74.6)
DON tenure	Director of nursing months at current facility	41.0 (47.8)
Job Characteristics		
NA wage	Average NA wage per hour	8.7 (1.5)
Full insurance	Fully paid health insurance for employee or family	13
Partial employee insurance	Partially paid health insurance for employee	69
Partial family insurance	Partially paid health insurance for employee's family	58
Retirement	Retirement or pension program	60
Sick days	Paid sick days	79
Personal days	Paid personal days	64
Employee assistance	Employee assistance program	30
NA union	Presence of NA union involvement	15
Staff training	Facility offers programs with specialty trained staff	80
Resident assignment	NA assigned to same residents	68
Care planning	NA frequency of involvement in resident care planning	
Seldom/never		35
Some of the time		28
Always/most of the time		37
Overtime shifts	NA overtime shifts per week at facility	10.1 (19.8)
Turnover		
Low turnover	3 month NA turnover rate < 6%	25
Moderate turnover	3 month NA turnover rate ≥ 6% and ≤ 25%	50
High turnover	3 month NA turnover > 25%	25

Notes. N = 944 facilities. M = mean; SD = standard deviation; HPPD = hours per patient day; RN = registered nurse; LPN = licensed practical nurse; NA = nursing assistant; NHA = nursing home administrator; DON = director of nursing.

Table 3.2 Organizational and Job Characteristics Associated with Low and High NA Turnover Compared to Moderate NA Turnover

	Model 1		Model 2	
	Low	High	Low	High
	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Organizational Characteristics				
Facility size (Ref < 100 beds)	0.82 (.17)	0.70 (.17) *	0.73 (.20)	0.74 (.19)
Chain membership (Ref = no)	0.89 (.19)	0.84 (.19)	0.96 (.19)	0.87 (.20)
For-profit ownership (Ref = nonprofit)	0.81 (.19)	1.96 (.20) **	0.85 (.22)	1.41 (.23)
Occupancy (Ref < 80%)				
80-94%	0.89 (.22)	0.67 (.21) *	0.91 (.23)	0.75 (.22)
≥ 95%	1.29 (.23)	0.72 (.22)	1.26 (.24)	0.90 (.24)
Medicaid census (Ref < 60%)				
60-79%	0.94 (.20)	1.08 (.19)	0.90 (.20)	1.00 (.20)
≥ 80%	1.64 (.25) *	1.11 (.25)	1.42 (.26)	0.95 (.27)
Medicare census (Ref < 10%)	1.35 (.19)	1.26 (.19)	1.38 (.19) ^	1.29 (.20)
Nurse HPPD (Ref < 4.0)	4.35 (.19) **	0.59 (.27) *	4.60 (.20) **	0.57 (.28) *
NHA tenure	1.00 (.01)	1.00 (.01)	1.00 (.01)	1.00 (.01)
DON tenure	1.00 (.01)	0.99 (.01) *	1.00 (.01)	0.99 (.01) ^
Job Characteristics				
NA wage			1.21 (.06) **	0.80 (.07) **
Full insurance (Ref = no)			1.05 (.28)	0.50 (.35) *
Partial employee insurance (Ref = no)			0.86 (.22)	0.95 (.21)
Partial family insurance (Ref = no)			0.81 (.20)	0.82 (.20)
Retirement (Ref = no)			0.88 (.20)	0.98 (.19)
Sick days (Ref = no)			1.12 (.24)	0.68 (.21) ^
Personal days (Ref = no)			1.12 (.19)	1.15 (.18)
Employee assistance (Ref = no)			0.85 (.20)	0.62 (.23) *
NA union (Ref = no)			1.66 (.25) *	1.04 (.29)
Staff training (Ref = no)			0.73 (.22)	1.01 (.22)
Resident assignment (Ref = no)			1.26 (.20)	1.32 (.19)
Care planning (Ref = Seldom/never)				
Some of the time			0.83 (.23)	0.56 (.22) **
Always/most of the time			1.14 (.20)	0.62 (.20) *
Overtime shifts			1.00 (.01)	1.00 (.01)
Pseudo R^2	0.15		0.22	

Notes. N = 944 facilities. NA = nursing assistant; OR = odds ratio; SE = standard error; Ref = reference; HPPD = hours per patient day; NHA = nursing home administrator; DON = director of nursing;
^p<.10; *p<.05; **p<.01.

Figure 3.1 Framework of Analysis for Nursing Assistant (NA) Turnover

Organizational Characteristics	⇒	Job Characteristics	⇒	NA Turnover
Size Chain membership Profit status Occupancy rate Medicaid & Medicare census Nurse hours per patient day Top management tenure		Wages Benefits Union membership Staff training Resident assignment Involvement in care planning Overtime shifts		

Chapter Four: Study III

Nursing Home Characteristics and the Availability of Benefits for Nursing Assistants:

Results from the National Nursing Home Survey

April Temple, NHA, Debra Dobbs, PhD & Ross Andel, PhD

Abstract

Purpose: The purpose of this study was to describe the presence of employment-based benefits of nursing assistants (NAs) and to explore nursing home organizational characteristics associated with benefits offered to these staff.

Methods: Cross-sectional data on 944 nationally representative nursing homes were derived from the 2004 National Nursing Home Survey. Benefits were measured as a composite variable of five NA benefits weighted by cost. Multivariate ordinary least squares regression was used to examine the relationship between organizational characteristics and NA benefits.

Results: For-profit ownership and Medicaid occupancy were negatively associated with NA benefits. Facility size, chain membership, occupancy level, union involvement, and education of the nursing home administrator were positively associated with NA benefits.

Implications: Organizational characteristics may explain some of the variation in the availability of NA benefits across nursing homes and may be informative for policy and practice to improve NA staff recruitment and retention. In particular, facilities with for-profit ownership and high proportions of Medicaid residents should consider cost-effective ways to enhance the benefit package offered to NAs.

Introduction

Nursing assistants (NAs) deliver the majority of direct care that is central to a resident's quality of care and quality of life in a nursing home (NH). With respect to maintaining a qualified direct care workforce, high vacancy and turnover rates represent major challenges faced by the NH industry. NAs hold approximately 1.1 million jobs in NHs (Smith & Baughman, 2007), yet vacancy rates indicate this number is insufficient to meet the current demand (American Health Care Association, 2003). Furthermore, historically high turnover rates of NAs, measuring 71% annually across the nation's NHs, exacerbate the unmet need (American Health Care Association, 2003). As the demand for these paraprofessional staff is projected to increase with the aging of the baby boomers (U. S. Bureau of Labor Statistics, 2000; U. S. Department of Health and Human Services, 2003), attention to recruitment and retention of NAs is of importance.

A significant factor affecting the recruitment and retention of NAs that has received less attention in the literature is the limited availability of employee benefits (U. S. Department of Health and Human Services, 2003; Stone & Weiner, 2001). For example, less than half of NAs receive health insurance through their employer (Potter, Churilla, & Smith, 2006; Smith & Baughman, 2007), and three-fourths have no pension benefits (U.S. General Accounting Office, 2001). A recent report by the Institute of Medicine (2008) highlighted the importance of benefits for the recruitment and retention of direct care workers including NAs and recommended increasing the availability of benefits. However, little is known about the range of benefits offered to NAs and the variation of benefits across the NH industry. The primary purpose of this study was to examine employment-based benefits offered to NAs and to explore the relationship between NH organizational characteristics and the availability of NA staff benefits.

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The Importance of Benefits

Employment-based benefits are an important component of employee compensation. In addition to those that are legally required, benefits including health insurance, paid time off, retirement programs, and other fringe benefits constitute approximately 30% of employee compensation (U.S. Bureau of Labor Statistics, 2007a). The provision of benefits has been associated with improvements in job satisfaction (Price, 2001), job performance (Lambert, 2000), and recruitment and retention of employees (Sethi, 2001; Spetz & Adams, 2006). In the NH setting, recent studies have found that benefits were associated with fewer intentions to leave (Stearns & D'Arcy, 2008) and lower turnover among NAs (Temple, Dobbs, & Andel, 2009). Furthermore, research resulting from the Better Jobs Better Care initiative found that benefits were positively associated with job commitment (Bishop et al., 2008) and job satisfaction (Ejaz, Noelker, Menne, & Bagaka's, 2008) of direct care workers.

Theoretical Framework for the Availability of Benefits in Nursing Homes

For decades now, critical perspectives on social policy and aging have been used to explain the quality of care delivery for older adults, including care provided in NHs (e.g., Estes, 1979; Estes, Harrington, & Pellow, 2001; Estes, Wallace, Linkins & Binney, 2001). The political economy of aging perspective (Estes, 1999a; 1999b) emphasizes the influence of political, economic, and sociocultural factors on the distribution of resources for the care of older adults. Within this framework, a market-driven healthcare system reinforced by public policies has facilitated the creation of the "aging enterprise" (Estes, 1979; Estes, 1999b; Estes, Harrington, et al., 2001). The aging enterprise refers to burgeoning industries that have had a considerable financial interest in serving the needs of older adults (Estes, 1979; Estes, 1999b). Thus

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healthcare, including NH care, has become a profitable commodity through cost containment measures, growth in the for-profit sector, and corporate consolidation (Estes, 1999b; Estes, Harrington, et al., 2001).

These market-driven changes in the industry have influenced the organizational context and operations of many NHs with potentially negative consequences for staffing. Consistent with the political economy of aging perspective, NH structural characteristics including size, profit status, chain membership, and occupancy by payer source may provide insight into the variation of NH investments in benefits of NA staff. Given the relationship between benefits and staff retention found previously (Bishop et al., 2008; Stearns & D'Arcy, 2008; Temple et al., 2009), understanding correlates of the extent of benefit provision across facilities may have important implications for strategies to improve staff retention.

Nursing Home Characteristics and the Availability of Benefits

Aging policies in the U.S. have reinforced market-driven systems over the years, which has created the aging enterprise and resulted in a NH industry that is mostly profit motivated (Estes, Harrington, et al., 2001). The NH industry experienced a significant increase in for-profit and chain membership from the 1970s to 1990s (Estes, Harrington, et al., 2001). For-profit facilities are primarily concerned with profit maximization and as a result may not invest as much in employee compensation as nonprofits. Using 54 NHs from Wisconsin, Haley-Lock and Kruzich (2008) found that public and nonprofit NHs were associated with better wages and health insurance contributions for NAs. Similarly, Kash and colleagues (2007) found that expense ratios related to nursing staff benefits was significantly higher in nonprofit versus for-profit NHs. In contrast to these findings, Hunter (2000) did not find an association between profit status and an index of NA

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wages and benefits in a sample of 149 NHs in Massachusetts. In addition to profit

status, NHs belonging to a multi-facility chain overseen by the same corporate

organization may benefit from greater economies of scale and sources of capital. This

may explain the finding that those facilities belonging to a corporate chain are more likely

to provide better NA wages and benefits (Haley-Lock & Kruzich, 2008).

With the goal of profit maximization present in the aging enterprise (Estes, 1979;

Estes, 1999b), sources of revenue may also affect the capacity of NHs to invest in

benefits for NA staff. Facilities with larger numbers of beds and higher occupancy rates

may be indicative of greater revenue and better performance, and research has shown

that these characteristics are associated with better NA wages and benefits (Haley-Lock

& Kruzich, 2008). Occupancy rates by payer source may also influence profits and

expenditures on staffing. Medicaid is the lowest third-party payer of NH care in contrast

to Medicare and private pay, and research has shown that greater proportions of private

pay residents have been associated with higher job quality of NAs in terms of wages and

benefits (Hunter, 2000).

Other important organizational influences on the availability of staff benefits may

exist. Because of the focus on profit maximization apparent in the aging enterprise

(Estes, 1979), collective bargaining of employee unions may have an important influence

on minimum wages and benefits offered to staff. For example, union presence was

associated with higher job quality of NAs in one study (Hunter, 2000). Additionally, NH

administrators with better training and education may be better able to balance the

competing demands of profit maximization and investment in human capital. One study

found that NH administrators that completed a standardized training program provided

better wages and benefits to NAs (Hunter, 2000) while another study found that NH

administrators with Master's degrees improved job quality of NAs only in nonprofit facilities (Haley-Lock & Kruzich, 2008).

The Present Study

Although some research suggests that organizational characteristics may play a role in the availability of benefits offered to NA staff across NHs, previous studies (e.g., Hunter, 2000; Haley-Lock & Kruzich, 2008) have been limited by small samples from a single state and the inclusion of only a few benefits in the outcome measure. Using the political economy of aging as a framework, the present study explored the presence of a full range of NA benefits and investigated the relationship between NH organizational characteristics and benefits offered to NA staff. It utilized a large, nationally representative sample of 1,174 NHs, allowing for generalizability of the findings. In addition, it included several benefits in the outcome measure that are likely considered the most important to employees. Consistent with the framework of the political economy of aging perspective (Estes, 1979; 1999b; Estes, Harrington, et al., 2001), we expected that the NH organizational context would be related to the provision of benefits. Specifically, we hypothesized that organizational characteristics including profit status, chain membership, occupancy by payer source, and union membership would be associated with the availability of benefits offered to NAs.

Methods

Sample

Data were derived from the 2004 National Nursing Home Survey (NNHS), a publicly available dataset provided by the National Center for Health Statistics that surveys a nationally representative sample of NHs in the U.S. The 2004 NNHS was administered between August and December 2004 and includes components on staffing

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and facility characteristics at the organizational level. The staffing questionnaire is a self-administered questionnaire completed by the NH administrator. It contains data on education, staffing levels, staff turnover and tenure, staffing practices, and wages and benefits of various categories of staff within the facility. The facility questionnaire is completed by an in-person, computer-assisted interview with the administrator. This component contains organizational characteristics and services provided by the facility. Both of these components are included together in one publicly available dataset.

For this survey, a sampling frame of 16,628 NHs was stratified by bed size and metropolitan area and then sorted by certification status, hospital relationship, ownership, geographic region, state, county, and zip code. NHs included in the study were selected using systematic sampling based on probabilities proportional to bed size. A total of 1,500 NHs were selected from the sampling frame. Of these, 283 refused to participate and 43 were ineligible for the study. The final sample yielded 1,174 participating NHs included in the NNHS for a response rate of 81%. Participating facilities had at least 3 beds and were certified by Medicare or Medicaid or had a State license to operate.

The analytic sample for this study consisted of 944 of the 1,174 NHs (80%) from the NNHS. Due to missing data on study variables, 230 facilities were deleted. The 230 omitted facilities did not differ significantly ($p > .05$) on bed size, profit status, or occupancy rate, although those omitted were more likely to belong to a NH chain ($\chi^2 =$ 4.45, p = .04).

Measures

Benefits. For the main analysis, benefits were measured as a composite variable based on the following five weighted benefits: health insurance, retirement, paid

vacation, paid sick days, and paid personal days. These benefits, which are among the most important in employee compensation (Christensen, 2002), were selected based on availability of weightings. The weightings were derived from the hourly cost in dollars of these benefits to employers in the private industry from the Employer Costs for Employee Compensation (ECEC; U.S. Bureau of Labor Statistics, 2007a). Costs for private industry were selected because NHs in the sample are largely based in the private industry. Weighting these benefits in terms of their respective costs to employers allowed for assessing the relative value of each benefit and capturing greater variation in the outcome rather than summing the number of available benefits.

For health insurance, facilities received a corresponding weight based on the most comprehensive level of health coverage offered to NAs: partially paid health insurance for the employee, fully paid health insurance for the employee, partially paid health insurance for the employee's family, and fully paid health insurance for the employee's family. The ECEC includes only an average hourly cost to employers for all health plans combined ($1.85; U.S. Bureau of Labor Statistics, 2007a). However, monthly employer costs of the four levels of health insurance coverage are included in the National Compensation Survey (NCS; U.S. Bureau of Labor Statistics, 2007b), from which the ECEC is derived. Using this information, the estimated hourly costs of the four plans in this study were averaged to equal the hourly cost of all health insurance plans presented in the ECEC and were calculated in the same relative proportions as the monthly costs in the NCS. For example, the least expensive plan, partial employee coverage, is approximately 33% of the monthly cost of the most expensive plan, full family coverage. Therefore, the calculated hourly cost of partial employee coverage is also 33% of the calculated hourly cost of full family coverage.

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Facilities received the corresponding weight in Table 4.1 if they offered the benefit to NA employees. The total benefits score for each facility was calculated as the sum of the weights of available benefits with a range from 0.06 to 4.96 and a mean of 3.27 (*SD* = 1.11).

There were additional benefits surveyed in the NNHS which could not be included in the benefits score due to lack of cost data to generate weights. However, these benefits were still included in this study to explore the full range of NA staff benefits. These benefits included child daycare, transportation allowance, employee assistance, and career promotion. Overall, the most important benefits from an employee's perspective were included in the benefits score (Christensen, 2002).

Organizational Characteristics. A total of eight organizational characteristics of NHs were included in this study, several of which needed to be recoded to attain adequate data distribution across levels of measurement. Facility bed size was measured as 3-49 beds, 50-99, 100-199, and >200 beds and was dichotomized for this study into <100 beds (0) and ≥100 beds (1). Profit status was measured as government or private not-for-profit (0) versus for-profit (1), and chain membership was measured as belonging to a NH chain (1) versus not (0). Medicaid census, or the proportion of Medicaid residents in the facility, was measured as <19%, 20-39%, 40-59%, 60-79%, and ≥80%. For this analysis, it was dummy coded into three variables to represent low (0-59%), moderate (60-79%), and high (≥80%) levels of Medicaid occupancy. Medicare census was measured as <9%, 10-19%, and ≥20% and was recoded into <9% (0) versus ≥10% (1). Total facility occupancy was measured as <70%, 70-79%, 80-89%, 90-94%, and ≥95%. For this analysis, it was dummy coded into three variables to represent low (<70%), moderate (80-94%), and high (≥95%) facility occupancy levels. The

education of the NH administrator was dichotomized as having a graduate degree (1) versus an undergraduate degree or lower level of education (0). Lastly, involvement of NAs in a labor union was included as a dichotomous variable.

Analyses

Descriptive statistics were calculated for all study variables, and bivariate correlations among variables were examined prior to the multivariate analysis to examine the possibility of multicollinearity. The variables showed no substantial indication of collinearity. The highest correlations were found between chain membership and for-profit ownership ($r = .38$) and between Medicaid and Medicare census ($r = -.34$). All of the organizational characteristics with the exception of chain membership were significantly correlated with the benefits score.

Ordinary Least Squares regression in the SAS program procedure REG (SAS Institute, 2003) was used to examine associations between organizational characteristics and the benefits score. Ordinary Least Squares regression examines the relationship between each independent variable and the dependent variable while controlling for all the other independent variables in the model. To test the hypothesis, all organizational characteristics were entered into the model, and two-tailed tests of significance ($p < .05$) were conducted to determine the statistical significance of each independent variable. The results are presented as unstandardized and standardized regression coefficients for each independent variable. The unstandardized regression coefficients represent the amount of change in the benefits score for a one-unit change in each respective independent variable whereas the standardized regression coefficients allow for the comparison of the relative influence of each independent variable on the outcome.

Results

Descriptive statistics for the facility sample are presented in Table 4.2. Nearly half of the facilities surveyed had more than 100 beds and approximately half belonged to a NH chain. A majority (59%) was for-profit and three-fourths had occupancy rates exceeding 80%. These facilities served predominately Medicaid residents, with the majority having greater than 60% occupancy of Medicaid recipients. Forty-five percent had greater than 10% occupancy of residents reimbursed under Medicare. Approximately 29% of NH administrators had a graduate degree. NA union involvement was present in only 15% of facilities.

In relation to the availability of NA benefits (Figure 4.1), the majority of facilities (55%) offered partially paid health insurance for family coverage as the most comprehensive health plan followed by partially paid health insurance for the individual employee (20%). Few facilities offered fully paid health insurance for the employee (10%) or family (3%), and approximately 12% offered no form of health insurance. Nearly all facilities offered paid vacation days (96%), and the majority offered retirement or pension plans (60%), paid sick days (79%), paid personal days (64%), and career promotion opportunities (71%). Relatively few NHs offered access to employee assistance programs (30%), child daycare assistance (5%), or transportation allowance (5%).

Table 4.3 presents the unstandardized and standardized regression coefficients from the multivariate regression model examining the association between organizational characteristics and NA benefits. Facility size and chain membership were positively associated with the NA benefits score, whereas for-profit ownership was negatively associated with the benefits score. NHs with higher occupancy levels were

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associated with a higher benefits score whereas NHs with higher Medicaid occupancy

levels were associated with a lower benefits score for NA staff. There was no

association with Medicare occupancy. The presence of NA union involvement and

graduate-level education of the nursing home administrator were both associated with a

higher NA benefits score. With respect to the standardized regression coefficients, for-

profit ownership and higher occupancy levels had the highest levels of association with

the NA benefits score. The model accounted for 16% of the variation in the benefits

score (Adjusted R^2 = .16).

Discussion

Recruitment and retention of NAs has been an ongoing challenge with direct

implications for maintaining a qualified workforce to provide long-term care to the

increasing population of older adults. Since employee benefits may be important for NA

job satisfaction (Ejaz et al., 2008) and retention (Bishop et al., 2008; Stearns & D'Arcy,

2008), we examined the availability of NA staff benefits and explored the relationship

between NH organizational characteristics and NA benefits in a large, nationally

representative sample of NHs. In support of our hypotheses, we found that several

organizational characteristics including size, profit status, chain membership, occupancy

levels, Medicaid occupancy, NA unionization, and education of the NH administrator

were associated with the level of benefits offered to NA staff. These findings are

consistent with theoretically-based expectations within the political economy framework

(e.g., Estes, 1999a) that systemic differences of NHs in the aging enterprise may

influence the availability of benefits for NA staff.

The results of this study indicate that for-profit facilities offered fewer benefits to

NA staff, and that the magnitude of this association was among the largest in the

analytic model. Previously, Haley-Lock and Kruzich (2008) found that public and nonprofit NHs provide better compensation to NAs in terms of wages and health insurance contributions. In context of the political economy framework (Estes, 1979; Estes, 1999a; Estes, Harrington, et al., 2001), the provision of fringe benefits may be counter to profit maximization present in the aging enterprise. Nonprofits may invest more in staff compensation due to ideological differences in mission as well as from favorable tax exemptions (Estes, Alford, & Egan, 2001). It may be advantageous for for-profit facilities to model nonprofit facilities in their provision of benefits to recruit and retain NAs. Although this may initially be detrimental to profits, providers may save direct and indirect expenses associated with NA turnover at an estimated $3,500 per worker (Seavey, 2004).

Similar to the findings of Haley-Lock and Kruzich (2008), this study provides additional evidence that chain membership may be positively associated with NA benefits. With the transformation of health services to a profit-seeking aging enterprise (Estes, Alford, et al., 2001), there has been a decrease in the number of free standing facilities and an increase in multi-facility chains. Multi-facility chains are more likely to take advantage of greater economies of scale and sources of capital, which may enable these facilities to offer more generous benefits. For example, NHs belonging to a chain may be able to negotiate more competitive health insurance plans for their employees. Therefore, free standing facilities may benefit economically from pooling together with other affiliated organizations to increase the availability of staff benefits.

NHs generally target clients and services toward those that generate the highest profits (Estes, Alford, et al., 2001). In this study, we found that larger bed size and higher occupancy levels were positively associated with the level of NA benefits. In contrast,

facilities with higher levels of Medicaid occupancy, the lowest third-party payer, offered

fewer NA benefits. Others have also found these relationships between size and

occupancy measures and the wages and benefits of NAs (Haley-Lock & Kruzich, 2008;

Hunter, 2000). It may be that larger facilities and highly occupied facilities bring in

greater sources of revenue, which in turn could be used to invest in staff benefits.

Contrastingly, higher proportions of Medicaid residents may be indicative of facilities that

bring in lower revenues, thus not able to offer as many fringe benefits to staff. In light of

these findings, it may be important for policy makers to recognize that low Medicaid

reimbursement rates may contribute to fewer benefits for NAs.

In a previous study, union membership was associated with lower turnover

among NAs (Brannon, Zinn, Mor, & Davis, 2002), which is likely due to the fact that

unions tend to improve pay and benefits. Results from this study provide evidence that

facilities in which NAs are members of a union offer higher levels of benefits to staff.

Similarly, Hunter (2000) found that unionization was associated with better job quality of

NAs in terms of wages and benefits. In relation to the commodification of care delivery in

the aging enterprise (Estes, Harrington, et al., 2001), collective bargaining from unions

may be one of few alternatives to increase spending on NA staff benefits. Thus,

investment in employee benefits for NAs may be one strategy for providers to avoid

unionization in their facilities.

Lastly, education of the NH administrator was positively associated with NA

benefits in the fully adjusted model. Specifically, facilities with administrators earning a

graduate level of education were associated with a higher level of benefits. This

association was also found in a study by Haley-Lock & Kruzich (2008), although the

relationship existed only among administrators in nonprofit facilities. In a similar study,

Hunter (2000) found a positive association between job quality of NAs and NHs with administrators who completed a state-approved training program. Administrators who are highly educated may possess additional knowledge in business or human resource management that allows them to recognize the importance of employee compensation in addition to earning profits. More research is needed in this area to understand the contributions of education of the administrator on staffing decisions.

Limitations

There are a few notable limitations to this study. First, the study is cross-sectional, so only associations between organizational characteristics and NA benefits can be identified. For example, we cannot infer from the cross-sectional findings that higher occupancy levels increase benefits offered to staff. Future research would benefit from utilizing longitudinal data to examine predictors of NA benefits. In addition, there may be other important organizational characteristics related to NA benefits that were not available in the data, such as facility expense ratios or profit margins. Moreover, we could not control for local market conditions due to limitations of the data. Future research efforts are needed to examine additional organizational and market characteristics associated with benefits provision within the same model. Lastly, we could not include all of the available benefits in the benefits score due to lack of data to generate weightings. Nonetheless, we feel we included the most important NA benefits in the outcome measure based on previous research (Christensen, 2002).

Despite these limitations, this study also has important strengths. To the best of our knowledge, this is the first study to explore the prevalence of a range of benefits offered to NA staff, which could be useful for future comparisons. In addition, this study utilized a large, nationally representative sample of NHs from the NNHS and included

the most important employee benefits in the outcome measure. Finally, the weighting of

the benefits score by cost to employers represents a novel way to capture the relative

worth of various benefits offered to NA staff. A direction for future research would be to

determine the value of various benefits from the perspective of NAs. NAs may place little

importance on select benefits or have low expectations of employers to offer certain

benefits, which may also influence the types of benefits that are widely available to these

staff.

Conclusion

Inadequate staffing levels and high turnover of NAs has direct implications for the

quality of resident care (Castle, 2008; Castle & Engberg, 2005; Harrington, Zimmerman,

Karon, Robinson, & Beutel, 2000). Increasing the availability of employment-based

benefits is receiving greater attention as one possible solution to address the ongoing

shortage and high turnover of NAs (Institute of Medicine, 2008). The results of this study

suggest that NH organizational characteristics may explain some of the variation in the

availability of benefits offered to NA staff. Attention to these systemic differences may be

informative for strategies for providers and policy makers to enhance the provision of

benefits to recruit and retain NA staff with the intention of improving quality of care.

Table 4.1 Weighting of NA Benefits

Benefit	Cost/Mo [a]	Cost/Hr [b]
Health insurance		
Partial employee[c]	265.74	0.94
Full employee[c]	382.19	1.34
Partial family[c]	642.02	2.26
Full family[c]	814.44	2.86
Retirement		0.92
Paid vacation		0.90
Paid sick days		0.22
Paid personal days		0.06

[a]National Compensation Survey.
[b]Employer Costs for Employee Compensation.
[c]Cost per month used to calculate cost per hour where the average is $1.85.

Table 4.2 Organizatinal Characteristics of the Sample

Variable	Operational Definition	%
Facility size	≥ 100 beds	48
For-profit ownership	For-profit ownership of facility	59
Chain membership	Member of a multi-facility chain	51
Occupancy	Percentage of beds utilized by residents	
≤ 79%		24
80-94%		42
≥ 95%		34
Medicaid census	Percentage of residents paid by Medicaid	
≤ 59%		37
60-79%		42
≥ 80%		21
Medicare census	≥ 10% of residents paid by Medicare	45
NHA education	NHA earned a Master's degree or higher	29
NA union	Presence of NA union involvement	15

Notes. N = 944 facilities. NHA = nursing home administrator; NA = nursing assistant.

**Table 4.3 Organizational Characteristics Associated with NA Benefits**

	b	SE	β
Facility size (Ref < 100 beds)	.20	.07	.09 **
For-profit ownership (Ref = nonprofit)	-.50	.08	-.22 ***
Chain membership (Ref = no)	.25	.07	.11 ***
Occupancy (Ref ≤ 79%)			
80-94%	.33	.09	.15 ***
≥ 95%	.54	.09	.23 ***
Medicaid census (Ref ≤ 59%)			
60-79%	-.19	.08	-.08 *
≥ 80%	-.31	.10	-.11 **
Medicare census (Ref < 10%)	.09	.08	.04
NHA education (Ref < graduate degree)	.21	.07	.09 **
NA union (Ref = no)	.47	.10	.15 ***

Notes. N = 944 facilities. NA = nursing assistant; b = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient; Ref = reference; NHA = nursing home administrator.

Adjusted R^2 = 0.16

*p<.05; **p<.01; ***p<.001.

Figure 4.1 Percentage of Nursing Homes with Benefits Offered to Nursing Assistants
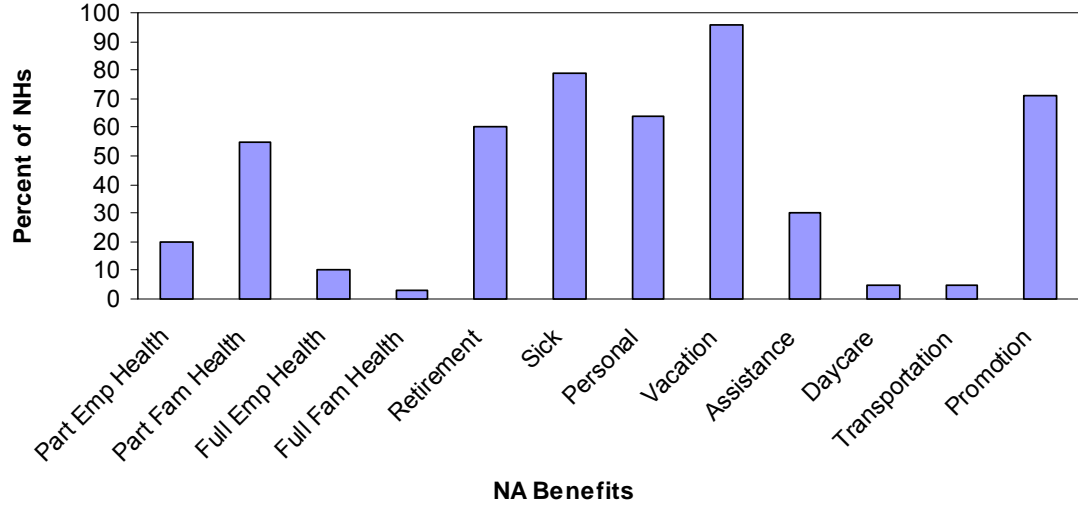
Notes. N = 944 facilities. NH = nursing home; NA = nursing assistant.

Chapter Five: Concluding Remarks

With the projected increased demand for long-term care, the utilization of less costly alternatives to NH care may be important to contain public and private expenditures on long-term care. The quality of care provided to increasing numbers of older adults in these long-term care settings is also of significance. In an attempt to contribute to the state of knowledge on the utilization and quality of long-term care, the purpose of this dissertation was to conduct three studies to understand factors affecting utilization along the continuum of care and the retention of direct care workers to improve quality care. In this section, the main findings of the three studies will be summarized and discussed. In addition, limitations of this dissertation and directions for future research will be addressed.

Discussion of Findings

The first study offered novel information on the viability of HCBS compared to AL as an alternative to NH care in a frail sample of dually eligible older adults. The results suggest that setting of care modifies the association between dementia and risk of NH placement. Specifically, dementia emerged as a significant risk factor for NH placement from HCBS but not from AL. This suggests that individuals with dementia who reside in AL may be able to age in place and avoid NH placement whereas those who receive HCBS remain at a relatively high risk for NH placement. These results are consistent with the aging in place philosophy of AL and the evolving role the AL industry has assumed in providing care to individuals with dementia.

Along the continuum, NHs are the most expensive and least desirable setting of long-term care. In response, states and the federal government have made concerted efforts to increase access to community-based long-term care. For example, Money Follows the Person federal demonstration grants aim to eliminate the bias towards NH care and rebalance the delivery of long-term care in 30 states (Centers for Medicare and Medicaid Services, 2007b). Findings of the first dissertation offer greater understanding of service utilization along the continuum and provide support for state and federal initiatives to increase access to community-based settings of long-term care, even for older adults with dementia.

The second study highlighted the importance of job characteristics of staff in relation to turnover of nursing assistants (NAs) using a nationally representative sample of NHs. Specifically, the provision of competitive wages and benefits, involvement in resident care planning, unionization, and high levels of nurse staffing could potentially reduce NA turnover. The inclusion of specific job characteristics of staff was a unique contribution to the literature, and the findings offer practice and policy implications with respect to increasing retention of NAs to improve the delivery of resident care.

The final study was unique in that it examined the prevalence of employment-based benefits of NAs and the relationship between NH organizational characteristics and benefits offered to these staff in a nationally representative sample of NHs. The results suggest that NH organizational characteristics are important for the availability of NA benefits. Facility size, chain membership, occupancy level, union involvement, and education of the administrator were positively associated with NA benefits whereas for-profit ownership and Medicaid occupancy were negatively associated with the provision of NA benefits. These findings are consistent with the political economy of aging

framework (e.g., Estes, 1999a) and suggest that systemic differences of NHs in the aging enterprise may influence an organization's investment in benefits for NA staff.

For those older adults who rely on NH care, quality of care in this setting has been a persistent concern. Several states have attempted to improve quality of care by increasing staffing levels (Mueller et al., 2006); however, little attention has been given to addressing the high turnover of nursing staff. The second and third studies of this dissertation highlight several strategies that NHs may employ to retain NAs and to improve the benefit package offered to these staff. Strategies that effectively reduce turnover of NA staff may subsequently contribute to improvements in quality of NH care. At the same time, many of these approaches may also require greater reimbursement to NHs from public payers, including Medicare and Medicaid.

Collectively, the three studies of this dissertation addressed two primary goals of long-term care: to facilitate aging in place in the least restrictive setting and to provide high quality of care to consumers. Taken together, reductions in expenditures achieved by rebalancing the delivery of long-term care may provide for increased spending on staff retention to improve the quality of NH care. In practice, however, these two goals may be at odds. For example, mandated staffing increases in Florida were financed by reducing state expenditures on HCBS (Florida Policy Exchange Center on Aging, 2001). Within a limited budget, policy makers will have to grapple with balancing the costs of providing care to greater numbers of older adults in the community versus investing in retention of qualified staff to improve quality of NH care.

Limitations

Although each of the studies has unique contributions, their limitations should also be acknowledged. In the first study, the sample consisted of a relatively frail sample

of dually eligible older adults in one state. Although this sample is unique, the generalizability of the findings is limited. Future studies should include a more representative sample of older adults in HCBS or AL which include both publicly and privately funded clients. Secondly, the measures were collected at baseline. There is a possibility that health status and setting of care changed over the follow-up period. Consequently, there is a need for future longitudinal studies to use multiple assessments to account for these potential changes in the analyses. Lastly, the severity of dementia or cognitive impairment was not available. Although we accounted for functional limitations, including these measures would strengthen the findings.

The second study was a cross-sectional examination of organizational and job characteristics in relation to NA turnover. This type of analysis limits the ability to conclude whether these characteristics influence turnover. Future research in this area would benefit from using longitudinal data to examine the directionality of the relationship between organizational or job characteristics and turnover of NAs. In addition, several of the measures in the publicly available data set used in this research were provided at the ordinal level when a continuous measure may have been preferable. Lastly, other previously identified factors relating to nursing staff turnover such as resident, market and individual characteristics could not be examined.

The final study was limited by its cross-sectional analysis of the relationship between NH organizational characteristics and NA benefits. Longitudinal research is needed to infer how NH organizational characteristics affect the availability of NA benefits. In addition, there may be other important factors related to NA benefits that were not available in the National Nursing Home Survey, such as facility expense ratios, profit margins, or local market conditions. Future studies should look more closely at

these factors which may be associated with the provision of benefits. Lastly, we could not include all of the surveyed benefits in the outcome measure due to lack of data to generate weightings. As information on the employer costs of these benefits becomes available, future research would be strengthened by the inclusion of all available benefits in the outcome.

Future Directions

This dissertation research was undertaken to examine two salient issues in long-term care: utilization and quality. Although several important research questions were addressed, other key questions beyond the scope of this dissertation remain. For example, what are the potential costs and benefits of serving frail older adults with significant long-term care needs in the community? If high turnover of direct care staff was addressed, would quality of care subsequently improve? It is imperative that these questions are answered to achieve positive change in the long-term care system.

The first direction for future research is to determine the potential costs and benefits of providing long-term care to frail older adults in HCBS and AL compared to a NH. More studies are needed to assess clinical outcomes of care in HCBS and AL for individuals with significant physical or cognitive impairments to ensure placement in these settings is appropriate. Moreover, it is important to determine the overall cost-effectiveness of care provided in HCBS or AL as an alternative to NH care. Expanded access to publicly funded HCBS and AL has the potential to reduce Medicaid expenditures on long-term care, but a greater understanding of these savings balanced with the potential cost shifting to Medicare for increased hospitalizations and acute rehabilitation is needed.   This dissertation was not able to examine clinical outcomes or

costs of care, and this information may be useful to policy makers to support increased funding of HCBS and AL.

One final direction for future research is to further explore the role of amenable factors related to turnover of NAs and the delivery of quality NH care. Quality of care was indirectly assessed in this dissertation by using turnover as a proxy measure; therefore, future research is needed to test directly the relationship between nursing staff turnover and quality of care. Many of the limitations of this dissertation research could be addressed in future studies by applying for use of the full data in the National Nursing Home Survey. This would allow researchers to access the raw data and to merge the data with other data sets that provide resident information (e.g., Online Survey, Certification and Reporting data), market characteristics (e.g., the Area Resource File), individual characteristics of NAs (e.g., the National Nursing Assistant Survey), and measures of quality (e.g., Nursing Home Compare). This type of research study would provide greater insight on the relative importance of various correlates of NA turnover and on the relationship between NA turnover and quality of care.

Consumers of long-term care desire expanded access to HCBS and AL and improvements in the quality of NH care. Although the current dissertation has its limitations, the findings do offer greater insight on the utilization of services along the continuum of care and the retention of direct care workers to improve the quality of care. Most importantly, the findings may contribute to improvements in the independence and well-being of older adults.

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Appendices

Appendix A: Action Letter

10-21-2008

RE: 08-70R1, entitled "Exploring Correlates of Turnover Among Nursing Assistants in the National Nursing Home Survey"

Dear April Temple,

I am pleased to inform you that your manuscript is now accepted for publication in Health Care Management Review. All manuscript materials will be forwarded to the production staff for placement in an upcoming issue, Volume 34, number 1. The next communications you will receive will be from the production staff regarding the article proofs.

Thank you for submitting your interesting and important work to HCMR.

Sincerely,

L. Michele Issel, PhD, RN
Editor-in-Chief
Health Care Management Review

April Temple

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Email: aslack@cas.usf.edu

EDUCATION

2004-2009   **Ph.D. in Aging Studies**
University of South Florida, Tampa, Florida
Co-Major Professors: Dr. Ross Andel and Dr. Debra Dobbs
Dissertation: *Factors Affecting the Utilization and Quality of Long-Term Care*

2001-2004   **B.S. in Gerontology, Minor in Business Administration**
University of South Florida, Tampa, Florida
Summa Cum Laude

RESEARCH INTERESTS

Medicare and Medicaid health policy; Utilization of long-term care services; Quality of care in long-term care; Nurse staffing and workforce development in nursing homes.

RESEARCH EXPERIENCE

Summer 2006   **Graduate Research Assistant**
Florida Policy Exchange Center on Aging, USF, Tampa, FL
Project Title: The Effect of Sociodemographic, Health, and Functional Characteristics on Utilization of Long-Term Care Options Among Older Medicare and Medicaid Beneficiaries
PI: Ross Andel, PhD
Explored the utility of alternatives to nursing home care among dually eligible beneficiaries.

2005-2006   **Graduate Research Assistant**
School of Aging Studies, USF, Tampa, FL
Project Title: Provider Response to Nurse Staffing in Florida Nursing Homes
PI: Kathryn Hyer, PhD
Conducted interviews with key stakeholders to review Florida's efforts to increase nurse staffing in nursing homes.

2005-2006	**Graduate Research Assistant**
	Florida Policy Exchange Center on Aging, USF, Tampa, FL
	Project Title: Florida's Dually Eligible Beneficiaries: Health
	and Functional Risk Factors for Nursing Home Placement
	PI: Ross Andel, PhD
	Identified risk factors for nursing home placement among
	dually eligible beneficiaries.

2004-2005	**Principal Investigator** (Health and Cost Outcomes Component)
	Florida Policy Exchange Center on Aging, USF, Tampa, FL
	Project Title: Affordable Assisted Living Evaluation
	PI: Jennifer R. Salmon, PhD
	Evaluated the health and cost outcomes of Medicaid waiver
	and Medicaid state plan funding of assisted living in Florida.

TEACHING COMPETENCIES

Introduction to Gerontology; Sociocultural Aspects of Aging; Long-Term Care Administration; Health Policy; Research Methods

TEACHING EXPERIENCE

2006-2009	**Instructor**
	School of Aging Studies, USF, Tampa, FL
	Courses: Introduction to Gerontology (GEY 2000)
	Sociocultural Aspects of Aging (GEY 3625)

2005-2009	**Graduate Teaching Assistant**
	School of Aging Studies, USF, Tampa, FL
	Courses: Psychology of Aging (GEY 4612)
	Long-Term Care Administration I (GEY 4327)
	Long-Term Care Administration II (GEY 4329)

2005-2007	**Guest Lecturer**
	School of Aging Studies, USF, Tampa, FL
	Courses: Psychology of Aging (GEY 4612)

PROFESSIONAL LICENSURES

| 2005-present | Nursing Home Administrator, Florida |

PROFESSIONAL EXPERIENCE

Summer 2007	**Intern**
	AARP Office of Policy Integration, Washington, DC
	Assisted with policy research on state health care reform
	and rebalancing Medicaid long-term care.

Summer 2004   **Administrator-in-Training**
                     Central Park Healthcare and Rehab Center, Brandon, FL
                     Learned state and federal nursing home regulations and
                     completed comprehensive rotations in all departments
                     for Nursing Home Administrator licensure.

JOURNAL PUBLICATIONS

Hyer, K., **Temple, A.**, & Johnson, C. (in press). Florida's efforts to improve
quality of nursing home care through nurse staffing mandates, regulation, and
Medicaid reimbursement. *Journal of Aging & Social Policy*

Temple, A., Dobbs, D., & Andel, R. (2009). Exploring correlates of turnover among
nursing assistants in the National Nursing Home Survey. *Health Care
Management Review*, *34*, 182-190.

Andel, R., Hyer, K., & **Slack, A.** (2007). Risk factors for nursing home placement in
older adults with and without dementia. *Journal of Aging and Health*, *19*, 213-
228.

MANUSCRIPTS IN PROGRESS

Temple, A., Andel, R., & Dobbs, D. (submitted). Setting of care modifies risk of nursing
home placement for older adults with dementia.

TECHNICAL REPORTS

Andel, R., **Slack, A.**, & Polivka, L. (2006). *The effect of sociodemographic, health, and
functional characteristics on utilization of long-term care options among older
Medicare and Medicaid beneficiaries*. Tampa, FL: Florida Policy Exchange
Center on Aging.

Slack, A., Salmon, J., Mitchell, G., Hinton, S., & Soberon-Ferrer, H. (2005). *Differential
benefits of Medicaid state plan or waiver funding of assisted living*. Tampa, FL:
Florida Policy Exchange Center on Aging.

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funding of affordable assisted living in Florida*. Tampa, FL: Florida Policy
Exchange Center on Aging.

CONFERENCE PRESENTATIONS

Temple, A., Andel, R., & Dobbs, D. (2009, March). Turnover of nursing assistants:
Results from the National Nursing Home Survey. Poster presented at the
annual meeting of the American Society on Aging, Las Vegas, NV.

Temple, A., Andel, R., & Dobbs, D. (2008, November). Turnover of nursing assistants: Results from the National Nursing Home Survey. Paper presented at the annual meeting of the Gerontological Society of America, National Harbor, MD.

Slack, A., Andel, R., & Dobbs, D. (2007, November). Assisted living moderates the association between dementia and risk of nursing home placement. Poster presented at the annual meeting of the Gerontological Society of America, San Francisco, CA.

Hyer, K., Johnson, C., Popa, M., & Slack, A. (2006, November). Financial incentives to increase staffing in Florida nursing homes: Who were the winners and losers? Paper presented at the annual meeting of the Gerontological Society of America, Dallas, TX.

Slack, A., Salmon, J.R., & Mitchell, G. (2006, November). Health and cost outcomes of affordable assisted living in Florida. Poster presented at the annual meeting of the Gerontological Society of America, Dallas, TX.

Salmon, J.R., Mills, W.L., & Slack, A. (2006, August). Florida affordable assisted living evaluation. Presented at the annual Florida Conference on Aging, Tampa, FL.

Slack, A., Andel, R., & Hyer, K. (2006, April). Differential risk factors for nursing home placement in older adults with and without dementia. Presented at the annual meeting of the Southern Gerontological Society, Lexington, KY.

Slack, A., Andel, R., & Hyer, K. (2006, April). Differential risk factors for nursing home placement in older adults with and without dementia. Presented at the annual Southeastern Regional Student Mentoring Conference in Gerontology and Geriatrics, Lexington, KY.

Slack, A., Salmon, J.R., & Mitchell, G. (2006, April). Health and cost outcomes of Medicaid funded assisted living. Presented at the University of South Florida Fifth Annual Graduate Research Symposium, Tampa, FL.

AWARDS AND HONORS

2009	Provost's Award for Outstanding Teaching by a Graduate Teaching Assistant, University of South Florida
2008	Presidential Management Fellow Nominee, University of South Florida
2007	Admission to Doctoral Candidacy with Distinction, University of South Florida
2007	PEO Scholar Award Nominee

| 2006 | Presentation Award Recipient |
| | Graduate Research Symposium, University of South Florida |

2006	Second Place Presentation Award
	Southeastern Regional Student Mentoring Conference in
	Gerontology and Geriatrics

| 2005 | University of South Florida Graduate Fellowship |

| 2004 | University of South Florida King O'Neal Scholar Award for 4.0 |
| | GPA |

| 2004 | University of South Florida Honors College Graduate |

PROFESSIONAL MEMBERSHIPS

2006-present	American College of Health Care Administrators
2005-present	Florida Council on Aging
2004-present	Gerontological Society of America
2004-present	Student Association for Aging Studies, University of South Florida
2002-2005	Sigma Phi Omega, National Gerontology Honor Society

About the Author

April Temple received her Bachelor's of Science degree in Gerontology from the University of South Florida in August 2004 and her state licensure as a Nursing Home Administrator in January 2005. She entered the Ph.D. in Aging Studies program in August 2004 with an interest in quality of nursing home care and long-term care policy.

While in the Ph.D. program, Ms. Temple was employed as a Graduate Research Assistant in the School of Aging Studies in which she assisted with health services research. In addition, she was employed as a Graduate Teaching Assistant in the School of Aging Studies where she taught undergraduate courses including Introduction to Gerontology and Sociocultural Aspects of Aging. Ms. Temple has co-authored three peer-reviewed publications and presented her research at multiple national conferences. Upon graduation with her doctorate, she will begin as Assistant Professor in Health Services Administration at James Madison University.