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Nursing Home Nurse Turnover and the Association to Workload, Absenteeism, and Number of Beds

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Abstract

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MS, Purdue University Global, 2016

BS, Azusa Pacific University, 2013

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

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Abstract

The aging population in the United States has resulted in an increased need for quality nursing home care, which includes a stable nursing staff and reduced workforce instability. The purpose of this quantitative correlational study was to examine the relationship between direct care nursing staff turnover rates for RNs, licensed vocational nurses (LVNs), and certified nursing assistants (CNAs) concerning workload, absenteeism, and number of beds in Texas nursing homes. The relational coordination theory provided the theoretical framework for understanding the underlying issues and communication needs that may relate to staff turnover. Secondary data from 11,336 direct resident care nursing staff RNs, LVNs, and CNAs from 439 nursing homes were obtained from the 2017 Long Term Care Nurse Staffing Study survey for 2017 by the Texas Center for Nursing Workforce Studies. Results of multiple linear regression analysis indicated a significant relationship between RN turnover, absenteeism, and number of beds. The regression analysis also indicated a significant relationship between LVN and CNA turnover and number of beds. These results demonstrated that absenteeism and number of beds were significant predictors of nursing staff turnover. Results may be used by nursing home administrators to decrease nursing staff turnover and improve quality of care in nursing homes leading to positive social change.

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Dedication

This doctoral study is dedicated to the Gracieux family: my mother Nancy, father Manuel, and two brothers Joshua and Jacob. From the first day of preschool to this triumphant moment, you all have been in my corner. We are our family's first generation doctoral graduate. To my mother, whom I would drop off at the bus station when I had no car to get to school, I will never forget. To my parents for pulling out cash advance loans and borrowing from friends to pay for my education when money was regularly short, I will never forget. For the countless miles and time you dedicated to make sure I was given the right opportunities you didn't have, I will never forget. Thank you for your unyielding love and support throughout my academic years, encouraging me to push through the physical, mental, and spiritual battles as I was tried and tested along the way. The incalculable number of times I contemplated putting the pen down, you all were my light in the darkest of days, reassuring me "remember why you started." I was reminded, even at a very young age, that my writing would take me places, and so it did because of all of you. This degree is a testament to the sacrifices we all have made, starting in the small two-bedroom home where I initially discovered my passion for writing as a child. To rising above the walls of hardships that would lead us to this milestone, I wouldn't trade any of it for the world. My academic degrees, bachelor's, master's, and doctorate, were earned and hardfought for by me for all of you. Our family generations that follow will read this section and study one day and see that the love of family is such a blessing and it possesses the power to take them places unimaginable and that we did this for them. I love all of you. Our journey continues…May God speed.

Table of Contents

i

List of Tables

List of Figures

Section 1: Foundation of the Study and Literature Review

As Americans age and live longer, increasing numbers will live with multiple chronic conditions such as diabetes, dementia, and functional impairments, which may include difficulty with activities of daily living, toileting, bathing, self-feeding, and managing their household (Landers et al., 2016). Many older people will remain independent and have few care needs while others will require nursing home care for short-term rehabilitation or long-term care due to debilitating chronic illnesses and dementia. Nursing home residents compose a diverse population representing a broad range of health conditions (Abbott et al., 2018).

Nursing home residents expect and require quality care across the care continuum, and one of the most important structural elements associated with quality is a facility that is adequately staffed with an experienced nursing team (Miller et al., 2019). Adequate staffing encourages care coordination that includes formal communication between the resident's family and caregivers and informal communication between staff members (Miller et al., 2019). The nursing team, composed of RNs, licensed vocational nurses (LVNs), and certified nursing assistants (CNAs), provides direct patient care; however, staffing shortages and the frequency of nurse turnover may have a negative effect on quality of care (Gillet et al., 2018).

Problem

Nursing staff turnover is a serious problem for all health care organizations and can affect financial growth, patient care, and reputation (J. G. Smith, 2018). Nursing home administrators are concerned that nurse turnover could increase training costs,

decrease staff morale, and have an undesirable impact on resident satisfaction (Chamberlain et al., 2017). The results of the current study may update nursing home administrators' knowledge regarding the causes and reasons for nurse turnover and provide actionable plans to improve retention (see Phillips et al., 2018). Researchers have reported that low pay, lack of communication, and inappropriate RN, LVN, and CNA resident ratios affect turnover and impact quality outcomes (Plaku-Alakbarova et al., 2018; Rombaut & Guerry, 2018).

Bodenheimer and Sinsky (2014) identified that intent to leave and actual turnover of nurses has a negative impact on the structural integrity of resident-centered care plans in nursing homes. Mission, leadership, business model, and reputation provide the adhesive strength and quality that binds nursing home organizations together, and the opposite is evident when there are shortages of RNs, LVNs, and CNAs resulting in decreased employee satisfaction (American Health Care Administration [AHCA], 2014; Perry et al., 2018; Weech-Maldonado et al., 2019). McCay et al. (2018) stated there is an increasing demand placed on managers and nursing home leaders to safeguard the health and safety of nursing staff and patients by ensuring a stable workforce. Many researchers have studied nursing staff retention in nursing homes, but few researchers have discussed causes of turnover concerning the influence of workload, absenteeism, and number of beds and their association to staff turnover of RNs, LVNs, and CNAs. The current study addressed this literature gap (see Berridge et al., 2016; Ferguson, 2018; Hofler & Thomas, 2016).

Purpose of the Study

The purpose of this quantitative correlational study was to examine the association, if any, between nurse turnover rates and workload, absenteeism, and number of nursing home beds in Texas nursing homes. Data from all nursing homes in the 254 counties in Texas who completed the Long-Term Care Nurse Staffing Study (LTCNSS) survey for 2017 were considered for this study. Researchers have demonstrated that improving retention of nursing staff may have a direct effect on job satisfaction for employees and residents (Blouin & Podjasek, 2019; Dempsey & Reiley, 2016; Dickerson & Latina, 2017; Shin & Hyun, 2015).

Negative consequences associated with staff turnover are increased hospital readmission rates, employee replacement costs, decreased quality of care, and increased resident and family dissatisfaction (Mansukhani et al., 2015). Frequent turnover of nursing home staff could result in an increase in new, inexperienced staff and an overworked nursing team required to fill vacant shifts (Mukamel et al., 2009).

The current study focused on the variables of workload, absenteeism, and facility bed count to determine whether there was a correlation to turnover of RNs, LVNs, and CNAs in Texas nursing homes. Results of this study may inform nursing home administrators about turnover precursors and the opportunities to make policy changes that improve working conditions and reduce turnover. The dependent variable was nursing home nurse turnover among RNs, LVNs, and CNAs. The independent variables were workload, absenteeism, and number of beds.

Research Questions and Hypotheses

Research Question 1: What is the association, if any, between RN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

$H_0$1: There is no association between RN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a1: There is an association between RN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Research Question 2: What is the association, if any, between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

$H_0$2: There is no association between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a2: There is an association between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Research Question 3: What is the association, if any, between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

$H_0$3: There is no association between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a3: There is an association between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Theoretical Foundation for the Study

The theoretical foundation for this study was the relational coordination (RC) theory, which was developed in 1995 (see Gittell, 1995; Osanloo & Grant, 2016). The RC theory focuses on coordination of care through communication and teamwork and was appropriate for the current study due to the variable relationships, which consisted of the dependent variable nursing home nurse turnover and the independent variables of workload, absenteeism, and number of beds. Coordination of care improves staff satisfaction, which may decrease turnover and improve retention (Gittell, 1995). Five examples of how the RC theory can be applied to nursing turnover and retention in nursing homes include the following: (a) communication and relational coordination with work processes; (b) communication and relational coordination of shared goals, shared knowledge, and mutual respect; (c) communication and relational coordination between work roles rather than between individual participants; (d) communication and relational coordination based on the quality and efficiency of outcomes; and (e) communication and relational coordination of organizational structures designed to support rather than impede workgroups (Gittell, 2015; Gittell, Seidner, & Wimbush, 2007; see Figure 1).

Figure 1

Dimensions of Relational Coordination

Communication Ties — Frequent, Timely, Accurate, Problem-Solving

Relationship Ties — Shared Goals, Shared Knowledge, Mutual Respect
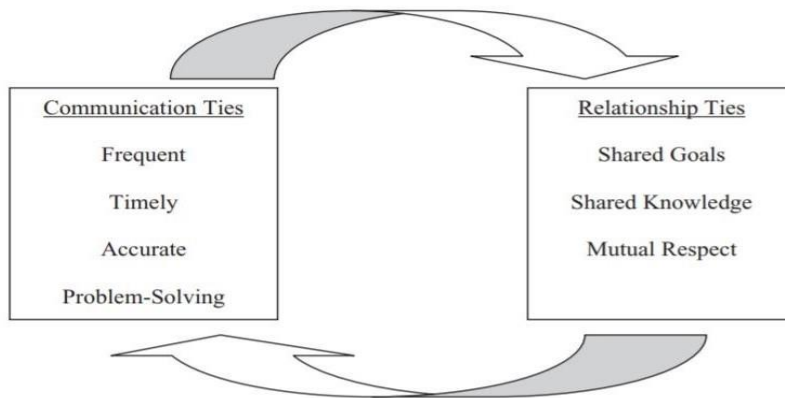
Note. Source: Gittell et al., 2008. Used with permission from Dr. Jody Gittell.

RC appears to positively impact key measures of performance in two areas: quality and efficiency. The RC theory has been used by the airline industry to improve safety and process and was later applied in hospital settings (Gittell et al., 2007). The framework was applicable to the current study because RC focuses on the relationships between roles rather than on relationships between unique individuals, which may decrease turnover (Gittell, 2001; see Figure 2).

Figure 2

Patient Care: A Coordination Challenge
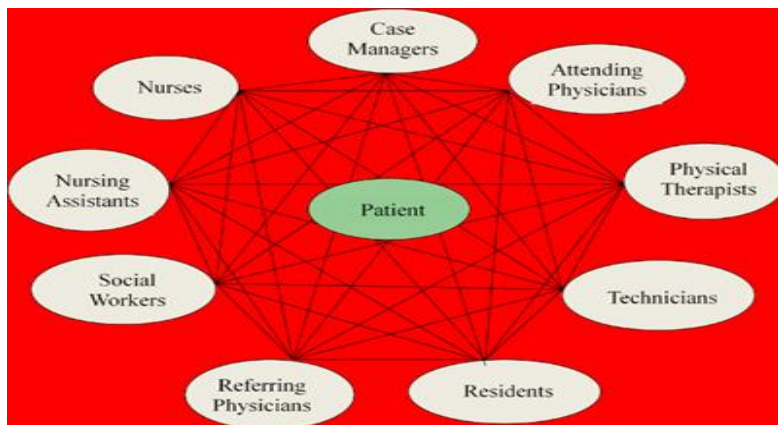
Note. Source: Gittell (2011). Used with permission from Dr. Jody Gittell.

Leaders in health care are responsible for collaborating with others and providing a leadership style that partners with employees to achieve mutual goals that promote staff retention (Wood, 2010). Leaders who are best prepared to help teams work through high-stakes situations are more likely to create an environment that fosters positive teamwork (Shuffler et al., 2017). The theory of RC promotes teamwork and positive outcomes related to improving retention of nursing home staff (Dunavan, 2017).

Nature of the Study

This study addressed staff turnover data in nursing homes in the state of Texas. All nursing homes in the 254 counties in Texas who completed the 2017 LTCNSS had their raw data considered for this study. The person responsible for completing the survey was the director of nursing or nursing home administrator. A correlational design was used to analyze the association between the variables (see Crano et al., 2015; Howell, 2014). A correlational design was appropriate because a major objective of the study was

to examine the association between nursing turnover (dependent variable) and workload, absenteeism, and number of beds (independent variables). Data were analyzed using the IBM Statistical Package for the Social Sciences (SPSS) Version 27. To obtain the secondary data about nursing staff turnover, I contacted the program director for the Texas Health and Human Services at the Texas Center for Nursing Workforce Studies Center of Health Statistics and obtained the request form .

Literature Review

This literature review focused on articles related to nurse turnover, workload, absenteeism, and number of facility beds. Knowledge advancement is built on prior studies, and this literature review addressed relevant studies and research gaps (see Xiao & Watson, 2019). The first section includes a review of nursing home structure and how this provides health and personal care sevices for the growing older population. The next section includes a review of RN and LVN turnover followed by a section on CNA turnover. The review of the literature also includes consequences of RN, LVN, and CNA turnover. After these sections, a discussion of the independent variables (workload, absenteeism and number of beds) is provided.

Search Strategy

For this literature review, the primary sources included peer-reviewed articles from the following databases and search engines: Medline, Google Scholar, ProQuest, Academic Search Premier, and EBSCO. Searches were done using keywords such as *nursing staff turnover*, *skilled nursing home, workload, absenteeism, number of beds, long-term care, relational coordination, job satisfaction*, *post-acute care*, *intent to leave*, *employee turnover*, *turnover intention*, *registered nurses*, *licensed practical nurse*, *certified nursing assistant*, *nursing home culture*, *employee engagement*, and *retention*. The professional and academic literature supplied by these searches provided a foundation for understanding the topic of staff turnover among RNs, LVNs, and CNAs in nursing homes.

There is no better place to be than in one's own home, and most people would agree that nursing homes should be the last resort (Holup, 2016). Currently, more older people want to age in place and are able to do this with home care resources (Holup, 2016). Traditions in U.S. culture continue to be a driving force for the older population, especially their attitudes toward their living arrangements and where they elect to live (Li & Carter, 2017). The 2018 AARP National Survey of Adults indicated that 3 out of 4 adults age 50 and older want to stay in their homes and communities as they age. To meet the needs of older residents living with multiple acute and chronic conditions and functional impairments, families often turn to nursing homes to provide care and attention (Landers et al., 2016). Although most older Americans attempt to avoid living

in a nursing home, the reality is that there may come a time that they need long-term care to survive (Nordman et al., 2016).

Currently, there are approximately 1.3 million older people living in nursing homes in the United States (Centers for Disease Control and Prevention, 2019). There are approximately 15,600 nursing homes in the United States with 1.7 million licensed beds occupied by 1.4 million patients (Centers for Disease Control and Prevention, 2019). As the baby boomer generation approaches retirement, a portion of them may reside in nursing homes at any given time (Martin & Clark, 2020). The number of individuals requiring long-term care will place a significant strain on the nursing home sector (Gilster et al., 2018). The Population Reference Bureau (2015) stated that from 2016 to 2060, the number of adults age 65 and older will nearly double from 49 to 95 million, which means that 1 in 4 Americans will be at least 65 years old by 2060. Long-term services are wide-ranging and complex but also share one objective to allow an individual to achieve and preserve an optimal level of function (Nagaratnam, K., & Nagaratnam, 2019).

The primary advantage of nursing home care is that residents have access to skilled care 24 hours a day 7 days a week, and some of these comprehensive and individualized treatment services may include pain management, nutrition support, wound care, IV antibiotics, and pulmonary management. A benefit of nursing homes involves daily rehabilitation services that can strengthen and recondition older people in preparation for discharge home. Rehabilitation services may include speech, physical, and occupational therapies, which are often used for neurological rehabilitation, stroke

management, and orthopedic rehabilitation (Centers for Medicare and Medicaid Services [CMS], 2019; Kindred Hospitals, 2019).

This type of care will help residents achieve positive outcomes, regain function, and safely return home as quickly as they recovery and physician allow. This is the most favorable setting for somebody who is about to be discharged from the hospital but is not quite well enough to return home (Bruvik et al., 2017). Although home will always be the most comfortable place to be, the degree of care may change, and nursing homes may be the only option (CMS, 2019; Kindred Hospitals, n.d.).

Care at Home Prior to Nursing Home Placement

Estimates from the American National Alliance for Caregiving (2020) revealed that during the past year in 2020, 53 million Americans (or 19% of the U.S. caregivers) provided care to an ill or disabled adult. Holup et al. (2017) looked at the Minimum Data Set for all free-standing certified nursing homes in the United States from the years 2007–2008. Based on their national findings, between July 1, 2007, and July 30, 2008, a total of 71,669 nursing home patients were admitted directly from home representing 5.31% of the total admissions (Holup et al., 2017). Approximately 32% of individuals admitted from home were receiving formal health services, 29.41% lived alone, and (29.84%) were responsible for their own decision (Holup et al., 2017). Findings suggested that as care at home becomes more important and complex, a better understanding of the reasons for admission to nursing homes is needed (Holup et al., 2017).

Nursing Home Readmissions

Nursing home residents are likely to have been admitted to an acute hospital prior to nursing home placement (Unroe et al., 2018). Annually, more than 3 million persons enter a nursing home in the United States, with most residents coming directly from hospitals (Sorkin et al., 2018). Acute hospitals are asked to establish comprehensive care plans for residents with significant medical and psychosocial issues while navigating tense relationships between health care institutions and rising financial pressures (Britton et al., 2017). Hospital providers are often pressured by institutional-level factors such as insurers who want to keep costs down with a shorter length of stay, which may result in premature discharges (Coffey et al., 2019). Discharges that occur before a resident is clinically stable may create bad outcomes with either readmissions back to the acute hospital or death (Carnahan et al., 2016). One nursing home director of nursing explained that direct care and supervisory staffing in nursing homes are different from hospitals and there may only be 1 supervisor for 100 patients (Britton et al., 2017).

There are many reasons for hospital readmissions from nursing homes, which have increased since the implementation of hospital diagnosis-related group by CMS in the 1980s (Post, 2016). The Office of the Inspector General (from 2008-2012, as cited in (Levinson & General, 2014) found that 22% of Medicare beneficiaries experienced an adverse event leading to hospital readmission during a nursing home stay and that 60% of these were considered preventable by physician reviewers. Britton et al. (2017) highlighted that 33% of residents discharged from a hospital to a nursing home will be readmitted to the hospital within 30 days because nursing home providers encounter

significant barriers when exchanging information, including hospital providers' poor knowledge about nursing homes, inaccurate and incomplete documentation, and workflow challenges (Britton et al., 2017). The findings suggested complex challenges hospitals and nursing home providers face across the continuum of care (Britton et al., 2017; Willard-Grace et al., 2019).

Staff Turnover in Nursing Homes

This section addresses issues related to staff turnover in nursing homes and by job category. The effect of job dissatisfaction and thoughts about quitting may lead to turnover (Mobley, 1977; Mobley et al., 1979; Zeytinoglu et al., 2007). The topic of quality in nursing homes has raised concerns for local, state, and national policymakers and the users of services (Kohler & Wunderlich, 2001). One of those quality implications is staff turnover, which can be problematic and hard to control (Temkin-Greener et al., 2020). As the aging population continues to increase in the United States, nursing homes will need to find tailored staffing solutions to strengthen retention (Rajamohan et al., 2019). In 2012, the median turnover rate for all employees in U.S. skilled nursing care centers was 43.9% (AHCA, 2014). According to Nursing Home Salary & Benefits Report 2018-2019 (2020), the turnover rate for nursing home RNs in 2018 was 33.94%, the LVN turnover rate was 28.83%, and the CNA turnover rate was 41.9%.

With an interest in nursing home staffing, researchers are studying staffing solutions because of the negative impact turnover has on quality (Harrington et al., 2016). Direct care staff (RNs, LVNs, and CNAs) make up the largest portion of staff in nursing centers, and they are vital because they provide the most direct care for the needs of older

residents (AHCA, 2014). Researchers have examined nursing staff turnover rates, which was calculated as the number of terminations in 1 year divided by the total number of staff (Donoghue, 2010). Donaghue (2010) defined staff turnover as the sum of terminated licensed nurses in the four quarters divided by the average number of licensed nurses employed during each quarter of the year.

Nurses are leaving at a faster rate than nursing homes can replace them (Chang et al., 2018). Chang et al. (2018) examined two turnover intentions: (a) leaving the profession and (b) staff voluntarily leaving the nursing home. Yamaguchi et al. (2016) found that job control and work interference by families were two important determinants of intentions to leave. Frequent and significant fluctuations in day-to-day staffing levels create opportunities for gaps in care. The combination of rapid job growth and high rates of turnover requires long-term care employers to constantly recruit employees (Frogner & Spetz, 2015).

Rau (2018) analyzed the payroll records of 14,000 nursing homes that had been submitted to Medicare and found that 7 in 10 facilities had staffing levels 12% below the appropriate standards. Brady (2016) stated that with respect to turnover, the factor of cost alone can be a significant burden on a skilled nursing facility's budget because the cost could be $30,000 to hire and train a new CNA. According to the AHCA (2014), the median turnover rate in nursing care centers was 50% for RNs, 36.4% for LVNs, and 51.5% for CNAs. Researchers found high turnover in low wage jobs in care-related fields has an impact of the quality of care (see Table 1).

Table 1

Nurse Pay Type

Nurse type	Mean pay	Median pay	Annual medium pay
Registered nurse	$38.47	$36.22	$75,330
Licensed vocational nurse	$24.08	$23.47	$48,820
Certified nursing assistant	$15.41	$14.83	$30,850

Note. Bureau of Labor Statistics (2020).

RN Turnover

RN turnover is a significant problem in U.S. nursing homes. In 2012, among direct care staff and specifically RNs, the median turnover rate was 50% representing the highest of any licensed nurse (AHCA, 2014). Among LVNs and CNAs, the largest change occurred among RNs with an 11.1% increase in turnover from 2011 to 2012 (AHCA, 2014). Although the causes for the increase in turnover have not been addressed, RNs may be moving from nursing homes to hospitals to receive higher salaries (Kingma, 2018). Also, when the economy is growing and unemployment rates are decreasing, turnover is higher due to increased job opportunities (AHCA, 2014). Trinkoff et al. (2013) reported that lower RN turnover was significantly associated with decreased falls, decreased tube feeding, and decreased incontinence. Higher RN turnover was significantly associated with low quality of care (Lerner et al., 2014). Castle and Engberg (2006) found that RN stability (defined as the percentage of RNs with a tenure of 5 or

more years at the facility) is associated with lower residents' acuity levels. The inability to fill RN positions can lead to above-average vacancy rates, negatively impacting staff and residents' satisfaction, quality outcomes, and the organization's financial considerations (Hisgen et al., 2018)

LVN Turnover

Although LVNs can serve in the role of staff nurse fulfilling functions such as medication administration, treatments, and documentation of performed tasks, the RN is accountable to ensure the needs of the residents are identified, incorporated into the care plan, met, and evaluated (Mueller et al., 2018). Although LVNs' scope of practice is more limited than that of RNs, studies have shown that LVNs often provide more hours of nursing care per day than RNs (Harrington et al., 2010). Dating back to 2004 in the National Nursing Home Survey, which compared the annualized turnover rates between RNs, LVNs, and CNAs to determine the impact of nursing staff turnover on residents, survey results indicated that the annualized turnover rate for LVNs was found to be the lowest at 51% in 2004 (Donoghue, 2010). Among the three nurse types, LVNs have the lowest rate of turnover and the highest level of retention (Donoghue, 2010). When staffing personnel are stable, nurses deliver better bedside care (Winslow et al., 2019). The AHCA (2014) found that LVNs continue to represent the lowest turnover at 36.4% in 2012, which was a decrease of 7.5% from 2011.

CNA Turnover

CNAs across the United States are caring for millions of individuals in nursing homes who require assistance with six basic activities of daily living: eating, bathing,

dressing, toileting, transferring, and walking (Hummell, 2017). Due to their direct care impact on residents, CNAs are the most prominent and integral part of the staff. Nurse aides are paid at lower rates relative to workers in other areas of health care and in other industries (e.g., the fast-food industry; Castle et al., 2007). Castle et al. (2007) further posited that CNAs are often the working poor, and many are single parents from underrepresented groups. This category of licensed workers has the highest percentage of turnover compared to other direct care staff (Dandhi et al., 2021).

Dating back to the mid-1970, studies have documented that the average nursing home turnover rates for CNAs ranges from 55% and 75% (Halbur, 1986). This information demonstrates that turnover rates in nursing homes are not a recent phenomenon, rather an issue that has persisted for many years and is often associated with poor quality of care in nursing homes (Antwi & Bowblis, 2018).

According to Mongan (2016), findings released by the Paraprofessional Healthcare Institute indicate that nursing assistant positions will increase and by 2024 consist of 39% of employment increases in the long-term care industry. CNAs make up 66% of the total general healthcare workforce, which makes them the largest segment of healthcare workers in long-term care (Brady, 2016). Despite employment growth in the long-term care industry, there are estimates the over 40,000 CNA vacancies existed in nursing home, more than double that of RNs and LVNs (Mongan, 2016).

The first two national estimates of nursing home staff turnover to exist in literature studies were conducted by the AHCA in 2001 and 2003. In 2001, the AHCA estimated annual turnover among CNAs at 78.1%, RNs at 56.2%, and LVNs at 53.6% on

an annualized basis. In 2003, the AHCA estimated CNA turnover at 71.1% and both RNs

and LVNs at 48.9%. 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 LVNs. The response rate for these surveys varied

between 65% and 75%. Still, 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. This is significant

because facilities with higher census month-to-month CNAs tend to higher resident ratios

and staffing levels are inadequate. In a 2007 study, Castle et al. found that CNAs are less

likely to think about leaving, about another job, or conduct a job search when they are

satisfied with the job's rewards (defined as wages and opportunities for advancement). It

is expected that CNAs who are recognized for their skills and productivity will both be

associated with lower turnover and higher retention.

　　　While Choi, and Johantgen (2011) maintain that there is not a simple single

solution to CNA retention, they suggest it is important. For facilities to remain at or

below the average bed occupancy of 86.3% in order to alleviate burden on staff.

Alleviating staff burden can help in decreasing the turnover of CNAs. While this is a

thoughtful suggestion, it may not be practical in the real-word setting. Brady (2016)

suggests that a training program with the goal of improving communication between

Certified Nursing Assistants and their direct supervisors and management can improve

retention.

Variable: Workload

Growing evidence suggests that unreasonable workloads have an adverse effect

on quality of care and resident safety in nursing homes (Buljac-Samardžić & Woerkom,

2018). The concern about nurse workload has been an industry-wide issue the past few

decades. Nursing homes deal with increasing workloads due to the rising number of

elderly people, financial difficulties, understaffing, increased complexity of care, and

higher expectations regarding the quality of care (Buljac-Samardžić & Woerkom, 2018).

Staff turnover in the nursing home industry is often attributed to burdensome workloads.

Fagerström , Kinnunen & Saarela (2018) state when workloads are high the occurrence of

safety incidents can be linked to poor nursing care. Cuadros et al., (2015) analyzed a

cross-sectional review of hospital workload of 85 nurses and 157 nurse assistants and

results showed a high correlation between size of workloads and fall rates of residents.

The higher workloads corresponded to an increased number of resident falls. If

workloads are too high and leading to a high rate of resident falls, this could point to

underlying issues with nurse's ability to respond to call lights immediately and thus cause

inefficient resident monitoring.

Authors Nelson & Flynn (2015) investigated the association between missed care

and the incidence of urinary tract infection (UTI) among nursing home residents. The

study was conducted with 63 New Jersey nursing homes which included responses from

340 direct care RNs and it was determined that nearly one half of nurses reported missing

at least one necessary care activity during their last shift. Missed care was significantly correlated with UTI because of the lack of teamwork, inadequate labor resources and more particularly, increased workload. While efficiency may be gained by maintaining higher resident volume per nurse (higher workload), high quality resident care requires low levels of nurse turnover (Subramony et al., 2018). In 2017 authors MacPhee, Dahinten & Farinaz investigated the association between seven workload factors and resident and nurse outcomes using cross-sectional correlational study of 472 acute care nurses from British Columbia, Canada. The authors were interested in identifying key predictors that can be used to identify worrisome trends and avert serious outcomes, such as resident mortality and morbidity. The study concluded job-level perceptions of heavy workloads and task-level interruptions had significant effects on resident outcomes.

Tasks left undone were associated with heavy workloads and task interruptions which resulted in decreased resident outcomes (MacPhee, Dahinten & Farinaz, 2017). MacPhee, Dahinten & Farinaz (2017) suggest work dissatisfaction is a significant predictor of turnover which can indicate nurses are disengaging from their job, considering work at another facility and ultimately, resignation.

Leiter and Maslach and Kowalski et al. (2009) used the mediation model of burnout to see if it could predict nurses' turnover intentions. This model was used as it links a nurse's workload to various quality outcomes, such as turnover. Findings from this study supported the mediation model of burnout, in which areas of worklife predicted burnout, which in turn predicted turnover intentions. Conclusions of this study indicated that workload has a direct link to exhaustion, which may lead to burnout, and an

increased number of resignations and turnover. High workloads among all nurses and nurse assistants as explained by Carlesi et al., (2017) may lead to a decline in job satisfaction which can have a significant effect on nurse turnover. Several other studies have also established the connection between higher levels of nurse burnout and poorer quality of resident care (Dyrbye et al., 2017; Hall et al.,2016; Salyers et al., 2017; Liu et al., 2019).

Variable: Absenteeism

Absenteeism and turnover among nurses have a significant impact on quality resident outcomes and overall nursing home performance (Zboril-Benson, 2016). Absenteeism is the failure to report for work when an employee is scheduled to work a specific date/time. At times absenteeism is unavoidable due to illness, family responsibilities or long-distance commuting. The impact of absenteeism could contribute to the instability of nursing staff with understaffed units, all of which can negatively impact quality of resident care. Absenteeism among nurses can affect productivity and become problematic for administration and financially burdensome for the organization. Nurse burnout is one of the leading causes of absenteeism which can lead to decreased job and resignations (Castle, 2015).

Ticharwa, Cope & Murray (2019) conducted a mixed-methods study which collected and analyzed nurse absenteeism data from a 300-bed tertiary teaching hospital from July 1, 2016 to June 30, 2017. The respondents believed unplanned leave was more pronounced on certain days of the week, Monday and Friday and more commonly, after a period of days off or after a night out. It was also noted that those who do double shifts or

overtime were predisposed to incidences of absenteeism due to the strain resulting from excessive work (Ticharwa, Cope & Murray, 2019). Jalal et al. (2014) confirm the negative impact of a heavy workload and the association to absenteeism are directly correlated.

Cohen and Golan (2007) conducted a study that examined the association turnover intentions and absenteeism among employees working in long term nursing care facilities. It was noted that a history of early absenteeism was strongly related to later absenteeism (Cohen & Golan, 2007). The effect of prior absenteeism on turnover intentions support the argument that the two represent similar processes of withdrawal from the organization (Cohen & Golan, 2007). A high rate of absenteeism provides administrators an early indication of a withdrawal process among nurses and therefore leaders should commit to increasing job satisfaction.

Authors Daouk-Oyry et al. (2013) examined studies of two major databases, PubMed and CINAHL, published between January 2007 and January 2013 about absenteeism and turnover. The researchers identified 41 out of 7619 articles matching their inclusion criteria. This analysis yielded 91 antecedent variables and 12 outcome variables for turnover, and 29 antecedent variables and 9 outcome variables for absenteeism. Content analysis resulted in 11categories and five main factors: job, organization, individual, national, and interpersonal (JOINT). The authors then proposed the JOINT multilevel conceptual model for investigating nurse absenteeism and turnover within the workforce. Their findings suggest that nurse attendance behavior can significantly affect the quality of care outcomes such as the rate of medical errors and

financial outcomes of nursing homes. They identified that individual nurses' prior attendance records, burnout, and work attitudes (job satisfaction, organizational commitment, work/job involvement, and job stress) are predictors of nurse absenteeism. Other antecedents such as emotional demands caring for dying people, lifting heavy loads, long standing positions, working overtime and long hours are also involved. The researchers suggested that absenteeism, turnover, leaving the healthcare sector altogether, salaries, and insistence on changes in working conditions are all coping strategy proxies for working as nurses in nursing homes.

Variable: Number of Beds

Nationally, nursing home facilities can vary in size with many of them exceeding 100+ beds. Nationwide, since 2009 the number of nursing facility beds has been fairly consistent, reaching 1.6 million certified beds in 2016, with an average of 109 beds per facility (Harrington et al., 2019). An increase in nursing homes and nursing home beds has been expected in order to keep up with population aging (Wilson, Brow & Playfair, 2017). The U.S. Department of Health and Human Services (2015) indicated the total number of nursing homes in the U.S. was 15,650 in 2014. A total of 946 nursing homes reported to have greater than 199 beds, 6,899 nursing homes reported to have between 100-199 beds, 5,773 nursing homes reported to have 50-99 beds, and 2,022 nursing homes reported to have less than 50 beds.

Figure 3

Number of Nursing Homes by Bed Size in the United States
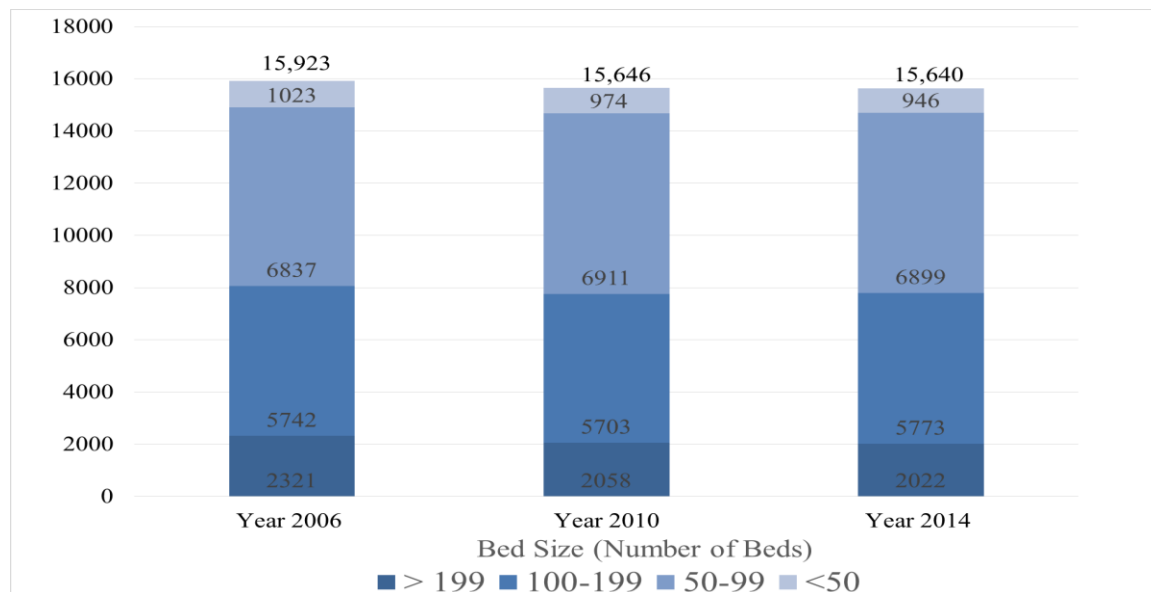
Note. Centers for Medicare and Medicaid Services (2015).

It can be argued that the total number of beds in a facility could contribute to high workload in nursing homes. Some studies have shown that lower staffing levels, increased work burden and higher bed size are associated with higher turnover (Castle, 2006). In this study Castle (2006) examined turnover information from 854 facilities in six states (Missouri, Texas, Connecticut, New York, Pennsylvania, and New Jersey) and the association between CNAs, LVNs, and RNs and organizational characteristics of nursing homes. Of the 8 characteristics, bed size was studied, and the results consistently show that bed size was one of the eight associated with turnover. The average annual RN, LVN, and CNA turnover rates were 35.8% for CNAs, 39.7% for LVNs, and 56.4% for RNs, respectively. Staffing levels above the mean value of 18 LVNs per 100 beds, higher staffing levels are not associated with higher levels of turnover however, RN staffing has

a strong positive association with turnover with four RNs per 100 beds predicts a turnover rate of approximately 20% whereas facilities with 30 RNs per 100 beds predicted turnover rate of over 150%. Castle (2006) state nursing home size with fewer beds is associated with lower turnover. This result may reflect the lesser degree of oversight that is thought to exist in small nursing homes (Castle, 2006). Facilities with more beds are found in this study to have higher levels of turnover for all nurse types. Other studies have shown that lower staffing levels, increased work burden and higher bed size are associated with higher turnover, while other studies did not find similar associations (Mukamel et al., 2009).

Facility characteristics have shown to have an association with turnover. According to Castle et al. (2007) one of the facility's characteristics is number of beds. A random sample of 72 nursing homes from give states (Colorado, Florida, Michigan, New York, and Oregon) included 1,779 surveys from nurse aids utilized instruments to measure job satisfaction, intent to leave and turnover (Castle et al., 2017). In this study, the facility size analysis was not effective in explaining intent to leave or further explaining actual turnover. However, additional findings suggest CNAs are especially dissatisfied with staffing levels, as indicated by their dissatisfaction with workload and the amount of time they have to do their jobs.

Gaps in Literature

Many research results concerning nurse turnover, particularly in hospitals, indicate that there are several factors that influence turnover. While some of the studies considered a few of the variables identified in this study, there is no literature related to

nursing homes with the combination of the three variables workload, absenteeism, and number of beds; consequently, there are gaps in literature this study addressed. There are also no research studies that could be found in the past 5 years about nursing staff turnover in nursing homes. This is another gap this study addressed and the information will contribute to a body of knowledge concerning turnover for nursing home nursing staff. The care of seniors in nursing homes will benefit from further research to track trends concerning staffing issues, turnover, and ultimately retention.

Conclusion

High nurse turnover can have negative consequences on the needs of residents. Ongoing nursing staff instability may be influenced by workload, absenteeism, and number of beds and further research is needed to address how turnover within nursing homes impacts resident care and possible hospitalizations. Many studies in this section provide information about turnover related to workload, absenteeism, and number of beds and this study examined the association due to the concerns that higher turnover translates to lower quality of care for nursing home residents.

<p align="center">**Definitions of Frequently Used Terms**</p>

Absenteeism: Proportion of staff not reporting to work for any reason on the day when they were scheduled to work over the total number scheduled to work (Bugio et al., 2004).

Activities of daily living (ADLs): Activities classified into five categories (i.e., bathing, dressing, toileting, transferring, and eating) that reflect the resident's capacity for self-care (NNHS, 2004).

Bed capacity: A bed that is set up and staffed for use, whether or not it was in use by a resident at the time of the survey. Not included are beds used by staff or owners or beds used exclusively for emergency purposes, for day care only, or for night care only (NNHS, 2004).

Catheter care: A thin tube that is inserted into the body to provide or drain fluids, or to carry tiny surgical instruments and cameras in minimally invasive surgeries (Harvard Health Publishing, 2011).

Certified Nursing Assistant (CNA): Commonly referred to as nursing attendants, nursing assistants, and direct care workers; CNAs provide basic care and help with basic living activities to assist resident with their fundamental needs (Bureau of Labor Statistics, 2019).

Dementia: A loss of brain function that worsens over time and affects memory, thinking, behavior, and language (Harvard Health Publishing, 2011).

Long-term care: Long-term care is a set of health, personal care, and social services delivered over a sustained period to persons who lost or never acquired some degree of functional capacity (Doyle, 2012).

Nursing home: A long-term care facility that provides 24-hour supervision and nursing care to individuals who are not able to care for themselves in the community or be cared for in the community (Allen, 2009).

Nursing home resident: An individual who lives in a skilled nursing facility, because of his/her inability to perform activities of daily living independently, and the nursing home is his/her home (Gravenstein & Mor, 2021).

Nursing staff: Registered nurses, licensed practical nurses, licensed vocational nurses, and nurse's aides or orderlies (NNHS, 2009).

Nutrition support: Therapy for resident who require custom meal plans directed by dieticians (Kindred Healthcare, n.d.).

Pain management: Programs may employ non-opioid or opioid treatment to provide effective pain management (Kindred Hospitals, n.d.).

Pulmonary management: Treatment pertaining to the lungs, respiratory therapy may help a resident breathe easier (Kindred Hospitals, n.d.).

Registered Nurse: Provide and coordinate resident care, educate patients and the public about various health conditions, and provide advice and emotional support to patients and their family members (Bureau of Labor Statistics, 2019).

Rehabilitation: Services include physical therapy, occupational therapy and speech therapy for resident who lose strength and stamina due to extended time in nursing home setting (Kindred Hospitals, n.d.).

Relational Coordination Theory: A theory of coordination that makes visible the relational process underlying the technical process, arguing that coordination is not only the management of interdependence between tasks but also the management of interdependence between the people who perform those tasks (Gittell, 2015).

Restorative nursing: Defined as a philosophy of care that encourages, enables, and motivates individuals to maintain and restore function, thereby optimizing independence (Ritchie et al., 2017).

Short-term rehabilitation: The primary goal of a good short-term rehab program is for patients to recover and return home in less than 30 days. These patients would have completed an in-patient rehabilitation plan determined by progress which is monitored by doctors and specialists (Kindred Hospitals, n.d.).

Stroke management: Blockage or rupture of a blood vessel supplying the brain; often leads to impaired brain function or death (Harvard Health Publishing, 2011).

Turnover: Employee totally separates from an organization and includes cessations, resignations, layoffs, and discharges (Brawley & Pury, 2016).

Turnover intention: Self-expressed intentions to leave their work setting, agency or the profession (Hayes et al., 2012).

Workload: There is no common definition for nurses' workload. Workload is often associated with the volume of nurses' work, and there have been many attempts to quantify nurses' work in relation to health human resource management (MacPhee & Havaei, 2017).

Wound care: There are different types of wounds that can damage the skin including pressure ulcers (multiple stage II, stage III or stage IV) or surgical wounds (open non-healing wounds, incisions or infected wounds (Kindred Hospitals, n.d.).

Assumptions

Assumptions are made as statements that are assumed to be true and serve to provide structure to theories that may encourage validation through research (Vogt & Johnson, 2011). Leedy and Ormrod (2010) further posited that assumptions are basic forms of rationale that inform associations and observations. There were several

assumptions associated with this study. First, it is assumed that the turnover data rates used in the LTCNSS are accurate. A second assumption is that the variables are independent of each other from the secondary data. A third assumption is that the secondary data depicts the turnover data in the state of Texas. A fourth assumption is that all participants of the study are the actual employees of long-term care facilities. A final assumption is that turnover intention reflects or contributes to actual turnover rates.

Limitations

The following limitations are associated with this study. The first limitation concerns the secondary data which is only associated with the state of Texas and may not be reflective of other states. Another limitation is that the LTCNSS self-reported questionnaires of participating Texas nursing homes did not include all nursing homes in Texas but only those that chose to participate and complete the survey. Another limitation is that administrators may not understand the importance of completing the survey thoroughly due to personal bias or inaccuracy of events related to turnover. This study is a correlational in design as opposed to descriptive, quasi-experimental, or experimental which could affect outcomes and interpretation of data.

Scope and Delimitations

The scope and delimitations establish the boundaries of what will be included in the study. The scope of this study is limited to nursing homes in the state of Texas and therefore the results of this study may not be generalizable to other areas of the country. The secondary data set, obtained from Texas Center for Nursing Workforce Studies (TCNWS), was used to determine the results of the research questions concerning

nursing staff turnover in nursing homes. The scope does not extend to hospitals or other

levels of care other than nursing homes. And finally, the scope of the study is focused on

RNs, LVNs, and CNAs as opposed to other non-nursing staff positions in nursing homes.

Limitations of the study concern the use of secondary data as opposed to primary data

and the size of the population which was limited by the number of Texas nursing homes

that were included in the LTCNSS survey.

Internal Validity

This research study incorporates secondary data from the 2017 Texas Center for

LTCNSS survey and data will be examined without manipulation. Internal validity is the

extent to which factors influencing nursing turnover are a true reflection of reality rather

than the results of the effects of turnover. Quantitative researchers can assess internal

validity by examining the causal association between variables and eliminating threats

affecting the outcome (Clinton, 2016). In order to decrease any threats that could

potentially compromise the study, the SPSS software application will be used to review

and analyze data. Additionally, due to data availability, the study is based on factors

influencing nursing staff turnover, which may or may not be accurate.

External Validity

External validity involves generalizing the findings of a study with an application

to other sectors (Cronbach & Shapiro, Huebschmann, Leavitt & Glasgow, 2019; Yin,

2014). In this study, data originated from secondary data sources. External validity

describes how readers can apply the results of the study to other groups or situations

(Venkatesh et al., 2013). The focus of external validity is how well the study applies

outside of the study environment (Simmons, 2015). In this correlational study, the sample included secondary data related to Texas nursing homes and this implies that the results may be generalizable to all Texas nursing homes.

Significance of the Study

Addressing the important issues associated with nursing staff turnover promotes quality outcomes for nursing home patients (Alexander, Armstrong & Barton, 2018; Banaszak-Holl et al., 2018; Shin, 2018). McCay, Lyles, and Larkey (2018) stated there is an increasing demand to improve patient satisfaction and stable staffing and staff satisfaction is a component of this goal. Results of this study may add to leadership education and training through professional development and interventions pertaining to nursing staff satisfaction and retention (Smith, Wong & Regan, 2019). Although factors involved in nursing staff turnover have been studied from a variety of perspectives, the causes and consequences are not thoroughly understood. There is a gap in literature related to nursing home staff turnover and whether there is an association to workload, absenteeism, and number of beds. The results of this study could help administrators explore ways to increase staff retention which will enhance resident care and employee satisfaction (Halter et al., 2017).

Positive Social Change

This study promotes social change by exploring the development of nurse retention strategies that could lead to career-development programs. The findings could add to theory and research explaining the benefits and barriers of resident care in relation to staffing continuity. The results could influence health care administrators to establish

an incentive structure for nursing home staff that could result in improvements in quality, retention, and fiscal success. An investment in training and education to enhance recruitment and retention of nursing home workers could help meet the needs of increasing numbers of aging seniors (Frogner & Spetz, 2015).

Through evaluation of nurse turnover in long-term care facilities, this study may provide healthcare administrators with information involving the issue of nursing turnover as well as possible solutions to mitigate it. To strengthen the bottom line, nursing home administrators may be able to increase retention rates, focus more effectively on vacancy rates, boost recruitment inventiveness and control labor expenses. Administrators may acquire knowledge about how nurses relationally coordinate their work in order to improve resident care for nursing home residents across the United States. Also, this study may support the development for positive relationship building between administrators and their facility's nurses. The results could influence health care administrators to use relational coordination style leadership to support and retain staff.

Summary and Conclusion

Nursing staff turnover can lead to an escalating crisis concerning care for an aging population. Low job satisfaction and high staff turnover prevail throughout the nursing home industry and this is driving costs up and quality down (Tilden et al, 2012). The demand for long term care services is expected increase and the number of individuals seeking care will double by 2050 (TCNWS, 2016a). In order to effectively treat this demand, skilled nursing facilities need to increase their retention rates and this study may contribute to this goal (McGilton et al., 2016). This section discussed research studies

associated with RN, LVN, and CNA turnover in Texas nursing homes specifically in regard to the literature gap associated with the variables of workload, absenteeism, and number of beds. Section two will discuss the research design, methodology, and data collection.

Section 2: Research Design and Data Collection

The purpose of this quantitative correlational study was to examine the association, if any, between staff turnover and workload, absenteeism, and number of beds in Texas nursing homes. The foundational theory for this study was RC, which emphasizes communication and coordination of care for nursing home patients (Gittell et al., 2008). RC provides structure and processes that have been studied and shown to be beneficial for the patient's experience of care (Gittell et al., 2020). Although multiple researchers have explored how factors influence nursing home staff turnover, there was no literature related to nursing homes that included the three variables of workload, absenteeism, and number of beds; the current study contributed to the literature by addressing this gap. The results may provide nursing home administrators with information about the potential causes of turnover and possibilities for improving staff retention.

Data from the 2017 LTCNSS were examined to determine whether the independent variables were predictive of nursing home staff turnover. There are 254 counties in Texas, and all of the counties received information about the LTCNSS. The person responsible for completing the nursing home survey was the director of nursing or nursing home administrator. Section 2 provides information about the steps that were followed to complete the current study. Section 2 also includes information on data analysis and validity.

Research Design and Rationale

The statistical method that was applied to assess the association and correlation, if any, between variables was multiple linear regression. A multiple linear regression analysis including the three independent variables of workload, absenteeism, and number of beds and the dependent variable of RNs, LVNs, and CNAs was used to determine if there were statistically significant associations that may contribute to staff turnover. Secondary data were analyzed using SPSS. The design choice for the study was consistent with other studies addressing nursing home staff turnover with the exception that other researchers had not examined the association between nursing home staff turnover and workload, absenteeism, and number of beds.

Methodology

The purpose of this quantitative correlational study was to examine whether workload, absenteeism, and number of beds predict nursing staff turnover in Texas. According to Onen (2016), quantitative research requires a thorough examination of the associations between variables. There are various types of quantitative designs such as experimental or quasi-experimental that were not acceptable for the current study. For this study, a correlational design met the objectives of the research questions. Asamoah (2014) stated that correlational designs involve collecting data without imposing control, conditions, or manipulation, and include statistical techniques to analyze and interpret the results. The goal of the current study was to examine whether there was a direct association between nursing staff turnover and workload, absenteeism, and number of beds in nursing homes in Texas.

Population

This study focused on direct care staff (RN, LVN, and CNA) in the 439 Texas nursing homes that responded to the LTCNSS. Data in the staffing report pertained to the number of employed nurses and nurse aides, separations, workload, absenteeism, and other staff characteristics. The data for this study were not available to the general public, and permissions were obtained from TCNWS (see Appendix B).

Sampling and Sampling Procedures

A quantitative correlational design was used to assess the association, if any, between nurse turnover rates and workload, absenteeism, and number of beds in Texas nursing homes. Correlational designs are nonexperimental methods used to describe and measure the degree or association between two or more variables or sets of scores (Creswell & Creswell, 2018). The secondary data were acquired from the 2017 LTCNSS distributed by the TCNWS. TCNWS was created by the Texas legislature in response to Texas's nursing shortage, and the TCNWS is a significant resource for data about the nursing workforce. There were approximately 11,335 direct care staff in the current study, which included RNs (610), LVNs (3,490), and CNAs (7,235). Sample Size Estimation

A G* Power 3.1 power analysis calculator was used to determine the minimum sample size of RNs, LVNs, CNAs required. An estimated sample size of RNs was 610. An estimated sample size of LVNs was 3,490. An estimated sample size of CNAs was 7,235. The minimum sample size required for the study was 77, as shown in Figure 4.

Figure 4

RN, LVN, and CNA Sample Size Estimation
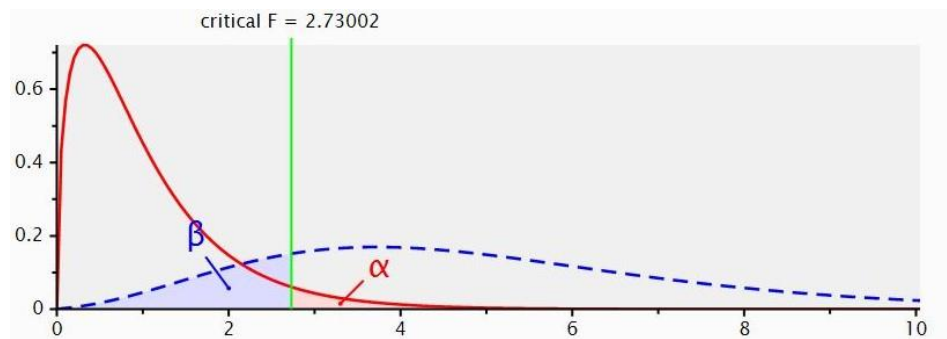
Note. G*Power 3.1.

Power Analysis

A G*Power 3.1 power analysis calculator was used to conduct sample size

analysis for multiple linear regression. To carry out the a priori power analysis, it was

necessary to identify the inferential procedure to be applied in the study. The proposed

multiple linear regression was inferential, with four major predictor variables and three

independent variables. Cohen (1988) recommended an effect size of $f^2 = 0.15$ for a

multiple linear regression statistical test. Based on the minimum subjects needed for the

research questions, the standard power level was 80%. This meant that there was an 80%

chance of finding results that were significant within the study population (Suresh &

Chandrashekara, 2016). Alpha is the level of probability at which the null hypothesis is

rejected (Jeon & De Boeck, 2017). The alpha level of $\alpha = .05$ was used for the current

analysis. Based on these inputs, the a priori sample size analysis indicated a minimum

required nursing sample size of 77.

Secondary Data Analysis

Data Analysis Plan

Secondary data from the 2017 LTCNSS for the state of Texas were used for the study. The data were analyzed using SPSS and multiple linear regression. A multiple linear regression statistical test was the central statistical procedure of the study. The multiple linear regression was inferential, with three major predictor variables and a single dependent variable. Multiple linear regression is used to assess the association between two or more independent variables and a single continuous dependent variable (Creswell & Creswell, 2018). The dependent variable of nurse turnover rates was analyzed in conjunction with the independent variables of workload, absenteeism, and number of beds.

Secondary Data

The secondary data were obtained from the TCNWS nursing home database for the 2017 LTCNSS. The person responsible for completing the nursing home survey was the director of nursing or nursing home administrator. There are 254 counties in Texas, and all of the counties were included in this study.

Research Questions and Hypotheses

Research Question 1: What is the association, if any, between RN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

$H_0$1: There is no association between RN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a1: There is an association between RN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Research Question 2: What is the association, if any, between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

$H_0$2: There is no association between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a2: There is an association between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Research Question 3: What is the association, if any, between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

$H_0$3: There is no association between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a3: There is an association between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Threats to Validity

External Validity

External validity is how applicable the study is outside of the study environment (Simmons, 2015). External validity indicates how readers can apply the results of the

study to other situations or populations (Venkatesh et al., 2013). In the current

correlational study, the sample included secondary data related to Texas nursing homes,

which implied that the results might be generalizable to all Texas nursing homes. The

data for this study were specific to the state of Texas and cannot be generalized to other

areas of the United States.

Internal Validity

Internal validity is meant to draw conclusions about the effect of an independent

variable on a dependent variable (Meltzoff & Cooper, 2018). According to Andrade

(2018) internal validity examines whether the manner in which a study was designed,

conducted, and analyzed allows trustworthy answers to the research questions in the

study. Internal validity is based on judgment and is not a computed statistic (Andrade,

2018). Location can have a positive or negative effect to validity due to the setting or

settings of the study (Baldwin, 2018). In the current correlational study, nursing turnover

and workload, absenteeism, and number of beds were examined to assess a possible

association. The results of this nursing home study may relate to internal validity based

on location because the setting of the nursing home surveys throughout the state of Texas

has an effect on the outcome, either positive or negative (Baldwin, 2018).

<div align="center">

Ethical Procedure

</div>

This study included secondary data from the LTCNSS. No primary data were

collected. The data set was downloaded and stored on my personal laptop and was

deleted when the study was concluded. All data had been de-identified, and the Walden

University Institutional Review Board provided approval to conduct the study (07-10-20-0678274).

Summary

In Section 2, the study design and data collection methods were presented for the research questions pertaining to associations between workload, absenteeism, and facility bed count and nurse turnover rates. Section 3 provides the results of the data analysis for the four research questions.

Section 3: Presentation of the Results and Findings

The purpose of this quantitative correlational study was to examine the

relationship between direct care nursing staff turnover rates and workload, absenteeism,

and number of beds in Texas nursing homes. The LTCNSS taskforce for 2017 conducted

annually by the TCNWS provided the data for the dependent and independent variables

used to analyze nurse turnover for nursing homes throughout the state of Texas. The

dependent variable (nurse turnover) and independent variables (workload, absenteeism,

and number of beds) were present in the data set. In this section, the data collection

methods, data selection criteria, data analysis methodologies, and a summary of the

statistical results are presented. For this study, the research questions and hypotheses

were as follows:

Research Questions and Hypotheses

Research Question 1: What is the association, if any, between RN (direct care

staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds

during a 1-year period?

$H_0$1: There is no association between RN (direct care staff) turnover in Texas

nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a1: There is an association between RN (direct care staff) turnover in Texas

nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Research Question 2: What is the association, if any, between LVN (direct care

staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds

during a 1-year period?

$H_0$2: There is no association between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a2: There is an association between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Research Question 3: What is the association, if any, between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

$H_0$3: There is no association between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

H_a3: There is an association between CNA turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Data Collection

Once approval was received from the Walden University Institutional Review Board, the deidentified data were analyzed using SPSS. The secondary data were collected in Texas in 2017 from the LTCNSS and mail-outs were sent to long-term care administrative personnel. An electronic copy of the survey was sent in addition to the mail-outs. Of the 1,213 licensed long-term facilities obtained from the Texas Health and Human Services for inclusion in this study, 439 facilities participated in the 2017 calendar year.

Population

Exclusions

The data were received from the organization's health information technology departments as deidentified data in an Excel spreadsheet. First, the data set was filtered by the specific time period for the total number of nurses (RNs, LVNs, and CNAs) employed for a 1-year period from January 1, 2015, to December 31, 2015. The data set was filtered based on exclusion criteria of nurses who were administrative, part-time, per-diem, contract, agency, and traveling nurse. The overall number of full-time nurses at the end of December 31, 2015, was 14,320; however, the total number of full-time nurses excluded from the study was 2,984. The data inclusions and exclusions are presented in Table 2.

Table 2

Data Inclusions and Exclusions

Title of nursing staff	Number of full-time positions 12/31/15	Excluded	Included
DON - administrative	441	441	0
RNs - direct resident care	611	0	611
RNs - administrative	538	538	0
LVNs - direct resident care	3490	0	3490
LVNs - administrative	814	814	0
APRNs - direct resident care	97	97	0
APRNs - administrative	7	7	0
CNAs - direct resident care	7235	0	7235
CMAs - direct resident care	1087	1087	0
Total	14,320	2,984	11,336

Inclusions

After exclusions, the total number of RNs, LVNs, and CNAs in the nursing data totaled 11,336. The secondary data set analyzed for this study included 439 facilities, which was higher than the G*Power analysis required sample size of 119 with power = 0.9509602, alpha = 0.05, and effect size = 0.15. The data set was imported to IBM SPSS for statistical analysis, and nonnumerical variables were converted to numerical variables for proper analysis. No discrepancies were noted in the data set. Applicable data were included to segregate the subpopulation of nurses in the Texas nursing homes.

As shown in Table 3, the data elements represented variable information of the Texas nursing homes ($N = 439$) from January 1, 2015, to December 31, 2015. The population consisted of 11,336 nursing home staff (RN, LVN, and CNA) from 439 nursing homes. In addition, workload and absenteeism were recoded into variables with 0 indicting as not a factor and 1 indicating that absenteeism was a factor.

Table 3

Data Inclusions

Titles of nursing staff	Number of full-time positions 12/31/15	Excluded	Included
RNs - Direct resident care	611	0	611
LVNs - Direct resident care	3490	0	3490
CNAs - Direct resident care	7235	0	7235
Total	11,336	0	11,336

Demographic Characteristics

The geographical location consisted of nursing homes throughout the state of Texas, which includes 254 counties. Texas has 11 administrative health service regions: Lubbock 1, Arlington 2/3, Tyler 4/5, Houston 5/6, Temple 7, San Antonio 8, El Paso 9/10, and Harlington 11. There are four county types based on metropolitan and border statuses: metropolitan border, metropolitan nonborder, nonmetropolitan border, and nonmetropolitan nonborder (TCNWS, 2017). There were 1,213 facilities included in the study survey; however, 439 facilities participated for a response of 36.2%. There were 774 nonresponding facilities that did not participate.

Results

Once the collection, organization, and description of the secondary data was completed, applied inferential statistics and hypothesis testing was conducted using multiple linear regression to test for all significant trends.

Research Question 1

What is the association, if any, between RN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Workload on RN Turnover

It was hypothesized that workload may predict RN turnover. The model explained 0.9% of the variance ($R^2 = .009$; see Table 4). This result indicated 99.91% was unexplained in this situation, which meant there were other predictors not in the model that were influencing RN turnover. The variable workload was limited. $H_0 1$ failed to yield support with a nonsignificant model consisting of workload in relationship to RN

turnover: $F(1, 325) = 2.985$, $p = .085$ (see Table 5). Therefore, the null hypothesis was retained indicating that workload ($\beta = .095$, $p = .085$) was not a significant predictor of the relationship with RN turnover (see Table 6). The findings suggested that workload does not have an impact on RN turnover.

Table 4

Consequences RN Increased Workload

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.074	0.005	0.002	13.915
$N = 439$				

Table 5

ANOVA: Consequences of RN Increased Workload

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	19.187	1	19.187	2.985	.085
$N = 439$	Residual	2088.673	325	6.427		
	Total	2107.859	326			

Table 6

Coefficients: Consequences of RN Increased Workload

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B	
		B	Std. error	Beta			Lower bound	Upper bound
1	(Constant)	1.755	0.256		6.854	.000	1.251	2.259
$N = 439$	Consequences of increased workloads	0.529	0.306	0.095	1.728	0.085	-0.073	1.131

Absenteeism on RN Turnover

It was hypothesized that absenteeism may predict RN turnover. The model

explained 1.5% of the variance (R^2=.015; see Table 7). This result indicated 98.5% was

unexplained in this situation, which meant that there were other predictors not in the

model that were influencing RN turnover. As shown in Table 8, results supported H_a1

absenteeism as a significant predictor of RN turnover: F (1, 325) = 4.795, p =.029 (see

Table 8). Therefore, the alternative hypothesis that absenteeism is a significant predictor

of RN turnover was accepted. As shown in Table 9, absenteeism (β = .642, p = .029) was

a significant predictor of RN turnover indicating that for every unit increase in

absenteeism, there was an associated increase of .642 in RN turnover. The findings

suggested that absenteeism has an impact on RN turnover.

Table 7

Consequences of RN Absenteeism

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.121	0.015	0.012	2.528
$N = 439$				

Table 8

ANOVA: Consequences of RN Absenteeism

Model		Sum of squares	*df*	Mean square	F	Sig.
1	Regression	30.649	1	30.649	4.795	.029
$N = 439$	Residual	2077.21	325	6.391		
	Total	2107.859	326			

Table 9

Coefficients: Consequences of RN Absenteeism

Model		Unstandardized coefficients		Standardized coefficients	*t*	Sig.	95.0% confidence interval for B	
		B	Std. error	Beta			Lower bound	Upper bound
1	(Constant)	1.901	0.173		10.977	.001	1.561	2.242
	Consequences of							
$N = 439$	absenteeism	0.642	0.293	0.121	2.19	0.029	0.065	1.22

Number of Beds on RN Turnover

It was hypothesized that number of beds may predict RN turnover, and the model explained 6.5% of the variance ($R^2 = .065$; see Table 10). This result indicated 93.5% was unexplained in this situation, which meant there were other predictors not in the model that were influencing RN turnover. As shown in Table 11, results supported H_a1 with number of beds significantly predicting RN turnover: $F(1, 334) = 23.394$, $p < .001$ (see Table 11. Therefore, the null hypothesis was rejected and the alternative hypothesis was accepted as number of beds ($\beta = .017$, $p < .001$) was a significant predictor of RN turnover (see Table 12). The results indicated that for every unit increase in number of beds, there was an associated increase of .017 in RN turnover, which indicated that as number of beds increased, RN turnover did as well. The findings suggested that number of beds has an impact on RN turnover.

Table 10

RN Number of Beds

Model	R	R square	Adjusted R square	Std. error of the estimate

| 1 | .256 | 0.065 | 0.063 | 2.442 |
| N = 439 | | | | |

Table 11

ANOVA: RN Number of Beds

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	139.51	1	139.51	23.394	0.001
	Residual	1991.812	334	5.964		
N = 439	Total	2131.321	335			

Table 12

Coefficients: RN Number of Beds

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B	
		B	Std. error	Beta			Lower bound	Upper bound
1	(Constant)	0.196	0.414		0.474	0.636	-0.618	1.009
N = 439	Number of beds	0.017	0.004	0.256	4.837	.001	0.010	0.024

Research Question 2

What is the association, if any, between LVN (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Workload on LVN Turnover

It was hypothesized that workload may predict LVN turnover. The model explained 0.5% of the variance ($R^2 = .005$; see table 13). This result indicated 99.5% was unexplained in this situation, which means that there were other predictors not in the model that were influencing LVN turnover. As shown in Table 14, H_02 failed to yield

support with a nonsignificant model consisting of workload in relationship to LVN

turnover: $F(1, 332) = 1.822$, $p = .178$ (see Table 14). Therefore, the null hypothesis was

retained as workload was not a significant predictor of LVN turnover: workload ($\beta =$

2.237, $p = .178$) (see Table 15). The findings suggested that workload does not have an

impact on LVN turnover.

Table 13

Consequences of Increased LVN Workload

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.074	0.005	0.002	13.915
$N = 439$				

Table 14

ANOVA: Consequences of LVN Increased Workload

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	352.687	1	352.687	1.822	.178
	Residual	64280.789	332	193.617		
$N = 439$	Total	64633.476	333			

Table 15

Coefficients: Consequences of LVN Increased Workload

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% Confidence interval for B	
		B	Std. error	Beta			Lower bound	Upper bound
1	(Constant)	7.861	1.385		5.678	.001	5.138	10.585
$N = 439$	Consequences of increased workloads	2.237	1.658	0.074	1.35	0.178	-1.024	5.498

Absenteeism on LVN Turnover

It was hypothesized that absenteeism may predict LVN turnover. The model explained 0.3% of the variance ($R^2 = .003$; see Table 16). These results indicated 99.7% was unexplained, which meant there were other predictors not in the model that were influencing turnover. H_02 failed to yield support with a nonsignificant model consisting of absenteeism in relationship to LVN turnover: $F(1, 332) = 1.064$, $p = .303$ (see Table 17). Therefore, the null hypothesis was retained indicating that absenteeism was not a significant predictor of LVN turnover: ($\beta = 1.651$, $p = .303$) (see Table 18). The findings suggested that absenteeism does not have an impact on LVN turnover.

Table 16

Consequences of LVN Absenteeism

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.057	0.003	.000	13.93
$N = 439$				

Table 17

ANOVA: Consequences of LVN Absenteeism

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	206.471	1	206.471	1.064	.303
	Residual	64427.005	332	194.057		
$N = 439$	Total	64633.476	333			

Table 18

Coefficients: Consequences of LVN Absenteeism

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B	
		B	Std. error	Beta			Lower bound	Upper bound
1	(Constant)	8.849	0.943		9.379	.001	6.993	10.705
$N = 439$	Consequences of absenteeism	1.651	1.601	0.057	1.031	0.303	-1.498	4.801

Number of Beds on LVN Turnover

It was hypothesized that number of beds may predict LVN turnover. The model explained 7.6% of the variance ($R^2 = .076$; see Table 19). This result indicated 92.4% was unexplained in this situation, which meant there were other predictors not in the model that were influencing LVN turnover. As shown in Table 20, results supported H_a2 with number of beds significantly predicting LVN turnover: $F(1, 341) = 28.166$, $p < .001$ (see Table 20). Therefore, the null hypothesis was rejected and the alternative hypothesis accepted indicating that the number of beds was a significant predictor of LVN turnover ($\beta = .101$, $p < .001$) (see Table 21). The findings suggested that number of beds does have an impact on LVN turnover.

Table 19

LVN Number of Beds

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.276	0.076	0.074	13.293
$N = 439$				

Table 20

ANOVA: LVN Number of Beds

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	4976.946	1	4976.946	28.166	.001
	Residual	60255.293	341	176.702		
$N = 439$	Total	65232.239	342			

Table 21

Coefficients: LVN Number of Beds

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	95.0% confidence interval for B	
		B	Std. error	Beta			Lower bound	Upper bound
1	(Constant)	-1.836	2.213		-0.83	0.407	-6.189	2.517
$N = 439$	Number of beds	0.101	0.019	0.276	5.31	.001	0.064	0.139

Research Question 3

What is the association, if any, between CNA (direct care staff) turnover in Texas nursing homes and workload, absenteeism, and number of beds during a 1-year period?

Workload on CNA Turnover

It was hypothesized that workload may predict CNA turnover. The model explained 0.2% of the variance ($R^2 = .002$; see Table 22). This result indicated 99.8% was unexplained in this situation, which meant there were other predictors not in the model that were influencing CNA turnover. The variable workload variable was limited. $H_0 3$

failed to support with a nonsignificant model consisting of workload in relationship to

RN turnover: $F(1, 329) = .508$, $p = .476$ (see Table 23). Therefore, the null hypothesis was

retained as workload was not a significant predictor CNA turnover ($\beta = .039$, $p = .476$)

(see Table 24). The findings suggested that workload does not have an impact on CNA

turnover.

Table 22

Consequences of CNA Increased Workload

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.039	0.002	-.001	29.881
$N = 439$				

Table 23

ANOVA: Consequences of CNA Increased Workload

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	453.707	1	453.707	.508	.476
	Residual	293759.513	329	892.886		
$N = 439$	Total	294213.221	330			

Table 24

Coefficients: Consequences of CNA Increased Workload

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1		22.814	2.959		7.71	.001	16.993	28.634
$N = 439$	(Constant) Consequences of increased workloads	2.536	3.557	0.039	0.71	0.476	-4.462	9.533

Absenteeism on CNA Turnover

It was hypothesized that absenteeism may predict CNA turnover. The model

explained 0% of the variance ($R^2=.000$; see Table 25). This result indicated 100% was

unexplained in this situation, which meant there were other predictors not in the model

that are influencing CNA turnover. H_03 failed to yield support with a nonsignificant

model consisting of workload in relationship to CNA turnover: $F(1, 329) = .021$, $p =.884$

(see Table 26). Therefore, the null hypothesis was retained indicating that absenteeism

was not a significant predictor of CNA turnover ($\beta = .502$, $p = .884$) (see Table 27). The

findings suggest that absenteeism does not have an impact on CNA turnover.

Table 25

Consequences of CNA Absenteeism

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.008	.000	-.003	29.903
$N = 439$				

Table 26

ANOVA: Consequences of CNA Absenteeism

Model		Sum of Squares	df	Mean Square	*F*	Sig.
1	Regression	18.922	1	18.922	.021	.884
	Residual	294194.299	329	894.208		
N = 439	Total	294213.221	330			

Table 27

Coefficients: Consequences of CNA Absenteeism

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	24.394	2.035		11.989	0.001	20.391	28.396
N = 439	Consequences of Absenteeism	0.502	3.452	0.008	0.145	0.884	-6.288	7.293

Number of Beds on CNA Turnover

It was hypothesized that number of beds may predict CNA turnover. The model explained 9.5% of the variance (R^2=.095; see Table 28). This result indicated 90.5% was being unexplained in this situation, which meant there were other predictors not in the model that were influencing CNA turnover. H_a3 yielded support of the model consisting of number of beds in relationship to CNA turnover: $F(1, 338) = 35.347$, $p < .001$ (see Table 29). Therefore, the null hypothesis was rejected and the alternative hypothesis accepted as the number of beds was significant predictor CNA turnover ($\beta = .244$, $p <$

.001) (see Table 30). The findings suggested that number of beds does have an impact on

CNA turnover.

Table 28

CNA Number of Beds

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.308	.095	0.092	28.217
N = 439				

Table 29

ANOVA: CNA Number of Beds

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28143.276	1	28143.276	35.3547	.001
	Residual	269113.462	338	796.194		
N = 439	Total	297256.738	339			

Table 30

Coefficients: CNA Number of Beds

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-2.359	4.731		-.499	.618	-11.664	6.947
N = 439	Number of beds	.244	.041	0.308	5.9545	.001	.163	.325

A chi-square analysis was used to examine the significance of relationship

between two categorical variables or attributes (Kent State Libraries, 2021). The chi-

square analysis examined the association between facility bed size (S 1-49 beds, M 50-99

beds, L 100-149 beds, XL 150-199 beds, XXL 200-249beds, and XXXL 250-299 beds)

and nursing staff turnover (RN, LVN, and CNA). Table 31 described the significance, if

any, between facility bed size (S, M, L, XL, XXL, XXXL) and nursing staff turnover

over a total of 18 chi-square statistical tests. If the *p* value was ≤.05 there were

significance between the variables. However, if the *p* value were >.05 there were no

significance between the variables. Below is a calculation of the results (see Table 31).

Table 31

Summary of Chi-Square Analysis for Nurse Staff Turnover on Number of Beds

Facility Size	RN Turnover	LVN Turnover	CNA Turnover
Small Facilities	$p = .962$	$p = .936$	$p = .469$
(S)	N = 439	N = 439	N = 439
1 - 49 beds	Not significant	Not significant	Not significant
Medium Facilities	$p = .229$	$p = .134$	$p = .552$
(M)	N = 439	N = 439	N = 439
50 - 99 beds	Not significant	Not significant	Not significant
Large Facilities	$p = .413$	$p = .016$	$p = .290$
(L)	N = 439	N = 439	N = 439
100 - 149 beds	Not significant	Significant	Not significant
X Large Facilities	$p = .024$	$p = .001$	$p = .004$
(XL)	N = 439	N = 439	N = 439
150 - 199 beds	Significant	Significant	Significant
XXL facilities	$p = .648$	$p = .079$	$p = .984$
(XXL)	N = 439	N = 439	N = 439
200 – 249	Not significant	Not significant	Not significant
XXXL facilities	< .001	< .001	$p = .004$
(XXXL)	N = 439	N = 439	N = 439
250 – 300	Significant	Significant	Significant

Chi-Square Summary Analysis for RN Turnover Based on Facility Size

A chi-square test of independence was performed to examine the association between facility bed size (S, M, L, XL, XXL, XXXL) and nursing staff turnover (RN). The association between these variables was statistically significant between XL facility bed size and RN turnover, $\chi2$ (13, N = 439) = 24.831, p = .024 (Table 31). In addition, there was a significant association between XXXL facility bed size and RN turnover, $\chi2$ (13, N = 439) = 72.552, $p < .001$. The remaining facility bed sizes that were not statistically significant at alpha < .05 in association with RN turnover were S, M, L, XXL.

Chi-Square Summary Analysis for LVN Turnover Based on Facility Size

A chi-square test of independence was performed to examine the association between facility bed size (S, M, L, XL, XXL, XXXL) and nursing staff turnover (LVN). The association between these variables was statistically significant between L facility bed size and LVN turnover, $\chi2$ (39, N = 439) = 99.124, $p < .016$ (Table 31). There was a significant association between XL facility bed size and LVN turnover, $\chi2$ (39, N = 439) = 220.413, $p < .001$. In addition, there was a significant association between XXXL facility bed size and LVN turnover, $\chi2$ (39, N = 439) = 220.413, $p < .001$. The remaining facility bed sizes that were not statistically significant at alpha < .05 in association with LVN turnover were S, M, and XXL.

Chi-Square Summary Analysis for CNA Turnover Based on Facility Size

A chi-square test of independence was performed to examine the association between facility bed size (S, M, L, XL, XXL, XXXL) and nursing staff turnover (CNA).

The association between these variables was statistically significant between XL facility bed size and CNA turnover, $\chi2$ (74, N = 439) = 110.806, p = .004 (Table 31). In addition, there was a significant association between XXXL facility bed size and CNA turnover, $\chi2$ (74, N = 439) = 110.323, p = .004. The remaining facility bed sizes that were not statistically significant at alpha < .05 in association with CNA turnover were S, M, L, and XXL.

Conclusion

Section 3 provided a comprehensive analysis of the three research questions concerning nursing turnover in nursing homes. The results include data for RNs, LVNs, and CNAs all of whom are direct care staff. The variables related to turnover are workload, absenteeism, and size of the facility which is indicated by the number of beds in the facility. Table 31 provided information related to size of facility and how this impacts turnover and the results indicated that the larger the facility, the greater the chance of staff turnover. Table 31 provides a summary of the results, which indicated that RNs were affected differently by the variables than LVNs and CNAs. RN turnover was significant for absenteeism and number of beds, LVN turnover was significant for number of beds, and CNA turnover was also significant for number of beds. Interpretation of the data, indications for social change, and recommendations for future research are presented in section 4.

Table 32

Summary of Regression Analysis Results for the Three Research Questions

	Regression Analysis			
	Workload	Absenteesim	Number of Beds	Summary
RQ 1 RN Turnover	Null met Alternative rejected	Null rejected Alternative accepted	Null rejected Alternative accepted	Workload was not a significant predictor of RN turnover. Absenteeism does have an impact on RN turnover. Number of beds does have an impact on RN turnover.
RQ 1 LVN Turnover	Null met Alternative rejected	Null met Alternative rejected	Null rejected Alternative accepted	Workload was not a significant predictor of LVN turnover. Absenteeism was not a significant predictor of LVN turnover. Number of beds does have an impact on LVN turnover.
RQ 3 CNA Turnover	Null met Alternative rejected	Null met Alternative rejected	Null rejected Alternative accepted	Workload was not a significant predictor of CNA turnover. Absenteeism was not a significant predictor of the relationship with CNA turnover. Number of beds does have an impact on CNA turnover.

Section 4: Application to Professional Practice and Implications for Social Change

Nursing staff turnover is a chronic problem within the nursing home sector, and high turnover rates among employees in long-term care settings creates challenges for supervisors and administrators and can negatively impact quality of care (Matthews et. al., 2018). There were two notable interventions mentioned in the literature that could increase retention: preceptorship of new graduates and leadership for group cohesion (Halter et al., 2017). These interventions coincide with the variables of the current study concerning nursing home size, workload, and absenteeism and could be used by nursing home administrators and nursing home organizations as a strategic guidance for staff retention. Nursing leaders and administrators who invest in the workforce by developing and continuing staff engagement will improve the supervisor-employee relationship and ultimately, staff retention (Quirk at al., 2018).

The current study addressed the reasons for staff turnover, which added to the literature by indicating specific issues that relate to retention. The purpose of this quantitative correlational study was to examine the association, if any, between nurse turnover rates and workload, absenteeism, and number of nursing home beds in Texas nursing homes. Section 4 includes an interpretation of the findings, limitations of the study, recommendations for further research, and implications for professional practice and social change.

Interpretation of Results

RQ1: Analysis for RN Turnover Results

Results from the multiple linear regression indicated that workload was not a significant predictor of RN turnover; therefore, H_o1 was met and the H_a1 was rejected ($p = .085$). Absenteeism had an impact on RN turnover; therefore, the H_o1 was rejected and H_a1 was accepted ($p = .029$). The number of beds had an impact on RN turnover; therefore, H_o1 was rejected and the H_a1 was accepted ($p < .001$). For RNs in Texas nursing homes, findings from the analysis indicated absenteeism and number of beds have an impact on RN turnover.

RQ2: Analysis for LVN Turnover Results

Results from the multiple linear regression indicated that workload was not a significant predictor of LVN turnover; therefore, H_o2 was met and H_a2 was rejected ($p = .178$). Absenteeism was not a significant predictor of LVN turnover; therefore, H_o2 was met and H_a2 was rejected ($p = .303$). Number of beds had an impact on LVN turnover; therefore, H_o2 was rejected and H_a2 was accepted indicating that number of beds had a significant impact on LVN turnover ($p < .001$). For LVNs in Texas, findings from the analysis indicated number of beds has an impact on LVN turnover.

RQ3: Analysis for CNA Turnover Results

Results from the multiple linear regression indicated that workload was not a significant predictor of CNA turnover; therefore, H_o3 was met and H_a3 was rejected ($p = .476$). Absenteeism was not a significant predictor of CNA turnover; therefore, H_o3 was met and H_a3 was rejected ($p = .884$). Number of beds had an impact on CNA turnover;

therefore, H_o3 was rejected and H_a3 was accepted. The findings suggested that number of beds has an impact on CNA turnover ($p < .001$) indicating that the number of beds in a nursing home has a significant impact on CNA turnover. For CNAs in Texas nursing homes, findings from the analysis indicated number of beds has an impact on CNA turnover.

Nurse absenteeism is a growing management concern in nursing homes in the state of Texas. The regression analysis in this study on absenteeism and nursing staff turnover indicated statistically significant results in the models. Mbombi et al. (2018) stated that absenteeism results in low staff morale, increased shortage of nurses, and increased workload, which can result in lower quality of care, increased infectious diseases, increased morbidity, increased mortality rates, and conflicts among nurses. Additionally, absenteeism can contribute to staffing instability, low morale, and nurses working outside their normal nurse–patient ratios, which can create an unstable working environment. Mbombi et al. indicate the effects of absenteeism on nurses who remain on duty when there are increased workloads, which results in a reduction in quality patient care. Absenteeism creates a burden for nurses who remain on duty because they have to cover for themselves and for colleagues who are absent (Mbombi et al., 2018). Although absenteeism may follow trends, seasons, and demographics, a heavy workload takes its toll on nurses' physical and mental health, and this contributes to nursing staff absenteeism (Ticharwa et al., 2019). In the current study of RNs, LVNs, and CNAs, the reasons for studying absenteeism and turnover were related to improving employee retention.

The size of Texas's nursing homes, specifically the total number of beds within the facilities, could contribute to differences in appropriate staffing, which may have an impact on nursing staff turnover. When the number of beds is high and staffing is low, nursing home staff experience fatigue and become discouraged and disillusioned (Blouin & Podjasek, 2019). The higher number of beds has an impact on increased nurse turnover; therefore, appropriate staffing is critical to ensure safe and effective care for patients (Shimp, 2017).

Findings to Theory

The theoretical framework for this study was Gittell's RC theory. This theory was applicable to this study because it is often used in health care settings for the purpose of improving relationships on a macro level to enhance patient care (Gittell et al., 2020). The theory is generally applied at an organizational level, and the framework is used among health care professionals in a team environment that focuses on communication and relationships (Hustoft et al., 2018).

Based on the RC theory, nursing home administrators and nurse managers could maximize the benefits of the theory as a way to promote positive relationships by creating cohesive work groups in the nursing home environment that may yield higher retention by addressing issues that include staffing ratios and reasons for absenteeism (Gittell et al., 2020). Nursing home retention demands in long-term care settings have become increasingly challenging, especially throughout the COVID-19 pandemic that posed a risk for patient care. Gittell et al. (2020) affirmed that clinical leaders can increase the

expectation of positive outcomes for staff and patients by implementing interventions to strengthen relational coordination.

Summary of Key Findings and Interpretation

No Significant Results

Results from regression analysis indicated that not all turnover among the three nurse types was associated with workload, absenteeism, and number of beds. The results confirmed that RN workload ($\beta = .095$, $p = .085$) was not a significant predictor of RN turnover. LVN workload ($\beta = 2.237$, $p = .178$) was not a significant predictor of LVN turnover, and LVN absenteeism ($\beta = 1.651$, $p = .303$) was not a significant predictor of LVN turnover. Lastly, CNA workload ($\beta = .039$, $p = .476$) was not a significant predictor of CNA turnover, and CNA absenteeism ($\beta = .502$, $p = .884$) was not a significant predictor of CNA turnover. These results warranted acceptance of the null hypotheses. Creswell and Creswell (2018) explained that when the null is deemed met, there is no relationship or significant difference between groups on a variable. In the current study, there were no significant relationships between RNs, LVNs, and CNAs on workload and absenteeism.

Significant Results

Results from regression analysis indicated that that there was a statistically significant association between RN, LVN, and CNA workload, absenteeism, and number of beds and nursing staff turnover. The results confirmed that RN absenteeism ($\beta = .642$, $p = .029$) was a significant predictor of RN turnover, and RN number of beds ($\beta = .017$, $p < .001$) was a significant predictor of RN turnover. LVN number of beds ($\beta = .101$, $p <$

.001) was a significant predictor of LVN turnover. Lastly, CNA number of beds (β = .244, $p < .001$) was a significant predictor CNA turnover. These results warranted rejection of the null hypotheses. In each case, the results were statistically significant (see Creswell & Creswell, 2018).

Limitations of the Study

Background issues are what social scientists describe as scope and limitations of the study (Akanle et al., 2020). This study included secondary data rather than primary data, which may have influenced the results. The LTCNSS secondary data contained an abundant amount of information that was challenging to sort in relation to the variables addressed in the study. Additionally, the secondary data were assumed to be accurate for the purposes of this study. The secondary data were limited to nursing homes who participated in the study; therefore, further studies should seek to include a larger sample size. The results of this study only apply to Texas nursing homes and may not be generalizable to other states.

Recommendations

The results of this study demonstrated that absenteeism and number of beds could be used as predictors of nursing staff turnover; however, further exploration of nursing home staff burnout may also add value and understanding of turnover intention. Extending the scope of nursing homes outside the state of Texas may provide a statistically adequate sample when investigating the relationship of nursing staff turnover and workload, absenteeism, and number of beds. Expansion of this study to states with a high number of nursing homes such as California, Florida, and New York could reduce

any bias due to the addition of different regions and populations. The current study

addressed only one sector of health care: nursing homes. Other levels of care such as

acute hospitals, long-term acute care hospitals, and subacute units could be included in

future research.

Professional Practice

Health care administrators are faced with finding ways to improve organizational

quality, which includes employee retention, satisfaction, education, and other

interventions when required (Konetzka, 2020). Quality issues related to absenteeism,

numbers of beds, and nursing staff turnover can persist if not properly mediated (Denny-

Brown et al., 2020; Laes-Kushner, 2018; Temkin-Greener et al., 2020). The results from

the current study may provide a guideline for administration and clinical leadership when

making changes to existing retention strategies. Additionally, knowing that RN, LVN,

and CNA nursing staff are more likely to turn over when absenteeism numbers are up or

the number of beds assigned is unmanageable, organizations may be able to design more

effective retention practices to keep nursing staff inspired, engaged, and thriving.

For administrators, knowing that absenteeism and number of beds predicts RN,

LVN, and CNA turnover, nursing staff retention should be considered an important factor

at the start of the hiring process. Once nurses are bedside, leadership could consider on-

the-floor routine nursing staff satisfaction checks to listen to their needs in real time and

reinforce their level of support. Zhang et al. (2020) stated that attention needs to be given

to the working conditions and staff welfare for the purpose of improving job satisfaction,

which could reduce turnover intention.

Social Change

The results of this study provided implications for professional practice and positive social change relevant to the credibility, reliability, and statistical significance between absenteeism and number of beds and nursing home staff turnover. Findings from this study could contribute to positive social change for administrators by creating a work environment that supports nursing staff and that not only listens to nursing staff but values them. When this value is achieved, it is a win-win for employers because they are able to retain nursing staff and reduce turnover. When nurses are supported by administration, it creates a healthy work environment and improves communication and appreciation between administrators and staff. This study lay the foundation for rethinking and redesigning robust retention strategies to promote higher job satisfaction, stronger relationships between teams, and healthier work environments for RNs, LVNs, and CNAs. Doing so enables nurses to provide quality care (Johansen et al., 2020).

Conclusion

This study addressed the relationship between nursing staff turnover rates and workload, absenteeism, and number of beds in Texas nursing homes. RNs, LVNs and CNAs are vital staff members in nursing homes because they provide the most direct care for the needs of older patients. The high rate of nursing home staff turnover the quality of their jobs remains persistently low, which impedes recruitment and retention efforts across the LTC industry; therefore, it is important for administrators and nursing managers to know strategies to mitigate and eliminate turnover and improve retention (Scales, 2021).

High turnover rates of any kind (voluntary or involuntary) can damage organizational performance, and turnover is consistently linked to poor care quality and increased labor costs for training, recruitment, hiring, and productivity loss (Lord et al., 2018; White et al., 2020). Results from this study could represent an opportunity for improving organizations' financial considerations by reducing nursing turnover and strengthening patient care.

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Appendix A: Request for Data Invitation

<p style="text-align:center">Texas Center for Nursing Workforce Studies</p>

<p style="text-align:center">Policy and Procedures: Requests for Raw Data</p>

Purpose of the Policy

This policy serves to standardize the Texas Center for Nursing Workforce Studies'

(TCNWS) response to requests for raw data collected by the TCNWS. The policy seeks

to balance the competing considerations of: 1) promises of confidentiality to survey

participants; 2) the need to reserve data until TCNWS has completed its analyses and

reporting commitments; and 3) our desire to see the data used to its full capacity for the

benefit of nursing and nursing research.

There are two types of data that the Texas Center for Nursing Workforce Studies

(TCNWS) receives:

1. **Data received from health care facilities (Health & Safety Code, 104.042).**

Data and information received from health care facilities which contains specific patient

identifying information is confidential and may not be released unless the specific patient

identifying information is removed:

Health & Safety Code 104.042(e) Data received by the department under this section

containing information identifying specific patients is confidential, is not subject to

disclosure under Chapter 552, Government Code<u>, and may not be released unless the</u>

<u>information identifying the patient is removed</u>. This subsection does not authorize the

release of information that is confidential under Chapter 108.

2. **Data received from health professional licensing agencies (Health & Safety Code 104.0421, 105.003).**

This data has a similar restriction regarding specific patient and health care facility identifiers: Health & Safety Code 105.003(e): Data received under this section by TCNWS established under Section 105.002 that contains information identifying specific patients or health care facilities is confidential, is not subject to disclosure under Chapter 552, Government Code, and <u>may not be released unless all identifying information is removed</u>.

The health care professionals' information is largely public data. If it is publicly available information, there are no restrictions on its dissemination and use.

Policy and Procedure for Requesting Data

In all cases, the TCNWS must protect confidentiality of information linked to the identity of research participants, either individuals or health care organizations. This includes overt identifiers such as names and addresses as well as information that can be used to deduce the identity of a responding individual or agency, which may include micro-geographic data.

Initials: _____

Policy and Procedure for Requesting Data (con't.)

<u>Human Subject Research That Involves Department of State Health Services'</u>

<u>(DSHS) or Texas Center for Nursing Workforce Studies' (TCNWS) Clients or Data</u>

It is the policy (PA-4002) of the Department of State Health Services' (DSHS) that all

proposed human subject research which would involve DSHS' and TCNWS' clients or

data that are in the possession of DSHS, regardless of the research funding source, will be

reviewed by an Institutional Review Board (IRB) that is either sponsored or approved by

DSHS. This policy is inclusive of research proposed by private or public entities,

including research proposed by a DSHS program area or entities contracted by DSHS or

Health and Human Services Commission (HHSC). Prior to submission to a DSHS IRB,

all proposed human subject research must first be reviewed by the Director of TCNWS or

a designated representative of TCNWS. The authorized representative will conduct an

initial scientific review of the proposal's validity, ensure that the submission meets all the

legal requirements for TCNWS to release the requested data, that the data are actually in

the possession of DSHS, and that TCNWS has sufficient resources to meet the time

commitments of the request without compromising agency and program functions. When

appropriate, the TCNWS representative will consult with the program attorney.

<u>Data Analysis Independent of the Texas Center for Nursing Workforce Studies</u>

<u>(TCNWS)</u>

Agencies, institutions, groups or individuals requesting data from the TCNWS, with the

intention of performing analyses independent of the Center, must complete a Data

Request Form and agree to the guidelines set forth in a Letter of Agreement (see attached

templates). After the request is received and reviewed, an estimate of cost, if applicable,

will be generated. TCNWS will send an invoice and upon receipt of payment will send

the data. Students must submit requests with a faculty sponsor who agrees to oversee

analysis and storage of the data.

Presentations, reports, and publications based on analyses conducted independent of the

TCNWS must be accompanied by the following disclosure statement: *The data for this*

analysis were provided by the Texas Center for Nursing Workforce Studies. TCNWS did

not take part in, nor endorse, any data analysis or interpretation set forth herein.

Data Analysis in Conjunction with the TCNWS

Agencies, institutions, groups or individuals with whom the TCNWS collaborates for

specific analysis of data will be provided with a Memorandum of Understanding,

outlining the role of the TCNWS, and the TCNWS' active involvement in the analysis

and interpretation of the data. In addition, the Texas Center for Nursing Workforce

Studies reserves the right to review any reports, publications, or presentation materials

that evolve as products of collaborative arrangements, and to make recommendations for

revision if applicable.

Initials: _____

Data Request Form

Please attach the following form to the signed Data Use Letter of Agreement. Be very specific, providing as much detail as possible. Attach additional sheets as necessary.

Requester Name:

Requester Institution:

Data file requested:

Research Question, Purpose or Hypothesis:

Define Analysis Subset or Group: Example – The number of graduates from initial RN licensure programs in a given region.

Proposed Analysis: Example – Regression of nurses' hours worked on age, education, and work setting. Separate models to be run for male and female nurses.

Role of the Texas Center for Nursing Workforce Studies in the analysis:

Format and Method of Delivery Requested: Examples – Excel, SPSS, comma-delimited file; sent by email, sent by U.S. mail on CD

Data Use Letter of Agreement

In order for the Texas Center for Nursing Workforce Studies (TCNWS) to make data

available to _____, the person/agency/institution agrees to the

following stipulations and conditions related to the processing and use of such data:

1. The user has read and agrees to the data use policy approved by the TCNWS'

    Advisory Committee.

2. Data provided by the TCNWS to the party (parties) named below shall not be

    sold.

3. The user agrees to share the data only with the person/agency/institution as

    specified in this letter of agreement and with no one else.

4. The user will secure the data in a place where it is not accessible to others.

5. The user will maintain confidentiality of the identity of individual

    person/agency/institution in the use of the data and reporting of findings. Findings

    will be reported in aggregate form and not by individuals/agencies/institutions.

6. The Texas Center for Nursing Workforce Studies reserves the right to decline

    requests which do not uphold the integrity of the data as determined by the

    Center.

7. Data requests will be processed in the order in which they are received.

    Turnaround time will be determined by the TCNWS upon receipt of requests.

    TCNWS reserves the right to process requests in order of priority as defined by

    the Texas Center for Nursing Workforce Studies.

8. The acquisition of data does not, in any way, constitute endorsement by the TCNWS. The following disclosure statement must be included as a part of all written and oral reports, publications, and presentations:

The data for this analysis were provided by the Texas Center for Nursing Workforce Studies (TCNWS). TCNWS did not take part in, nor endorse, any data analysis or interpretation set forth herein.

It is agreed that the person/agency/institution acquiring the data specified herein will follow the stipulations and conditions stated above and will submit full payment for reimbursement of actual costs of supplying data, if applicable, within 30 days of invoice date.

Requester Name:

Requester Title:

Institution Name:

Faculty Sponsor Name (if applicable):

Signed: _____   Date: _____

Appendix B: Approval for Use of Data

Hi Justin,

There was definitely a delay but it is ready! I've also attached the survey itself. Thanks for your patience. Let me know if you need it in a different format. Let me know if you have questions!

Happy Holidays!

Best,

Hi Pam,

Happy Holidays! Hope this email finds you well this season.

Wanted to touch base and see if the data is available? I'm extremely close to completing section 2 and starting section 3 which is the statistical section where I'll be using the data. May I kindly request the data needed to start analyzing?

Thank you again =)