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Nursing home staff turnover and retention: An analysis of national level data

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Article

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The goals of this study are to provide national estimates of turnover and retention for registered nurses, licensed practical nurses, and certified nursing assistants in nursing homes, and to examine the associations between management tenure, organizational characteristics, local economic conditions, turnover, and retention. The 2004 National Nursing Home Survey is used as the primary source of data. The annualized turnover rate is found to be the highest among certified nursing assistants at 74.5%, followed by registered nurses at 56.1%, and licensed practical nurses at 51.0%. National retention rates reveal that between 62.5% and 67.3% of nurses have been employed at the same organization for more than one year. Director of nursing tenure, registered nurse hours per patient day, and certified nursing assistant hours per patient day show the most consistent associations to lower turnover and higher retention.

Nursing home staff turnover has been studied extensively in recent years. This interest has been stimulated by both the perceived negative association between turnover and quality and the cost burdens that turnover imposes in the form of excess hiring and training (Halbur & Fears, 1986; Harrington & Swan, 2003; Munroe, 1990; Spector & Takada, 1991; Zimmerman, Gruber-Baldini, Hebel, Sloane, & Magaziner, 2002). Prior research has identified organizational characteristics that are reliable predictors of turnover (Anderson, Corazzini, & McDaniel, 2004; Banaszak-Holl & Hines, 1996; Brannon, Zinn, Mor, & Davis, 2002; Castle & Engberg,

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2006). The most commonly cited predictors of turnover include staffing, top management turnover, and profit status; however, the effects of these variables on turnover vary by nurse type and local economic conditions (Castle & Engberg, 2006; Donoghue & Castle, 2006, 2007). Less attention has been devoted to a nursing home's proportion of nurses with long periods of continuous service, or its level of retention. This is surprising because retention is a separate indicator of staff stability that holds the same potential to influence quality and organizational spending on hiring and training. Nursing home staff retention may also represent a more achievable management goal for Nursing Home Administrators (NHAs) when industrial and economic conditions render staff turnover nearly impossible to control.

This study uses data from the 2004 National Nursing Home Survey (NNHS) to produce national estimates of both turnover and retention for nursing home staff. The effects of organizational characteristics and local economic factors on turnover and retention are also estimated for registered nurses (RNs), licensed practical nurses (LPNs) and certified nursing assistants (CNAs). Most of the existing research on nursing home staff turnover has been based on statewide and multistate samples. Few of these studies have examined staff retention (Castle, 2006; Tai, Bame, & Robinson, 1998). This research fills a gap in the nursing home literature because it is the first examination of both turnover and retention at the national level. The findings have implications for policymakers who seek to manage a diverse array of staffing challenges.

Turnover Versus Retention

Two literature reviews of turnover in nursing homes have revealed that researchers use a wide variety of turnover definitions (Castle, 2006; Tai et al., 1998). Tai et al.'s (1998) review found that in some cases, the proportion of "stayers" relative to "leavers" has been considered in the definition of turnover; in others, the period of time spent in employment has been used as a factor. Some researchers have measured turnover more conservatively by counting only voluntary turnover; whereas others have liberally counted both those that quit and also those that intend to quit (Tai et al., 1998). In a more recent review of turnover methodologies, Castle (2006) found that this trend has continued as some researchers have calculated the ratio of employees with less than one year of tenure versus the total number of staff; and others have compared the number of full-time hires versus the

number of full-time employees. Several studies in both reviews did not report their measurement methodologies at all. Nearly all of the authors of the studies in the two reviews described their work as measuring turnover, referring here to the proportion of an organization's staff that has terminated employment over a given period of time, yet many of the components of these definitions clearly measure other factors as well.

A small subsegment of the methodologies that have been used to measure turnover may be described as capturing retention, or including retention in the definition of turnover, by their inclusion of variables that measure the amount of time that workers have spent in employment (see Brennan & Moos, 1990; Hart & Moore, 1989; Ong, Rickles, Matthias, & Benjamin, 2002). Retention is different from turnover because it reflects not only an organization's record of stable employment, but also its propensity to groom a staff with a longer mean employment duration in the same facility. The distinction between turnover and retention is most apparent when considering the amount of time that an organization's "stayers" (or those who have not been terminated either voluntarily or involuntarily) have spent in employment. For example, consider the case of two nursing homes with the same number of staff and the same turnover rate, measured in the following manner:

Turnover = Terminations in a one year period/Total number of staff

If the turnover rate for both facilities is 40%, we can conclude that 40% of both staffs have either been eliminated or replaced by new employees; however, if in the first nursing home, the average amount of time that the stayers have spent in employment is 6 months, and in the second facility, the mean is 3 months, then we can deduce that the staff in the first facility is comprised of workers who have gained more experience in their current roles than that of the second facility. This sort of worker stability, conceptualized in this study as a measure of retention, may provide NHAs with a reliable cadre of experienced staff that can aide management in its efforts to maintain standards of quality even when turnover levels are undesirably high.

Predicting Turnover and Retention

A scarce amount of national estimates of nursing home staff turnover exist in the literature, and none for staff retention. The first two of these national turnover studies were conducted by the American Health Care

Association (AHCA) in 2001 and 2003 (Decker et al., 2002, 2003). In 2001, the AHCA estimated annual turnover among CNAs at 78.1%, RNs at 56.2%, and LPNs at 53.6% on an annualized basis. In 2003, the AHCA estimated CNA turnover at 71.1% and both RNs and LPNs at 48.9%. Both of these studies were based on national samples of more than 6,000 nursing homes, but the response rates were only 42.2% in 2001 and 37.7% in 2003. More recently, Castle (2008) used self-reported turnover data from three major nursing home surveys conducted between 2005 and 2006 to estimate turnover at 64.2% among CNAs, 46.3% among RNs, and 43.1% among LPNs. The response rate for these surveys varied between 65% and 75%.

Most other estimates of nursing home staff turnover have been derived from single or multistate regional samples and have used many different measurement methodologies. According to Castle (2006), this dissonance has resulted in a wide range of turnover estimates that varies in the literature by as much as 322% among nurse aides (NAs); 95% among LPNs, and 45% among RNs. The variance in the estimates grows smaller with the rise in professionalism (NA to LPN to RN), as does the level of turnover for each of the three nursing positions according to the estimates of most regional-level studies. In the first two national estimates, the largest difference in turnover by professionalism is seen between the CNAs and other nurses. RNs and LPNs have similar rates in both surveys. Most regional-level studies have found that RNs turn over less than LPNs (Castle & Engberg, 2006; Donoghue & Castle, 2006, 2007). The only existing estimates of staff retention are also specific to particular regions. Brennan and Moos (1990) found that 46% of nurses held their positions for less than one year. Ong et al. (2002) estimated that 40% of nurses were employed for more than one year in a sample of California nursing homes.

Staff turnover in the nursing home industry is often attributed to a burdensome workload. In a study of California nursing homes, Harrington and Swan (2003) found that total nursing hours per patient day was negatively associated with staff turnover. In a more recent study of Texas nursing homes, Kash, Castle, Naufal, and Hawes (2006) found that higher nurse-to-patient ratios were associated with lower turnover among all nurse types. In other studies that have examined the effects of staffing ratios for specific nurse types, differences have been observed in the associations with turnover. These studies have generally found that higher RN and LPN staffing levels are associated with higher turnover, but that higher CNA staffing levels are associated with lower turnover (Castle & Engberg, 2006; Donoghue & Castle, 2006, 2007). In Anderson et al.'s (2004) study, the authors hypothesized that the association between high RN staffing and

high RN turnover may be a spurious correlation stemming from the inclusion of facilities with high acuity in the sample. The link between high CNA staffing and lower turnover may be explained by the reality that CNAs perform most of the direct patient care. Thus, when a nursing home employs an ample number of CNAs, all nurses experience decreased burden. Nevertheless, Castle, Engberg, Anderson, and Men (2007) found that a burdensome work schedule was a key predictor of low job satisfaction among CNAs, and that low job satisfaction predicted intent to leave and actual turnover. For these reasons, it is expected that higher CNA staffing levels and more CNA overtime shifts will be associated with lower turnover and higher retention, but that higher RN and LPN staffing levels and overtime shifts will be unrelated to turnover or retention. RNs may share more of the labor burden when they are required to provide more bedside care. Therefore, it is also expected that facilities with more RNs solely devoted to bedside care will experience higher RN turnover and lower RN retention, but lower LPN and CNA turnover and higher LPN and CNA retention.

Many prior turnover studies have examined the effects of turnover and tenure among Directors of Nursing (DON) and NHAs on nursing home staff. Top management turnover may influence nurse turnover by creating a perception of instability in the work environment. New managers may also be more inclined to terminate nurses they inherit on their staffs to implement policy changes or new management philosophies. Alternatively, turnover among top managers and nurses may occur together when nursing home owners enact more sweeping changes in their organizations. Donoghue and Castle (2007) found evidence of this in a positive association between NHA turnover and both RN and CNA turnover. Castle (2005) also found that a combined measure of DON turnover and NHA turnover was positively associated with nursing staff turnover. Using tenure as a measure of management stability, Anderson et al. (2004) found that turnover is lower among RNs and LPNs when DONs have been on the job for a longer period of time. In the current study, the effects of both NHA and DON tenure are tested on turnover and retention among all nurse types. It is expected that DON tenure will be more closely associated to lower turnover and higher retention among nurses than NHA tenure because DONs work more closely with the nursing staff, and may potentially provide a stronger sense of management stability.

In addition to job burden and management stability, other organizational factors influence job satisfaction among nurses as well. Castle et al. (2007) found that NAs are less likely to think about leaving, think about a job

search, conduct a job search, and turn over when they are satisfied with the job's rewards (defined as wages and opportunities for advancement). In the current study, nurse wages are tested for their effects on tenure and retention. Prior organizational level studies have not used wages to predict turnover, but many studies have found that for-profit nursing homes have higher turnover (Banaszak-Holl & Hines, 1986; Castle & Engberg, 2006, Donoghue & Castle, 2006; Harrington & Swan, 2003; Kash et al., 2006). This is significant because for-profit facilities tend to maintain lower nurse staffing levels with higher nurse wages.

Prior research has emphasized the need to examine these organizational factors within the context of local economic conditions (Abelson & Baysinger, 1984). Harrington and Swan (2003) found that regions in California with higher income and higher unemployment are both associated with lower nursing home staff turnover. Using data from multiple states, Donoghue and Castle (2007) also found that higher unemployment and a rural location was linked to lower turnover. Therefore, it is expected that higher income and higher unemployment will both be associated with lower turnover and higher retention.

Method

Source of Data

The 2004 NNHS was used as the primary source of data for this study. The NNHS is a semiannual national survey of nursing homes, current patients, and discharged patients that has been conducted seven times since 1973. The most recent NNHS was conducted between August and December of 2004. The public-use version was made available to the public in August 2006. Because this study required the use of some microdata, special approval was obtained from the National Center for Health Statistics (NCHS).

The full sample of nursing homes was drawn from a universe of 16,628 American nursing homes obtained by the NCHS from the Centers for Medicare and Medicaid Services and a separately compiled state licensing list. This list was stratified by bed certification status, hospital- and nonhospital-based status, ownership, geographic region, state, county, and zip code. A sample of 1,500 nursing homes was then selected in proportion to bed size, using a systematic sampling method. Participation was obtained from 1,174 nursing homes resulting in a response rate of 81%. Those not participating included 283 that refused and 43 that did not meet the scope

of the survey. Reasons for not meeting the scope included going out of business and duplication.

Dependent Variables

Retention is defined as the percentage of full time equivalent (FTE) nurses employed for more than one year. It is measured separately for RNs, LPNs, and CNAs. Turnover is measured as a function of the following equation:

(Number of FTE nurses that quit in the last 3 months)/(Number of FTE nurses that worked last week) = (Vacant positions)

FTE was defined as full-time nurses plus one half of part-time nurses, or in some cases all FTEs, depending on the nursing home's reporting method. This definition of turnover is identical to that used by Decker et al. (2002, 2003), but for 3 months instead of 6. The 3 month time period used by the NNHS enhances reliability because longer timeframes have been found less accurate in prior research (Castle, 2006), but it also produces a highly skewed distribution because of the increased likelihood of facilities reporting zero terminations. In prior studies, skewed turnover distributions have been paired into high and low turnover groups (Brannon et al., 2002, Castle & Engberg, 2006; Donoghue & Castle, 2006). This study applies the same methodology by separating the facilities at the median into categories of high and low turnover by nurse type.

Independent Variables

Several staffing variables are used to predict turnover and retention. Hours per patient day is calculated for RNs, LPNs and CNAs using the following formula:

(Hours per patient day) = (((FTE × 35 hours)/7 days)/(number of patients))

Overtime is counted as the number of shifts worked in the past week for each nurse type. Tenure among DONs and NHAs is measured as the total number of months spent in the current occupational position at the same facility. Wages represent the current starting hourly pay for each nurse type. The total number of RN FTEs at bedside represents those solely devoted to bedside care.

Facilities are further classified by several organizational characteristics, including proprietary status (for-profit or nonprofit), membership in a

chain, and number of beds (bed size). Occupancy is defined as the number of patients divided by the number of beds available for use. All of these variables have been used in prior nursing home staff turnover research. Local economic conditions were gathered from the Area Resource File (2005). This secondary source of data provided per capita income, the total number of nursing homes in the county as a measure of competition (made zero if none), and the county unemployment rate.

Analysis Strategy

The descriptive data in Table 1 include national estimates for turnover and retention derived from the statistical weights for facility size provided by the NCHS. Logistic regression analysis was used to predict the likelihood of high turnover (relative to low turnover) for all nurse types, using staffing variables, organizational characteristics, and local economic conditions as independent variables. Ordinary least squares regression analysis was used to predict retention levels for all nurse types using the same sets of variables. Both sets of analyses were conducted with the statistical weights for facility size applied. In a separate analysis (not shown), the same models were tested without the statistical weights applied. No important differences were observed in the variable effects.

Results

The descriptive data for the sample and the national estimates for turnover and retention appear in Table 1. When annualized, the national estimates of turnover are 56.1% for RNs, 51.0% for LPNs, and 74.5% for CNAs. These figures are most comparable to the two national estimates made by the AHCA because the exact same turnover methodology was used (Decker et al., 2002, 2003). The current turnover estimates are similar to those previous estimates, but slightly higher. The current estimates are also higher than those made by Castle (2008), which are based on self-reporting. All of these national estimates, including those reported here, follow a ranking pattern that is different from nearly all of the existing regional studies, which have found that CNAs rank highest in turnover, followed by LPNs and then RNs. Alternatively, the above mentioned national estimates have found that CNAs rank highest in turnover followed by RNs and then LPNs.

The national estimates for nurse retention show that 68.4% of LPNs were employed in the same facility for more than one year, followed by

Table 1
Descriptive Statistics (*N* = 1,174)

	Sample		National Estimate	
	M (or %)	SD	*M* (or %)	SD
Staff turnover				
RN turnover	13.8%	31.3	14.0%	31.3
(last 3 months)				
LPN turnover	12.4%	19.8	12.7%	19.9
(last 3 months)				
NA turnover	18.8%	28.2	18.6%	29.4
(last 3 months)				
Total turnover	44.9%	57.4	45.3%	58.1
(last 3 months)				
Staff retention and management tenure				
% of RNs employed	68.0%	31.8	67.3%	31.8
for more than one year				
% of LPNs employed	69.0%	26.5	68.4%	26.8
for more than one year				
% of CNAs employed	62.7%	21.3	62.5%	21.5
for more than one year				
Number of months	43.13	58.27		
DON employed				
Number of months	64.98	81.22		
NHA employed				
Staffing characteristics				
RN hours per patient day	.52	.58		
LPN hours per patient day	.79	.73		
CNA hours per patient day	2.51	1.92		
RN hours solely bedside	.30	.55		
per patient day				
RN overtime shifts	1.70	4.29		
in the last week				
LPN overtime shifts	4.07	8.49		
in the last week				
CNA overtime shifts	9.71	19.10		
in the last week				
RN hourly starting	$19.75	3.55		
wages (hourly)				
LPN hourly starting wages	$15.15	3.00		
CNA hourly starting wages	$8.72	1.68		
Organizational characteristics				
Bed size	110.67	90.04		
For-profit	60.2%			

Table 1 (continued)

	Sample		National Estimate	
	M (or %)	SD	*M* (or %)	SD
Chain membership	52.5%			
Average occupancy	85.8%	13.97		
Medicaid census	62.0%	23.85		
Local economic conditions				
Per capita income	$30,286.64	8,511.44		
Nursing homes in the county	28.20	64.41		
Unemployment rate	5.79	2.09		

Note: RN = Registered Nurse; LPN = Licensed Practical Nurse; NA = Nurse Aid; DON = Director of Nursing; NHA = Nursing Home Administrator.

RNs at 67.3% and CNAs at 62.5%. These percentages are higher than the two previous estimates of total nurse retention found in two prior studies that used regional samples (Brennan & Moos, 1990; Ong et al., 2002). The DONs averaged 43.13 months of tenure, nearly 2 years less than the NHAs, who averaged 64.98 months.

CNAs perform 2.51 hours of work per patient day, nearly 5 times as many as RNs, who work .51 hours per patient day; LPNs work .72 hours per patient day. RNs solely devoted to bedside care work less than one third of an hour (.30) per patient day. Most overtime shifts are worked by CNAs, who average $8.72 per hour in wages at the inception of employment. The average hourly starting wages are $15.15 for LPNs and $19.75 for RNs. The organizational characteristics of the sample are similar to the national estimates in the 2004 NNHS.

Table 2 displays the weighted odds ratio estimates for the probability of high turnover among RNs, LPNs, and CNAs. Table 3 displays the weighted ordinary least squares regression coefficients for the percentages of nurses employed for one year or more. DON tenure is associated with a lower probability of high turnover among all RNs and CNAs and also a higher level of retention for all nurses. RN hours per patient day are associated with a lower probability of high LPN and CNA turnover, and also higher retention among RNs and CNAs. CNA hours per patient day are associated with a lower probability of high turnover among LPNs and CNAs, but are not linked to retention. Neither overtime shifts nor RN hours per patient day solely devoted to bedside care show patterned relationships to turnover or retention. Retention is higher among RNs and LPNs in facilities with

Table 2

Weighted Odds Ratio Estimates for the Effects of Staffing Characteristics, Organizational Characteristics, and Local Economic Conditions on the Likelihood of High Turnover

	High RN Turnover	High LPN Turnover	High CNA Turnover
Management tenure			
Number of months DON employed	.99*** (.99 to 1.00)	.99 (.99 to 1.00)	.99* (.99 to 1.00)
Number of months NHA employed	1.00 (.99 to 1.00)	.99 (.99 to 1.00)	.99 (.99 to 1.00)
Staffing characteristics			
RN hours per patient day	1.08 (.67 to 1.74)	.57* (.33 to .97)	.52* (.28 to .93)
LPN hours per patient day	1.13 (.81 to 1.58)	.94 (.62 to 1.44)	1.03 (.69 to 1.53)
CNA hours per patient day	.98 (.85 to 1.13)	.81* (.67 to .98)	.59*** (.48 to .72)
RN hours solely bedside per patient day	1.13 (.80 to 1.60)	.68 (.43 to 1.08)	.98 (.54 to 1.79)
RN overtime shifts in the last week	1.02 (.97 to 1.08)	.99 (.96 to 1.04)	.98 (.93 to 1.02)
LPN overtime shifts in the last week	.97* (.95 to .99)	1.01 (.98 to 1.04)	1.02 (.99 to 1.05)
CNA overtime shifts in the last week	1.01 (.99 to 1.02)	.99 (.98 to 1.01)	1.00 (.99 to 1.01)
RN hourly starting wages	1.00 (.94 to 1.07)	.94 (.88 to 1.00)	.97 (.90 to 1.04)
LPN hourly starting wages	.98 (.89 to 1.08)	1.16** (1.08 to 1.28)	.99 (.90 to 1.11)
CNA hourly starting wages	1.10 (.95 to 1.26)	.92 (.80 to 1.06)	.95 (.83 to 1.10)
Organizational characteristics			
Bed size	1.01* (1.00 to 1.01)	1.00** (1.00 to 1.01)	1.00 (.99 to 1.00)
For-profit	.90 (.64 to 1.28)	1.07 (.75 to 1.52)	1.37 (.95 to 1.97)
Chain membership	1.34 (.980 to 1.84)	.98 (.70 to 1.4)	1.11 (.79 to 1.57)
Average occupancy	.90 (.290 to 2.780)	.35 (.11 to 1.12)	.65 (.21 to 2.01)
Medicaid census	.53 (.27 to 1.07)	.72 (.35 to 1.48)	.69 (.32 to 1.49)
Local economic conditions			
Per capita income (in thousands)	1.00 (1.00 to 1.00)	1.00 (1.00 to 1.00)	.99*** (.99 to 1.00)
Nursing homes in the county	.99 (.99 to 1.00)	.99 (.99 to 1.00)	1.00 (.99 to 1.00)
Unemployment rate	1.06 (.99 to 1.14)	1.01 (.94 to 1.08)	.92* (.85 to .99)
Observations	948	946	946
Log likelihood	17,889.88	17,869.36	17,886.85
Pseudo-R^2	.10	.12	.19

Note: RN = Registered Nurse; LPN = Licensed Practical Nurse; CNA = Nurse Aid; DON = Director of Nursing; NHA = Nursing Home Administrator. Standard errors in parentheses.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3
Weighted Ordinary Least Squares Regression Coefficients for the Effects of Staffing Characteristics, Organizational Characteristics, and Local Economic Conditions on Retention

	% of RNs > 1 year of employment	% of LPNs > 1 year of employment	% of CNAs > 1 year of employment
Management tenure			
Number of months DON employed	0.12*** (0.02)	0.09*** (0.02)	0.06*** (0.01)
Number of months NHA employed	0.02 (0.01)	−0.01 (0.02)	0.01 (0.01)
Staffing characteristics			
RN hours per patient day	7.41** (2.57)	2.86 (2.48)	8.20** (2.67)
LPN hours per patient day	−0.77 (2.14)	−2.02 (2.03)	−3.92* (1.69)
CNA hours per patient day	0.11 (0.82)	1.14 (0.71)	0.91 (0.78)
RN hours solely bedside per patient day	−0.99 (1.95)	0.72 (2.06)	−4.57 (2.43)
RN overtime shifts in the last week	0.33 (0.22)	0.12 (0.21)	0.09 (0.20)
LPN overtime shifts in the last week	−0.35* (0.16)	−0.20 (0.13)	−0.21* (0.09)
CNA overtime shifts in the last week	0.04 (0.07)	0.00 (0.05)	−0.02 (0.04)
RN hourly starting wages (hourly)	−0.35 (0.48)	0.67 (0.42)	0.33 (0.31)
LPN hourly starting wages	−0.96 (0.62)	−2.08*** (0.58)	−0.66 (0.44)
CNA hourly starting wages	2.88** (0.95)	2.22** (0.81)	1.05 (0.72)
Organizational characteristics			
Bed size	−.00 (.01)	−.01 (.01)	.01 (.01)
For-profit	−1.96 (2.35)	−1.49 (2.14)	−4.34** (1.65)
Chain membership	−5.83 (2.33)	−3.03 (2.06)	−.47 (1.63)
Average occupancy	26.6** (8.03)	2.32* (7.89)	14.31* (6.46)
Medicaid census	−.11 (4.91)	2.61 (4.72)	2.82 (3.50)
Local economic conditions			
Per capita income (in thousands)	.02 (.17)	.23 (.17)	.26 (.13)
Nursing homes in the county	.02 (.02)	−.02 (.02)	.01 (.02)
Unemployment rate	.60 (.51)	.40 (.43)	.97** (.34)
Observations	949	942	922
Adjusted R^2	.16	.09	.14

Note: RN = Registered Nurse; LPN = Licensed Practical Nurse; CNA = Nurse Aid; DON = Director of Nursing; NHA = Nursing Home Administrator. Standard errors in parentheses.
*$p < .05$. **$p < .01$. ***$p < .001$.

higher CNA wages. Higher LPN wages are unexpectedly linked to both higher LPN turnover and lower LPN retention.

Bed size is the only organizational characteristic associated with a higher probability of high turnover. Higher occupancy is positively correlated with higher retention for all nurses. CNAs are the only nurses found to have employment patterns related to a nursing home's profit status or local economic circumstances. For-profit facilities have lower CNA retention. Facilities in areas with higher per capita income and higher unemployment are found to have a lower probability of high turnover and also higher retention.

Discussion

The findings of this analysis have broad implications for NHAs who can implement policies to improve turnover and retention; owners of nursing homes and nursing home chains who have the power to make decisions regarding the profit status, bed size, and occupancy rates of their facilities; state legislators who are capable of mandating labor standards for hours and overtime; Medicare and Medicaid policymakers who can revise standards for nursing home deficiency citations; and industry professionals who can recommend best nursing home practices. Previous nursing home studies that targeted particular geographic regions have identified organizational characteristics and local economic conditions that are related to turnover. The findings of the current study indicate that management tenure and staffing characteristics tend to be more important in predicting both turnover and retention at the national level. This is not surprising because regional conditions, particularly those related to statewide regulations, can greatly influence the specific character of for-profit homes, chains, and facilities with a higher Medicaid Census in certain areas. For example, the Medicaid census of nursing homes in a state with a Construction Moratorium or a strict Certificate of Need Program may vary from that of a state without these restrictions. As a result, the Medicaid census may be an important indicator of staff turnover in some states but not others.

As expected, management tenure is an important indicator of turnover and retention. DON tenure was related to nearly all of the dependent variables for lower turnover and higher retention, but NHA tenure was found to be insignificant. Anderson et al. (2004) also found support for the negative association between DON tenure and staff turnover. Donoghue and Castle (2007) previously identified NHA turnover as an indicator of

staff turnover, but NHA tenure has not previously been tested. NHA turnover may be especially related to staff turnover in times of management overhauls and labor downsizing. Because NHAs tend to have longer tenure than DONs, the impact of NHA turnover may also be more devastating to a staff of nurses than that of a DON. The current study provides a more evidence based rationale, however, for strategies aimed at maintaining longer periods of employment for DONs.

Facilities that provide more nursing hours per patient day alleviate some of the burdens placed on their staff by a large clientele. Nationally, nursing home occupancy is about 86.3% on average (NCHS, 2004), and facilities with more beds are found in this study to have higher levels of turnover for all nurse types. Thus, the provision of more nursing hours per patient day may be as important to nurses as it is to patients. Research has found that patients enjoy a higher quality of care when staffing levels are higher (Harrington & Swan, 2003) and that nurses are less likely to think about leaving, think about a job search, conduct a job search, and turn over when staffing levels are higher (Castle et al. 2007).

Certain staffing variables are also found to be closely related to turnover and retention. Nursing homes with higher RN hours per patient day are less likely to have high LPN and CNA turnover, although RN hours per patient day are not related to RN turnover. Thus, lower LPN and CNA turnover may be explained by the higher level of support and supervision that a more abundantly staffed team of RNs can provide. LPNs and CNAs may also experience lower turnover because their burdens are reduced when RNs are more readily available to provide necessary treatments for patients with urgent needs. Although higher RN hours per patient day are not associated with lower RN turnover, they are associated with higher rates of one-year RN retention. These associations may be the result of longer term organizational commitment among RNs who work in facilities that afford higher levels of RN staffing, even if RN turnover does not vary under the same conditions. In addition, stability among the RN labor force may induce improved commitment among lower level nurses, because RN retention is positively associated to CNA retention.

CNA hours per patient day are associated with lower turnover among LPNs and CNAs, but unlike RN hours per patient day, they are not related to retention. Lower turnover for all nurse types has been linked to higher CNA hours per patient day in previous research. These studies have concluded that higher CNA hours per patient day are important in alleviating the caregiving burden because CNAs provide the most direct care (Castle & Engberg, 2006; Donoghue & Castle, 2007). Because higher CNA hours

per patient day are not associated with the additional benefit of higher retention, like that of higher RN hours, it appears that the tendency for nurses to maintain longer commitments is more closely related to retention among higher level nurses.

No support can be found in this study, however, for labor strategies that would specifically target LPNs in an effort to improve turnover or retention. Nationally, LPNs have the lowest rate of turnover among the three nurse types and also the highest level of retention. LPN turnover and retention conditions tend to worsen when LPN starting hourly wages are higher. As previously shown, greater RN hours per patient day are associated with a decreased likelihood of high turnover among LPNs, but higher LPN hours per patient day are not negatively associated to turnover or positively associated to retention. In fact, CNAs have lower retention in facilities with higher LPN hours per patient day. CNAs also have lower retention when LPNs work more overtime shifts. The only indication of benefit from higher LPN hours is in the lower likelihood of RN turnover in facilities where LPNs work more overtime shifts. The weight of this evidence does not suggest that LPNs fail to make an important contribution to nursing home care, but instead, that nursing homes may be wasting valuable resources in efforts designed to lower turnover or increase retention among LPNs, who already turn over the least and are the most likely nurse type to have worked for at least one year in the same facility. Nevertheless, some facilities may be intentionally seeking to induce higher commitment among LPNs in keeping with a management strategy that relies more heavily on LPN care. By extension, the managers of these facilities may actually be less inclined to seek lower turnover or higher retention among CNAs.

Finally, the evidence here suggests that nationally, CNAs are the only one of the three nurse types whose turnover or retention rates are significantly related to a nursing home's profit status or its local economic environment. CNAs in for-profit homes have significantly lower retention rates, and as a whole, both the turnover and retention rates for CNAs are better in areas with higher per capita incomes and higher unemployment. These findings are consistent with those of Castle et al. (2007), who showed that CNAs are less likely to think about a job search when they work for nonprofits and when the unemployment rate is high. In areas with a higher per capita income and a higher unemployment rate, CNAs may be less likely to terminate their own positions because they are paid better and also because they fear they will have difficulty finding a new job.

Limitations to the Findings

Despite the important policy implications of this study, some limitations are evident. The cross-sectional design of the NNHS means that causality cannot be assumed from statistically significant correlations. Missing data is also a problem because turnover and retention rates are derived from multiple questionnaire items. Facilities with missing data on any of the relevant variables in the analysis were excluded. The turnover rates may also be conservative and/or affected by seasonal fluctuations because they reflect only a 3-month time period. The benefit of the short time frame is in the potential for higher data reliability, both because the information may be more readily available and because staff members filling out the survey may not have been employed with the organization during the entire period of longer time frames (Castle, 2006).

Conclusion

Lower staff turnover and higher staff retention are both important goals for nursing homes. Facilities with lower turnover are more capable of staffing their nursing positions to meet the needs of their patients because they can depend on a more reliable workforce. Nursing homes with lower turnover have been found to provide a higher quality of care, and this is likely to be the result of cost savings that arise from less frequent hiring and training. Retaining a nursing home staff over an extended period of time is also beneficial because of the organization-specific experience that it can foster among nurses, and its potential to build morale among nurses who form relationships with their fellow employees and the patients that they serve. NHAs may also have more success in accomplishing their organizational goals when their staffs have longer institutional memories and experiences.

DON tenure and higher RN and CNA staffing are the variables that showed the most consistent relationships with lower turnover and higher retention. LPNs turn over the least among the three nurse types and neither higher LPN staffing nor LPN overtime has beneficial effects on turnover or retention. This study found national turnover rates to be lower than most previous regional estimates, and organizational characteristics are found to play a subordinate role to staffing conditions and management tenure in predicting turnover and retention than earlier studies have indicated.

Longitudinal panel research is needed to more closely detect the impact of changes in staffing, management tenure, organizational characteristics, and economic conditions on turnover and retention. The profit status and

chain membership of a nursing home may be unlikely to change, but other operating conditions are apt to fluctuate. For example, some evidence in this study suggests that staffing characteristics for one nurse type influence turnover or retention for another nurse type. In addition, it is likely that turnover affects retention across nurse types, and vice versa. Measuring these associations over time would yield better information on the consistency of those associations. Hazard models for sharp turnover increases or rapid reductions in retention may reveal the changes in institutions and the local economic environment that are most likely to induce labor instability. Surveys of nurses who recently terminated may also be instructive to policy makers attempting to lower turnover and increase rates of retention.

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