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ABSTRACT

RELATIONSHIP BETWEEN SHIFT HOURS WORKED
(12 VERSUS 8), WORKLOAD, AND NURSES'
BURNOUT: A STUDY ACROSS ACUTE
CARE UNITS IN A COMMUNITY
HOSPITAL

by

Liliane Nyamuziga

Chair: Jochebed Bea Ade-Oshifogun

ABSTRACT OF GRADUATE STUDENT PROJECT

Andrews University

School of Health Professions

Title: RELATIONSHIP BETWEEN SHIFT HOURS WORKED (12 VERSUS 8),
WORKLOAD, AND NURSES' BURNOUT: A STUDY ACROSS
ACUTE CARE UNITS IN A COMMUNITY HOSPITAL

Name of researcher: Liliane Nyamuziga

Name and degree of faculty chair: Bea Ade-Oshifogun, PhD, RN-BC, CNE

Date completed: July 2018

Nurses are expected to provide quality care to patients, and work demands in the health care system are increasing. An increased turnover in nursing staff was observed in a southwest Michigan community hospital, and the possibility of burnout contributing to this turnout was proposed. The purpose of this scholarly project was to evaluate the significance and level of perceived burnout in nurses who work the 12-hour shift compared to those who work the eight-hour shift, to investigate the relationship between nurse-to-patient ratios and burnout, and to compare burnout levels between nurses working day versus night shifts. This project utilized a cross-sectional approach with convenience sampling of nurses from the hospital acute care units. After receiving approval from the Andrews University IRB, the project manager obtained survey data

from nurses using the MBI questionnaire between August 2017 and March 2018. The survey was comprised of 22 questions distributed via online and paper format. Three domains of the MBI were tested: emotional exhaustion, depersonalization, and decreased personal achievement. Data analysis was completed using ANOVA and MANOVA statistics ($p = 0.5$).

A total of 118 nurses participated in the survey. Ninety-seven nurses worked eight-hour shifts, and 94 nurses worked 12-hour shifts. Forty-eight nurses worked night shifts, and 61 nurses had a heavy patient load (5-8 patients per shift). The majority of nurses (58) had between one and five years of work experience. Though mean scores were very close to the burnout threshold, none of the groups' scores were significant for burnout. However, a significant difference was observed in the domain of emotional exhaustion between day shift and night shift nurses, $F_{(1, 116)} = 3.93, p = .05$. Nurses who had a higher patient load (5-8 patients) also conveyed higher but not significant levels of emotional exhaustion. Though MBI scores did not reveal burnout in nurses working in this southwest Michigan hospital, emotional exhaustion was a significant factor with day shift nurses. Higher patient loads should be further assessed for their potential impact on nurses' work and burnout.

Andrews University
School of Health Professions

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BURNOUT: A STUDY ACROSS ACUTE
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A Scholarly Project
Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice

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APPROVAL BY THE COMMITTEE:

Chair: Jochebed Bea Ade-Oshifogun

Dean, School of Health Professions
Emmanuel Rudatsikira

Member: Hibanje Chisonga

Date approved

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LIST OF ABBREVIATIONS

COR	Conservation of Resource
DNP	Doctor of Nursing Practice
DP	Depersonalization
EE	Emotional Exhaustion
IRB	Institutional Review Board
JD-R	Job Demands-Resources
MANOVA	Multivariate Analysis of Variance
MBI	Maslach Burnout Inventory
PA	Personal Achievement
RN	Registered Nurse

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CHAPTER 1

INTRODUCTION

Background and Overview of Nurse Burnout

Nurses constitute an important component of the health-care system. They represent the largest subfield of employed health-care providers in the United States. According to the U.S. Bureau of Labor Statistics (2016), the number of employed registered nurses (RNs) had reached 2.8 million by 2014, an estimated 1.708 million of whom were working in acute care settings. Hence, nurses are a key players in the provision of quality care to patients. However, work demands in the health-care system are increasing, including long working hours, increased workload, and unrealistic nurse-to-patient ratios, all of which can lead to burnout.

Burnout is a long-standing issue among health-care professionals, caused by repetitive exposure to stress associated with job demands and resulting in compromised emotional status as evidenced by inadequate time to rejuvenate strength (Chuang, Tseng, Lin, Lin, & Chen, 2016). The nursing profession requires a commitment to providing patient care at the sacrifice of physical, emotional, and mental energy (see Figure 1).

Nurses experience a high level of stress due to factors such emotionally taxing work, heavy workloads, and physical labor that are inherent in the job of the nurse (Jennings, 2008). Working in traumatic situations and with acutely ill patients, besides being emotionally demanding on its own, often leads to conflicting issues with treatment

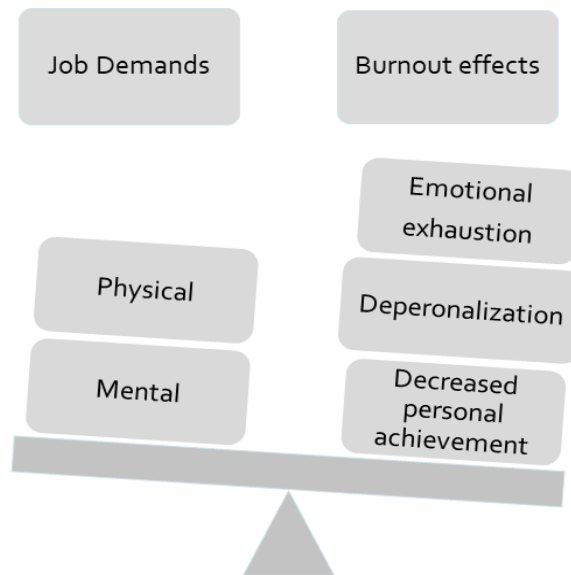


Figure 1. The concept of nurse burnout.

care: circumstances in which nurses face the dilemma of pursuing therapy goals that are perhaps in opposition to their personal values. This leads to moral distress. Taking care of ill patients and dealing with anxious family members also contribute to moral distress (Rushton, Batcheller, Schroeder, & Donohue, 2015).

It is also common for nurses to express feelings of being overwhelmed by workload—multiple tasks required to be accomplished in relatively short period of time (Divinakumar, Pookala, & Chandra Das, 2014). Example of heavy nurse-to-patient workload is one nurse assigned between five to eight patients per eight-hour or 12-hour shifts.

Nurse burnout is often triggered by a perception of emotional and excessive workload, alongside physical exhaustion. While the components of burnout include emotional exhaustion, depersonalization, and decreased personal achievement, they are related to increased levels of physical exhaustion and acute/chronic fatigue (Barker &

Nussbaum, 2011). Extant research comparing nurses working fewer than 40 hours per week and those working more than 40 hours per week has shown that those who work longer weekly hours are at higher risk for adverse physical effects than their counterparts. These effects included musculoskeletal health problems (Bea & Fabry, 2013).

Although many nurses may manifest enthusiasm about the nursing career at the entry level, they may have some erroneous perceptions as to what the nursing job entails. Some nurses may view nursing as compassionate care that goes hand-in-hand with positive patient outcomes and job satisfaction. Similarly, nurses may view their connection with patients and their families as a caring presence during a difficult illness trajectory without recognizing how this can lead to compassion fatigue and burnout (Aycock & Boyle, 2009; Walton & Alvarez, 2010, as cited in Boyle, 2011).

Nurse burnout has significant implications for both nurses and their patients. Increased stress among critical care nurses can lead to decreased interest in job performance and, subsequently, a desire to quit their job. Geiger-Brown, Trinkoff, and Rogers (2011) concluded that work demands impact nurses' sleep pattern. A burnout situation results in persistent mental and physical exhaustion that impedes interpersonal and caring relationships, hence resulting in a lack of engagement (Cocker & Joss, 2016).

A research study on nurse burnout, nurse staffing, and health-care associated infection, in which researchers utilized data collected from Pennsylvania hospital nurses, revealed a significant link between nurse-to-patient ratio and hospital acquired surgical site infections and urinary tract infections. Conversely, in the wards where fewer nurses reported perceived burnout, fewer surgical site infections were noted, and this resulted in hospital savings of an estimated \$68 million (Cimiotti, Aiken, Sloane, & Wu, 2012). This

means that the more patients assigned to nurses, the more likely nurses will be overwhelmed by required tasks. Hence, poor patient care outcomes result. The effects of long hours worked were also noted in Rogers, Hwang, Scott, & Aiken (2004) and Stone et al., (2007) as cited in (Bae & Yoon, 2014), and include “adverse patient outcomes such as catheter-associated urinary tract infections, decubitus ulcers, and medical errors” (p. 1639).

Statement of the Problem

Increasing health-care needs and an unprecedented workload have been researched as factors that create emotional distress, compassion fatigue, and burnout among nurses. Nurses are required to provide high-level patient care, sometimes with an impracticable ratio of nurses to patients, while working long shifts.

Though long shifts, such as the 12-hour shift, have been embraced by many health-care organizations due to institution-specific goals, this practice has not been confirmed to produce a positive impact on patient care outcomes (Stimpfel, Sloane, & Aiken, 2012). Therefore, the question remains as to whether nurses should work longer or shorter hours to perform well and achieve satisfactory outcomes. Existing research studies concerning burnout have shown that nurses exhibit behavioral changes by the end of 12-hour shifts, manifest a lack of enthusiasm to engage in daily work, confine themselves in emotional isolation, and experience physical and mental exhaustion characterized by resigning from work, missing work, and/or changing work departments or positions. Research has shown that nurses who work long shift hours, such as the 12-hour shift, are at risk of experiencing burnout, depersonalization, and limited personal performance (Lee et al., 2015).

Though many studies have been conducted on nurses' workload and shift length and their effects on patient satisfaction, medication errors, sleep deprivation, and nurses' well-being, limited research has assessed the impact of the number of hours that nurses put into their daily jobs in acute care settings and how their physical and mental health might be positively or negatively affected.

Moreover, nurse-to-patient workload has been researched to impact nurses' outcomes, such as work dissatisfaction, nurse burnout, and nurse turnover. This is particularly due to inadequate nurse staffing or nurse shortage (Nantusupawat, Kunaviktikul, Nantsupawat, & Wichaikhum, 2017). More studies are needed to determine the linkage between nurse workload and nurse burnout. No previous studies researched the implication of the type of shift, day and night shifts and nurse burnout. Thus, the purpose of this project was to investigate the impact of workload and day/night shifts and nurse burnout.

Do extended hours worked affect nurses' self-esteem, and to what extent are they emotionally and physically affected? Hence, the present project addresses the correlation between eight-hour shifts and 12-hour shifts and how both impact nurses' physical, emotional, and mental health. Does workload affect nurses' physical and emotional health? And do nurses who work day shift affected emotionally and physically by their shift type compared to their counterpart night shifters?

Significance of the Project

Health-care establishments are striving to become magnet institutions and achieve satisfactory patient outcomes. Many factors are involved in reaching these goals. The incorporation of Hospital Consumer Assessment of Healthcare Providers and Services

(HCAHPS) scores into the inpatient reimbursement criteria system has led healthcare institutions to redefine their strategies in dealing with patients, who are considered as customers. Therefore, healthcare institutions are thriving to increase patient satisfaction through surveys completed based upon the outcomes of patient care in terms of patient satisfaction. One of the components of the HCAHPS survey encompassing patient experience is communication with nurses, which is enhanced via nursing staff daily huddles and discussed during multidisciplinary rounds. The goal of HCAHPS surveys is to improve these scores. The Center for Medicare and Medicaid Services has emphasized its objective of reimbursement based on hospital achievement of satisfactory patient satisfaction scores (Health Leaders Media, 2016).

The key to achieving realistic outcomes is to know and understand who is at the center of health-care institutions' success. Nurses are integral to the multidisciplinary team's progress toward goals. They are involved in patient care 24 hours per day, seven days per week. Nurses interact with patients and families and get to know patients' needs from admission to discharge from the hospital. Not only do nurses give medications, but they also listen to patients and assess their needs, which can range from assistance getting out of bed and ambulating to a shoulder to cry on when health is declining. A World Health Organization (1998) publication suggests, "As health is not merely the absence of disease or infirmity but a state of complete physical, mental and social well-being, a healthy working environment is one in which there is not only an absence of harmful conditions but an abundance of health-promoting ones" (p. 1). Therefore, nurses are central to patients' ultimate goals of healing and being discharged from the hospital, and consequently, to the institution receiving positive feedback on patient care quality.

However, these outcomes are not achievable unless nurses' well-being is accounted for. Nurses will not perform well at bedside if they are emotionally exhausted, they will not listen to patients' needs if their minds are not fully present, and they will not provide adequate care if they become ill due to overwork. Hence, the aims of the current project—to evaluate the impact of nurses' performance conditions, which include nurse-to-patient ratio (or workload) and shifts and hours worked, on nurse burnout as evidenced by nurses perceived emotional exhaustion, depersonalization and decreased personal achievement—are essential to patient care outcomes and aims of health-care institutions.

Purpose of the Project and Research Questions

The purpose of this project was to evaluate the significance and level of perceived burnout as manifested by emotional exhaustion, depersonalization, and decreased personal achievement in nurses who work the 12-hour shift compared to those who work the eight-hour shift. This project also analyzed the factors of nurse-to-patient ratio and working day as opposed to night shifts and how these contribute to nurse burnout in a community hospital.

The research questions driving the present study are:

- Is there a significant difference in burnout levels between nurses working the 12-hour and eight-hour shifts (night or day)?
- Is there a significant difference in burnout levels between shifts worked (night or day)?
- Is there a significant difference in burnout levels based on nurse-to-patient ratio (1:4 or fewer versus 1:5 or more)?

CHAPTER 2

LITERATURE REVIEW

A literature review of studies published between 2007 and 2018 was conducted using the following electronic databases: Cumulative Index of Nursing and Allied Health, Medline, EBSCO HOST, Cochrane Database of Systematic Reviews, Index to Theses and Dissertations, and Google Scholar. The search terms included: “burnout,” “nurse burnout,” “acute care nursing and burnout,” “workload,” and “shift patterns and nurses.” Current evidence shows that there is a link between a relative imbalance in workload and the amount of time nurses spend to accomplish nursing tasks in relation to patient care. More research is needed to suggest theories that can guide future studies on shift patterns and workload as contributory factors to nurse burnout.

Burnout

The genesis of the burnout concept is rooted in social and cultural work environments that have been a subject of research since the 1960s. Initially, burnout was discussed primarily in the domains of human services. Viewed as threat to occupational professionals, burnout was portrayed as an expression of emotions and an imbalance between high work demands versus employee resources (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Bakker & Nussbaum, 2011). The more work requirements

increased, the more energy depletion was creating an unequal demand, leading to burnout (Schaufeli, Taris, & Van Rhenen, 2008).

The term *burnout* was first used in the 1970s by the American psychologist Herbert Freudenberg to describe unwavering stress related to a work environment in which employees are called to serve in a high-demand role. He described the main symptoms of job burnout as emotional exhaustion characterized by a mental separation from work related responsibilities, decreased work performance, viewing job tasks as a burden, and finding it hard to accomplish work assignments (Institute for Quality and Efficiency in Health Care, 2017). Burnout syndrome has also been described as a prolonged mental status of helplessness, a lack of motivation to carry out daily work routines, and an expression of overwhelming feelings, such as emotional and physical exhaustion. These feelings are a result of sustained stress related to uncontrolled work demands. A burnout situation results in persistent mental and physical exhaustion that impedes interpersonal and caring relationships and produces a lack of engagement (Cocker & Joss, 2016).

In this project, burnout will be defined as perceived feelings of emotional exhaustion, depersonalization, and decreased personal achievement as evidenced by nurses' personal responses on the Maslach Burnout Inventory (MBI).

Emotional Exhaustion

In regards to the study of job-related burnout, emotional exhaustion is defined as a state of mind in which one feels emotionally drained and incapable of putting in any additional effort in the work environment (Maslach & Goldberg, 1998; Maslach, Schaufeli, & Leiter, 2001).

Depersonalization

In the MBI, depersonalization is described as a response to the sustained mental status of emotional exhaustion (Maslach, Jackson, & Leiter, 2016). In this project, depersonalization is a dependent variable related to the perceived feeling of a lack of engagement toward work. Depersonalization, later re-conceptualized as cynicism, is an attempt to distance one's self from the job and clients by actively ignoring the job and client's unique and engaging qualities.

Decreased Personal Achievement

In the MBI, decreased personal achievement is defined as a coping mechanism in response to high levels of emotional exhaustion. Reduced personal achievement is a decrease in one's perceived professional thrive for accomplishment.

Burnout in the Nursing Field

Health-care professionals play a significant role in an evolving health-care system which focuses on patient care improvement, cost reduction, and affordable health care. However, the key team players in keeping up with the changes in health-care institutions are facing burnout (Dyrbye et al., 2017). Bakker, Le Blanc, and Schaufeli (2005) have noted that a shortage of nurses in the United States is estimated to reach one million by the year 2022, and nursing is projected to continue to be a high demand profession, impacting nurses' productivity and patient health outcomes. Moss, Good, Gozal, Kleinpell, and Sessler (2016) have revealed that burnout syndrome is related to the nursing shortage and increased workload.

The concept of burnout entails a long-standing status of decreased motivation to perform tasks and emotional and physical exhaustion resulting from the effects of work-related stressors. The nursing profession revolves around stressful incidents, including contact with patients at their lowest and most traumatic health events and dealing with patients' families, sometimes in the moments of end-of-life care (Craigie et al., 2016).

Stress is characterized by the aftermath of these challenging work-related situations, which produce impaired critical judgment, generalized malaise resulting from decreased physical strength, extreme tiredness from lack of rejuvenating breaks during shift hours, cynicism resulting from emotional isolation due to low self-esteem, and a failure to attain personal goals. Constant exposure to high work demands can trigger nurses to feel disengaged, hopeless, isolated, depressed, and detached from their surroundings (Segal, Smith, Robinson, & Segal, 2018). The longer nurses are exposed to the effects of stress, the higher the risk that they will exhibit physical and emotional symptoms of burnout (see Figure 2).

The underlying impact on nurses of overwhelming tasks due a shortage of staff is perceived fatigue. One of the behaviors nurses exhibit as a result of burnout is calling in sick. Absenteeism not only affects patient outcomes, but also causes absent nurses to become a burden to other nurses who consequently face a higher workload; this causes burnout among the whole team (Garrett, 2008). Similarly, the American Hospital Association has recognized the effects of the nursing shortage as impacting nurses' work environment, their dissatisfaction due to burnout, and how they view their nursing careers. One of the impacts of this shortage is that, by 2020, the work demand will not be proportional to the nursing staff, despite a six percent increase in nurses joining the

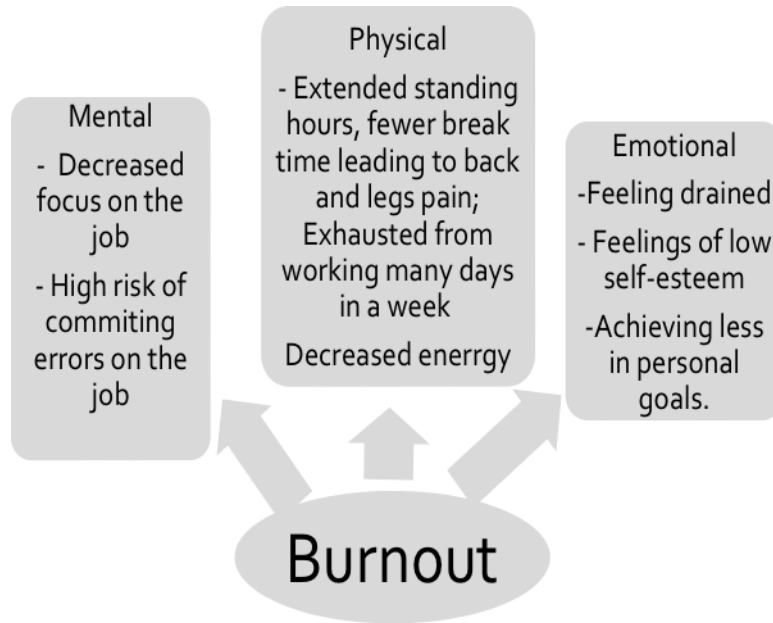


Figure 2. Symptoms of burnout.

profession by the year 2020 (Garrett, 2008). While many nurses embrace their careers with enthusiasm, research has shown that nurse turnover is substantial; one in four nurses would consider quitting the profession should conditions permit (Sturgeon, 2008).

Acute Care Nursing

Acute care settings are fast-paced work environments in which employees are prone to challenging and stressful situations. The acute care nursing environment includes the intensive care unit, medical surgical care unit, operating room, and oncology care units. These units harbor acute and critically ill patients who need extensive nursing support. In some circumstances, patient death is imminent, which produces challenging moments for caregivers. Hence, nurses in acute care settings exhibit high levels of burnout syndrome and even posttraumatic stress disorder (Maldonado, 2016). Particularly among nurses who work night shifts in acute care settings, burnout was reported to affect

between 25% and 33% of nurses (Moss et al., 2016) found that 73% of critical care nurses were experiencing the burnout symptom of emotional exhaustion, 60% had decreased personal achievement, and 48% displayed depersonalization.

While substantive research has addressed the causes of nurse burnout, fewer studies have considered whether there is a correlation between burnout symptoms and the number of hours worked by nurses in stressful acute care settings. Further, is it possible that those stress characteristics are triggered by an unrealistic workload in terms of short staffing? Therefore, this study to address how hours worked—specifically eight- versus 12-hour shifts and day versus night shifts—and nurse workload are correlated with nurse burnout in acute care settings is of paramount importance.

Shift Patterns in Acute Care Settings and Their Impact on Nurses' Performance

Unlike other professions, nursing care is a 24-hour job requiring shift coverage that exceeds commonly held office hours (Trinkoff et al., 2011). In order to provide continuous patient care, nurses rotate shifts: some work eight-hour shifts while others work 12-hour shifts.

Ball et al. (2017) conducted a descriptive cross-sectional study in 78 acute care hospitals in England to analyze the relationship between length of shift, number of shifts worked, and nurses' self-reported effects. The results revealed that a higher percentage of nurses working eight hours or less self-reported providing high quality patient care, whereas those working 12 hours or more were more likely to self-report providing poor patient care; in this group, the odds ratio equaled 1.64 and there was a clearance differential of 95%, 1.18-228, with $p = 0.003$ (Ball et al., 2017). Gyllesten, Andersson,

and Muller (2017) also evaluated the positive impacts of shorter shift hours as contributors to health and wellness, including decreased levels of stress, restored quality of sleep, decreased memory issues, and fatigue reduction.

Griffiths et al. (2014) conducted a cross-sectional research study in 12 European countries and including 488 hospitals, which aimed to find a correlation between perceived quality of care, patient safety, and nurses' shift length including overtime. The cross-sectional survey comprised 31,627 nurses working in medical surgical units. An estimated 50% of nurses reported working less than eight hours per day and 15% reported working over 12 hours. Nurses who worked the 12-hour shift reported significantly poor patient safety, with an odds ratio of 1.41, and a confidence interval between 1.13 and 1.76. Those who worked overtime revealed an odds ratio of 1.67 and a confidence interval of 1.51 and 1.86; these results indicate a correlation between overtime hours and unsatisfactory patient care. The findings of the study showed that nurses reported shifts longer than 12 hours and overtime work to be related to lower quality of patient care. Conversely, working eight-hour shifts was linked to an increased rate of patient care not completed by the end of the shift (Griffiths et al., 2014). Estry-Behar and Van der Heijden (2012) also found that shift length is related to the effects of burnout. The authors discovered that nurses have to accomplish an equal number of nursing tasks during an eight- or 12-hour-shift, which implies that the length of shift is critical when considering the workload factor.

Lin, Liao, Chen, and Fan (2014) conducted a research study on the impact of shift work on nurses in Taiwan, and the correlation between nurses' quality of sleep and their perceived health. The goal of the study was to evaluate the effectiveness of an

implementation of various work shifts, and its results revealed overall job related stress among participants. The authors identified a relationship between shift work and work related stress, and found that participants reported stress regardless of the shift work. However, the quality of sleep was reported as self-perceived result related to work related stress.

Nurse-to-Patient Ratio and Burnout

While nurses may prefer one schedule over another, there are many factors that might jeopardize their work performance, impede their thinking capacity, and affect their overall health. While shift length is significant, other factors that explain the effects of burnout include increased nurse-to-patient ratios. The results of a cross-sectional study conducted on nurse-to-patient ratios and patient mortality, failure to rescue among surgical patients, and factors related to nurse retention revealed that whenever a patient was added to the nurse workload, the risk of failure to rescue a patient and patient mortality increased by seven percent. The chances of 30-day hospital mortality were found to increase by seven percent as well. Nurses with an additional patient on their assignment also experienced 23% more burnout and a 15% increase in job dissatisfaction (Garrett, 2008). Therefore, extant research has suggested that one of the primary contributing factors to nurse burnout is workload, which can be linked to the time nurses have to complete their tasks and the number of patients they are expected to care for. If nurses have to accomplish more with limited time, they require mental focus and physical strength; otherwise, nurses will experience feelings of emotional exhaustion (Garrett, 2008).

Similarly, Aiken et al. (2002) noted in their longitudinal study of 168 hospitals that nurses' perceptions of burnout were linked to higher nurse-to-patient ratios, especially when the ratio was 1:8, in comparison to 1:4. This increased ratio was found to increase emotional burnout levels by 23%. Interestingly, these findings are also supported by Nantsupawat, Nantsupawat, Kulnayiktikul, and McHugh (2015) in their cross-sectional study conducted across 92 hospitals, which addressed nurse staffing issues related job satisfaction, emotional exhaustion, and intention to leave. Findings from 1,412 nurses who participated revealed that each time nurses were assigned an additional patient, job dissatisfaction increased by five percent overall and by eight percent among nurses who reported emotional exhaustion.

Various studies conducted in U.S. hospitals have reported relatively low nurse-to-patient ratios compared to their counterparts in Europe; however, levels of reported nurse burnout were found to be almost equal, despite appropriate levels of nurse staffing (Lu, Ruan, Xing, & Hu, 2013). Therefore, it is necessary to explore other factors that are significant to nurse burnout. Would flexible nurse scheduling across all acute care units be a strategic intervention to nurses' well-being, allowing those working in stressful situations with heavy workloads to rejuvenate their energy and balance their personal and work life?

Theoretical/Conceptual Framework

The purpose of a conceptual framework is to guide and inform a study in terms of connecting the suggested statement of the problem and the research questions to the methodology and research plan. A conceptual framework can be compared to a road map,

revealing the exploratory path for the investigator (Moran, Steketee, Forman, & Dunston, 2015).

The Conservation of Resource Theory

The Conservation of Resource (COR) theory is used to elaborate the concept of burnout and how its effects are noted in employees from various fields, including health care. While the image portrayed of the nursing profession is that of striving to serve while preserving core resources, any disruption in those resources may lead to burnout. Hobfoll (1989) has noted that a fundamental aspect of the COR theory is that a person's goal is to obtain and maintain resources that he or she values (as cited in Patrician, Prapanjaroensin, & Vance, 2017).

The COR model that guided this study was first initiated by Hobfoll (1989) to describe the essence and complexity of stress and to identify a common space between environmental or physical stressors and a person's perceived ability to gain value and face challenges. The COR theory has been used to help discern stressful events and human drive to meet high demands (Alvaro et al., 2010). The COR theory was deemed fit for this study because the analogy of work-related stress and a disruption in a person's core values relates to the nursing profession (see Figure 3). According to Patrician et al. (2017), a stress-event that results from a subjective perception of the effects that goes beyond personal resources to counteract those effects can cause a depletion of the individual's resources. Examples of these resources include, but are not limited to, self-control, sustained energy, perceived self-control in stressful situations, and a sense of goal attainment.

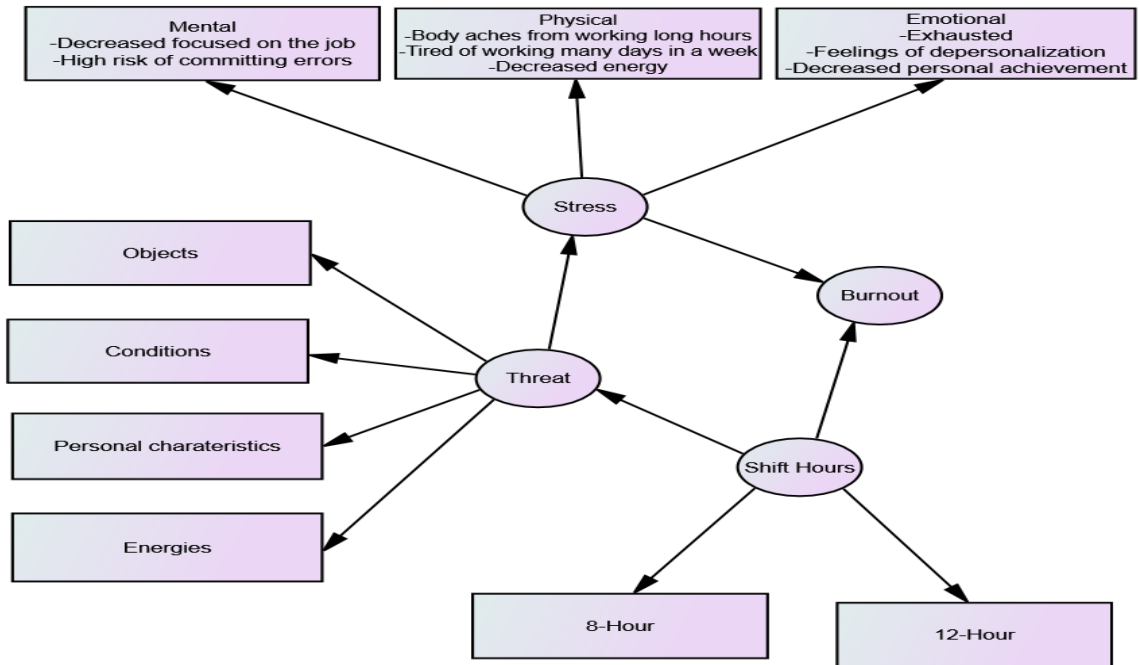


Figure 3. The COR theory. Adapted from “Conservation of resources theory in nurse burnout and patient safety,” by Patrician, P.A., Prapanjaroensin, A., Vance, D.E. (2017). Conservation of resources theory in nurse burnout and patient safety. *Discussion paper*. DOI: 10.1111/jan/13348

COR Theory: The Resources

In COR theory, resources are described as energy, objects, conditions, and personal characteristics that are central to nurses’ work life. In order to keep up with the fast-paced work environment of acute care settings, nurses strive for physical strength, a sustained good mood while performing challenging tasks, and maintaining professionalism despite stressful work conditions. Once such characteristics are disrupted, nurses experience the threat of stress leading to burnout symptoms. Knowledge is another energy resource (Alvaro et al., 2010); when nurses receive in-service trainings and stay up-to-date with evidenced-based nursing, their knowledge is sharpened, and they can provide quality patient care.

The objects resource in COR theory is described as what motivates nurses to wake up and go to work: the tangible reward nurses receive from their work. These rewards include hourly wages and incentives. The financial component of the theory is what allows nurses to afford food, which enables them to eat healthfully and be physically fit for a challenging job which requires standing for extended hours during the shift. They also then have the resources to buy the things they need, like clothing or a vehicle, all part of ensuring that their work attendance is maintained.

The conditions resource is defined as a working environment that is safe for a nurse to practice their skills. The institutional and multidisciplinary team constitutes a support group for the nurse. Teamwork allows nurses to work under less stress because they can delegate tasks and seek help for work coverage during break time; this creates a working environment that is characterized by decreased stress levels, hence preventing burnout. Fifteen-minute breaks help nurses rejuvenate strength, eat a snack, relieve their bladders, and breathe fresh air by going outside of their unit and building.

Good health is also a condition resource for nurses. In order to think critically, reduce medical errors, and avoid missing work, nurses need to be in good health by sleeping adequately, drinking sufficient amounts of water, and eating healthfully. When this condition resource is lacking, nurses practicing in challenging and stressful acute care settings are more likely to experience burnout.

The personal characteristic of self-esteem is one resource nurses can benefit from (Alvaro et al., 2010). When nurses experience challenging and stressful situations, they need strong stamina to face these challenges; self-esteem enables nurses to demonstrate confidence in their nursing skills practice.

COR Theory: The Threat

The loss of resources of energy, objects, conditions, and personal characteristics constitutes a threat to the core values of nurses that can lead to stress and, consequently, to burnout symptoms. The etiologies of the threat, in this project, emanate from the contributory factors of shift hours and length, increased nurse workload, and short staffing conditions—creating time pressure that works to deplete nurses' energy resources. Eight-hour shifts can seem tiring, depleting motivation to go work and leading to lack of sustained energy. Further, nurses are frequently required to pass on tasks to coworkers in the next shift because they are not able to accomplish all of their nursing tasks during the eight-hour shift. Working 12-hour shifts has its own challenges, with hours that might seem excessively long, causing depletion of physical strength and affecting brain functionality.

In order to sustain energy and stamina during a work shift, whether an eight- or 12-hour shift, a nurse needs to be physically, mentally, and emotionally fit. The COR theory would suggest that nurses that call in sick when they are on the edge of burnout because they are physically exhausted. By missing a paid day, their financial resources, and consequently health resources, may be affected. Therefore, nurses might not be able to perform the required job skills during the eight- or 12-hour shifts, and this may threaten the core value resources of objects, conditions, personal characteristics, and energies, as described by COR theory.

COR Theory: Stress and Burnout

Stress in the COR theory is described as a person's reaction to environmental stressors under the umbrella of three situations named "threats" (p. 1). Stress may lead to

nurses committing medical errors resulting from decreased mental focus. Stress caused by depleted energy, working under inadequate staffing conditions, or being deprived of appropriate breaks while working eight- or 12-hour shifts may lead to physical exhaustion. Not only does stress affect nurses physically and mentally, but it may also cause decrease self-esteem. Hence, nurses may experience a lack of motivation to achieve personal goals and increased cynicism toward the nursing career (Alvaro et al., 2010).

The Neuman Systems Model

Another model, the Neuman Systems Model, was incorporated into this scholarly project and, though often used to examine patient health, is applicable to nurse burnout. The model is based on the theory of individuals' core of health, which is comprised of the flexible line of defense, the normal line of defense, and the line of resistance. According to Neuman's theory, a person is whole when their core interacts with the environment. There is a dynamic interaction between a person and the environment, and there is harmony between the two when the core is preserved and guarded. The environment encompasses internal, external, and intrapersonal stressors (Secillano, 2008).

The individual is at risk of imbalance or disharmony the moment that external stressors disturb the normal equilibrium. These stressors in this project include shift length, day versus night shift, and workload. The natural response to stressors or attitude toward stressors, such as long hours of work, is referred to as a normal line of defense. However, when the nurse complains, for example, of being at the end of her rope or contemplates the idea of missing work the next day, the work shift is then viewed as a threat to the normal equilibrium. The flexible line of defense has been broken. When their stress load is unrealistically high, nurses have difficulty preserving their line of

resistance. The moment the line of resistance is attacked, the core is broken. The stressors that lead to breaking through the normal line of defense, and then the line of resistance, result in illness.

Figure 4 demonstrates how stressors are threats to the core of an individual and the steps involved in order for the core to be broken. In this project, the effect of a broken core is burnout, as evidenced by nurses' perceived emotional exhaustion, depersonalization, and decreased personal achievement.

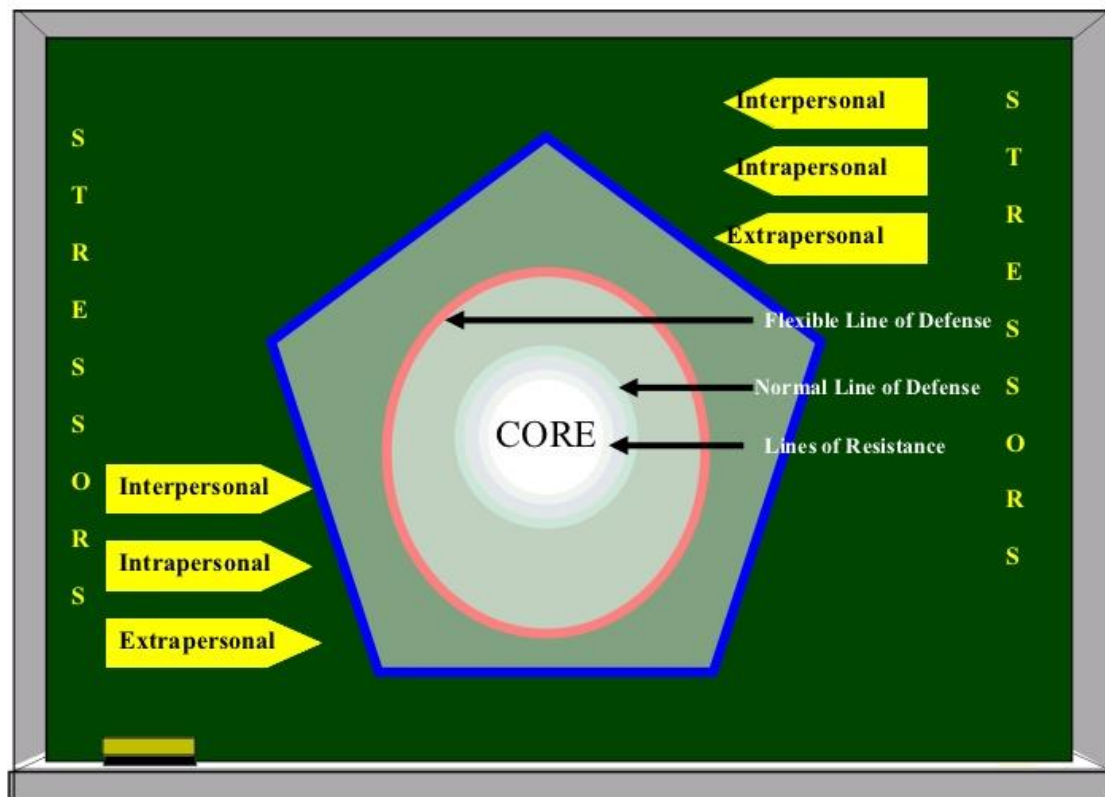


Figure 4. Core stressors. From Betty Neuman's System Model, by R. Secillano, 2008. Copyright 2018 by LinkedIn Corporation. Reprinted with permission.

The Job Demands-Resources Model

The Job Demands-Resources (JD-R) model is another method used in this project to envision the effects of nurse burnout. The model suggests that burnout results from a discordance between the demands and the resources in the workplace (Figure 5). When the resources available to nurses are few, the impacts include increased emotional exhaustion, depersonalization, and decreased personal achievement (Maslach, Leiter, Schaufeli, & Jackson, 1986). For nurses, in particular, eight- or 12-hour shifts, day versus night shifts, and nurse-to-patient ratios are considered to be work demands. Alarcon (2011) studied the relationship between job related demands and nurses' perceived feelings of emotional exhaustion, and found that the resources were correlated with personal achievement. Accordingly, job demands are correlated with psychological and physiological effects.

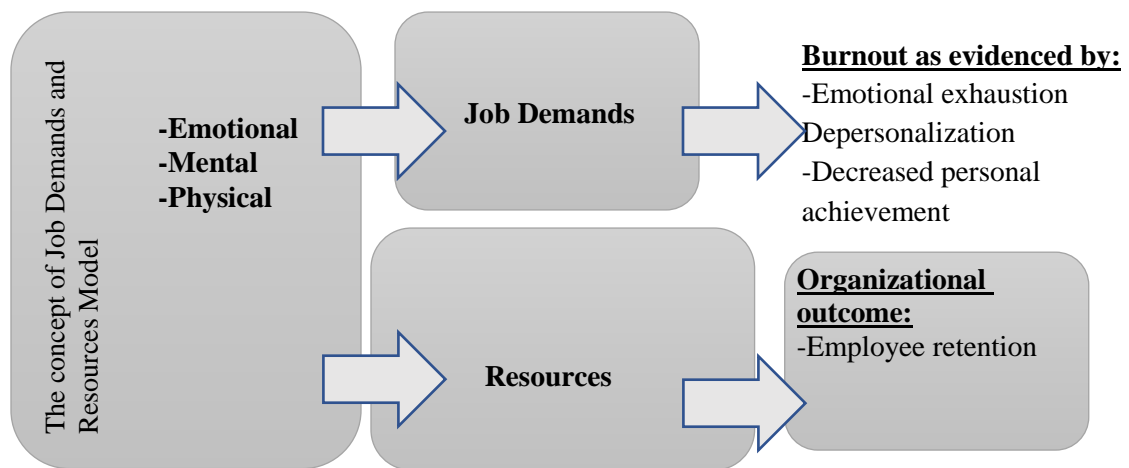


Figure 5. The concept of JD-R.

The second category of JD-R, job resources, encompasses the physical, psychological, and environmental aspects of the job that assist an employee in achieving

work objectives, decreasing work demand, and increasing personal motivation. (Demerouti, Nachreiner, Bakker, & Schaufeli, 2001). The JD-R model was employed in this project in order to correlate nurses' job demands on nurses' jobs and their emotional, physical, and mental impact. Job resources will not be discussed since the suggestions based on the outcomes of this study will depend on the institution's wish to examine existing job policies.

In summary, nurse burnout remains a significant concern in health care, affecting nurses' physical and psychological status in hospitals. This literature review has addressed the concept of burnout. The challenges of longer 12-hour shifts and shorter eight-hour shifts, day versus night shifts, as well as the nurse-to-patient ratios of 1:4 as opposed to 1:5 or 1:8, play a role in burnout. Hence, it is necessary to explore the significance of contributory factors of nurse burnout as measured by their feedback concerning their shifts and workload with regard to their emotional exhaustion, depersonalization, and decreased feelings of personal achievement.

CHAPTER 3

METHODOLOGY

Project Design

This project is a cross-sectional study that employs an analytical survey design for the collection of quantitative data. Cross-sectional research designs are concerned with studying the difference between existing groups and do not use randomly selected data; rather, subjects are selected according to various existing differences. Cross-sectional studies require a large sample size chosen from a wide population and use survey methods for data collection (Health Knowledge, 2017). Another specific feature of cross-sectional studies is that the main interest is to draw a correlation between variables at one given time, as compared to longitudinal studies which study a group over a long period of time.

Institutional Review Board Approval

A letter of approval to conduct the present study in the critical and medical surgical care units of the community hospital was obtained from the hospital's Institutional Review Board (IRB), as well as from the Andrews University IRB (see Appendix A).

Demographics and Sample Selection

The demographics of the study included male and female RNs who work full-time or part-time. The inclusion criteria required three months of work experience in an acute care setting. Participants who were selected were able to read English and were 18 years of age or older. The exclusion criteria included newly hired RNs with less than three months of work experience, licensed practical nurses, nurse technicians, and nurse interns. Support and cooperation for the project were obtained from the unit managers of the community hospital.

An invitation to participate in this study was distributed through flyer format by unit managers and by word of mouth during daily huddles. The MBI survey was sent out electronically as well as in paper format, with permission from the creator of the survey. Regarding ethical considerations, including beneficence and confidentiality, each participant received an identification number for confidentiality purposes, and all emails were deleted upon completion of the project. The project did not include any bias based on spiritual or cultural backgrounds. Permission to start data collection was obtained from the IRB of the community hospital as well as from Andrews University.

Participants were selected from among RNs working in a community hospital that employs RNs for various shift schedules. The sample was comprised of nurses who work eight- and 12-hour shifts, both night and day, and who work in various acute care units, including medical oncology, cardiac telemetry, post-surgical care, ortho-neuro, progressive care, critical care, operating room, recovery room, and pediatric units. Acute care units are described as areas that are mainly concerned with providing care to patients presenting with serious illness or traumatic injury.

Data Collection

Data was collected using the MBI survey, upon approval by the creator of the tool. Participants answered demographic questions regarding the care unit in which they were employed. The MBI survey aims at measuring the burnout levels along three components: emotional exhaustion, depersonalization, and decreased personal achievement. The scores from each of the three categories were compared for nurses working the eight- and 12-hour shifts.

In this study, the independent variables were shift hours worked (eight- or 12-hour shifts), nurse-to-patient ratio, and type of shift (day and night). The dependent variables were emotional exhaustion, depersonalization, and decreased personal achievement. Each measurement scale targeted the assessment of the frequency with which the participant experiences emotions or feelings in regard to each dependent variable, utilizing the seven-point anchored response format (Maslach et al., 2016). The purpose of this project was to evaluate the significance and level of perceived burnout nurse burnout, as manifested by their scores from the MBI scale, in a community hospital.

Sample Size and Statistical Instrument

The sample size was determined by using the power analysis with an estimated effect size of 0.25 and an alpha error probability of 0.05. The total sample size based on this power analysis was 90.

A one-way multivariate analysis of variance (MANOVA) was used to compute the statistics. Multi-variance test procedures assume a normal distribution of the dependent variable within the sample. There were three hypotheses in the project.

The Effects of Length of Shift Worked on Burnout

Hypothesis 1: There is no significant difference in Emotional Exhaustion (EE), Depersonalization (DP), and Personal Achievement (PA) between nurses working the 12-hour and eight-hour shifts.

A one-way MANOVA was conducted to determine shift hour differences in the three burnout components (EE, DP, PA). Pillai's Trace was used to test the hypothesis, indicating a non-significant difference between shifts worked [Pillai's Trace = .02, $F_{(3, 112)} = .882$, sig = .453].

Based on the MBI scoring key (Maslach et al., 2016), 3.5 is considered the cut off for being emotionally exhausted several times a month.

The Effects of Type of Shift Worked on Burnout

Hypothesis 2: There is no significant difference in burnout between nurses who work day shift and those who work night shift.

A one-way MANOVA was conducted to determine day and night shift differences in the three burnout components (EE, DP, PA). Pillai's Trace was used to test the hypothesis, indicating a significant difference between day and night shifts [Pillai's Trace = .05, $F_{(3, 112)} = 1.95$, Sig. = .125, $\eta^2 = .05$].

The Effects of Workload on Burnout

Hypotheses 3: There is no significant difference in burnout between nurses working varying nurse-to-patient ratios.

A one-way MANOVA was conducted to determine nurse-to-patient ratio differences in the three burnout components (EE, DP, PA). Wilk's Lambda was used to

test the hypothesis, indicating a marginally significant difference between nurse-to-patient ratios [Wilk's $\lambda = .90$, $F_{(3, 113)} = 4.11$, $\text{sig} = .01$, $\eta^2 = .10$].

Maslach Burnout Inventory

The measurement tool used in this project was the MBI. Maslach et al. (2016), have extensively researched the concept of burnout since the 1970s. Their research studies have confirmed the fact that burnout exists among health-care providers, and the discordance between employees and their surrounding work environment is manifested by a contradictory pattern that is portrayed in many ways including: increased workload, self-control, gratification, justice, workplace, and personal values. Maslach et al. (2016), have found that an individual is labeled as experiencing burnout when his or her work life and the factors addressed previously are disconnected. Maslach et al. (2016) evaluated burnout by measuring the variables emotional exhaustion, depersonalization, and decreased personal achievement using the MBI Human Services Survey scale. The survey was designed for participants working in health and human services, including nurses, physicians, nurses' aides, social workers, therapists, and health counselors.

The MBI Model uses scales that have been confirmed by researchers to have a reliability average in the upper .80s for emotional exhaustion and .70s for depersonalization and personal achievement. Numerous studies have reviewed the validity of the MBI tool and concluded that the scale validates hypotheses regarding the relationships between job demands and perceived burnout.

Maslach et al. (2016) MBI scale assesses three factors of burnout syndrome, including emotional exhaustion, depersonalization, and decreased personal accomplishment.

The frequency with which the respondent experiences feelings related to each scale is assessed using a seven-point, fully anchored response format. The 9-item Emotional Exhaustion scale assesses feelings of being emotionally overextended and exhausted by one's work. Higher scores correspond to greater experienced burnout. The 5-item Depersonalization scale measures an unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction. Higher scores correspond to greater degrees of experienced burnout. The 8-item Personal Achievement scale assesses feelings of competence and successful achievement in one's work with people. Lower scores correspond to greater experienced burnout. (p. 15)

According to Maslach et al. (2016), respondents can express their feelings on two levels, “frequency and intensity” (p. 12), which allows researchers to demonstrate a relationship between the two dimensions. The frequency scale format includes items such as “I feel burned out from my work,” to which respondents answer using a scale of 0 to 6 from the following options: “never (0), a few times a year or less (1), once a month or less (2), a few times a month (3), once a week (4), a few times a week (5), and every day (6)” (Maslach et al., 2016, p. 12).

CHAPTER 4

RESULTS

The purpose of this scholarly project was to determine the level and significance of perceived burnout as manifested by emotional exhaustion, depersonalization, and decreased personal achievement in nurses who work the 12-hour shift compared to those who work the eight-hour shift. This project also analyzed the factors of nurse-to-patient ratio and working day as opposed to night shifts and how these contribute to nurse burnout in a community hospital.

Upon receiving the IRB permission from the community hospital as well the university, recruitment and data collection were completed, followed by statistical analysis using the MBI as the guiding tool for the results. The following chapter includes the demographic information for the nurses who participated in the project and the findings of the three hypotheses posited for the project. The results in this section describe the effects of shift length (8-hour versus 12-hour shifts), nurse-to-patient ratios or workload, and type of shift (day or night shifts) on nurse burnout.

Participant Demographics

The project sample consisted of 118 nurses from the acute care units of a community hospital. Among participants, 114 responded to the demographic question of marital status. The majority of participants were married (62.3% married, 24.6% unmarried). This finding is consistent with Asif, Hashmi, and Naz (2016), who noted that

single nurses expressed less interest in participating in research on burnout due to various factors, such as the level of agitation related to increased work-related stress and difficulty in coping with the workload compared to their married counterparts, who exhibit more fulfillment in their profession, which is believed to be linked to their spouse or family support. Figure 6 provides a breakdown of participation percentage by marital status: single, married, divorced or separated, and widowed.

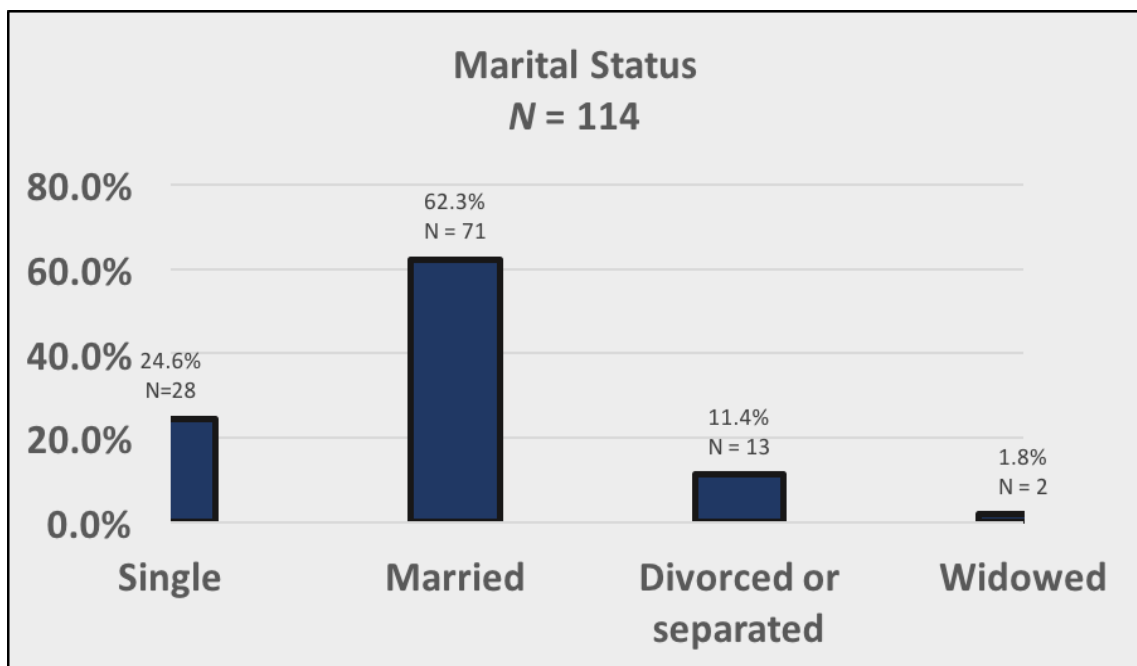


Figure 6. Marital status.

Regarding age, the largest group of participants was young adults, ages 21 to 30. They constituted 44% of participants. Tourign and Lituchy (2016) found that younger nurses exhibit more work-related stress, more recurrent symptoms of emotional exhaustion, unhappy work attitudes, and a higher desire to quit the job. Figure 7 shows

Percentage of Age Groups N = 113

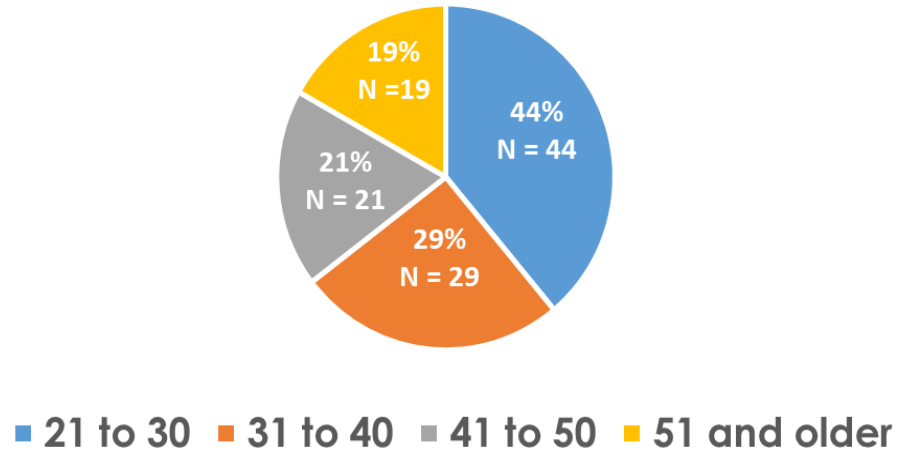


Figure 7. Percentage of age groups.

that more young nurses expressed their wish to participate in a project related to their current work issues. Figure 7 provides detailed information about participants' age demographics.

Most participating nurses across all units had worked in acute care settings for between one and five years. The demographics in this section reflect higher participation from younger nurses with less work experience. Previous studies have revealed that newer nurses exhibit enthusiasm toward their nursing profession when they first start the nursing job, but as time goes by, and with issues such as increased workload leading to job-related stress, these younger nurses are more likely to experience agitation and report higher level of burnout (Asif et al., 2016). Figure 8 provides information about participants' work experience.

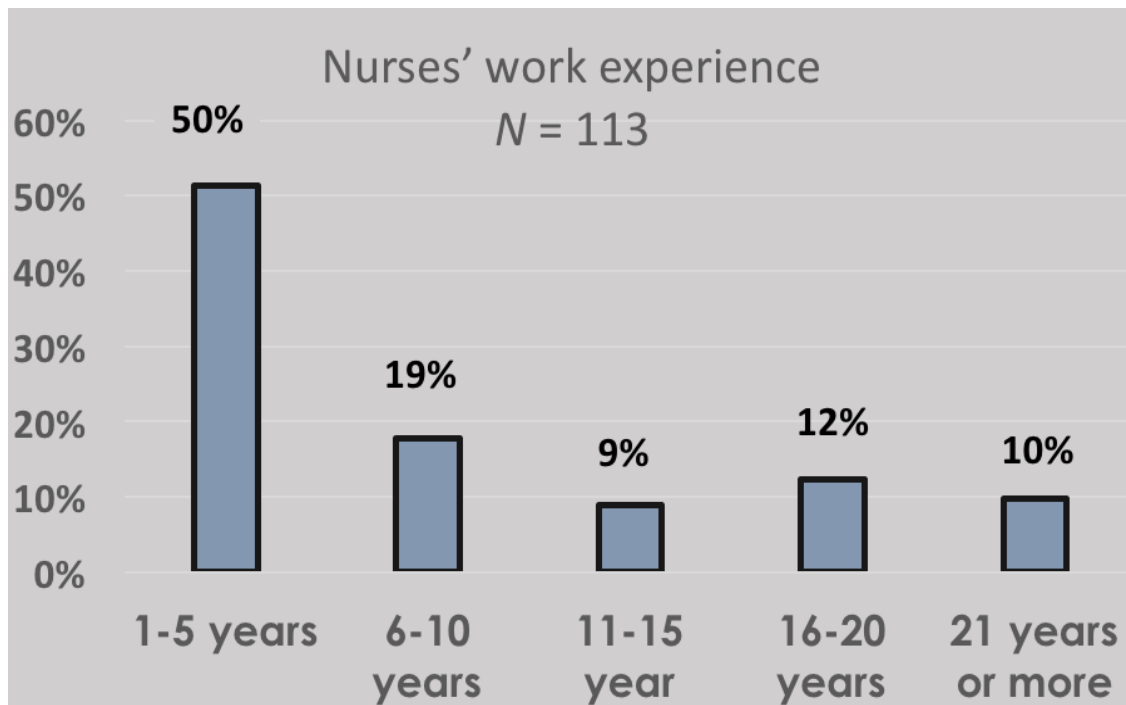


Figure 8. Acute care years of work experience.

In this project, a heavy workload was defined as a nurse-to-patient ratio between 1:5 and 1:8, whereas the standard or normal workload was considered to be a nurse-to-patient ratio of 1:4 or fewer. A total of 57 participants (48%) were assigned one to four patients on a regular basis whereas 61 nurses (52%) cared for five to eight patients during their shifts (see Figure 9).

The project demographics in Figure 10 reflect the number of participants from the day shift being higher than their counterparts in the night shift. This finding is supported by Asif et al. (2016), who found that night shifters exhibit more fatigue compared to their counterparts, the day shifters. The rationale for less participation from the night shift nurses could be attributed to less enthusiasm for engaging in research project. On the other hand, there was more participation from nurses who worked 12-hour shifts

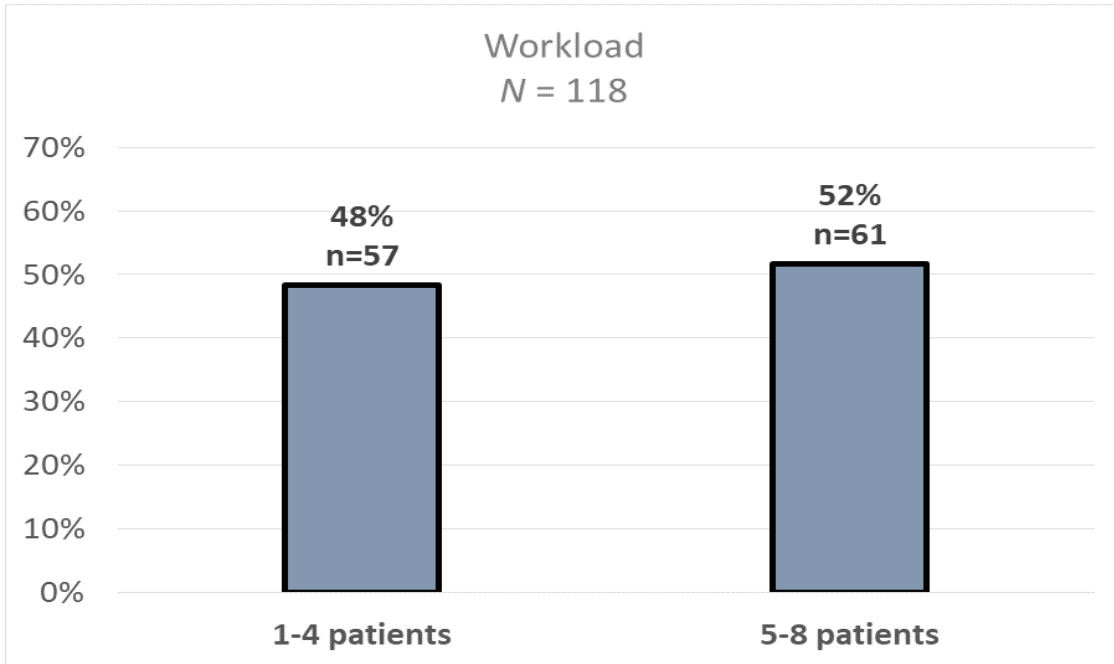


Figure 9. Nurse-to-patient ratio.

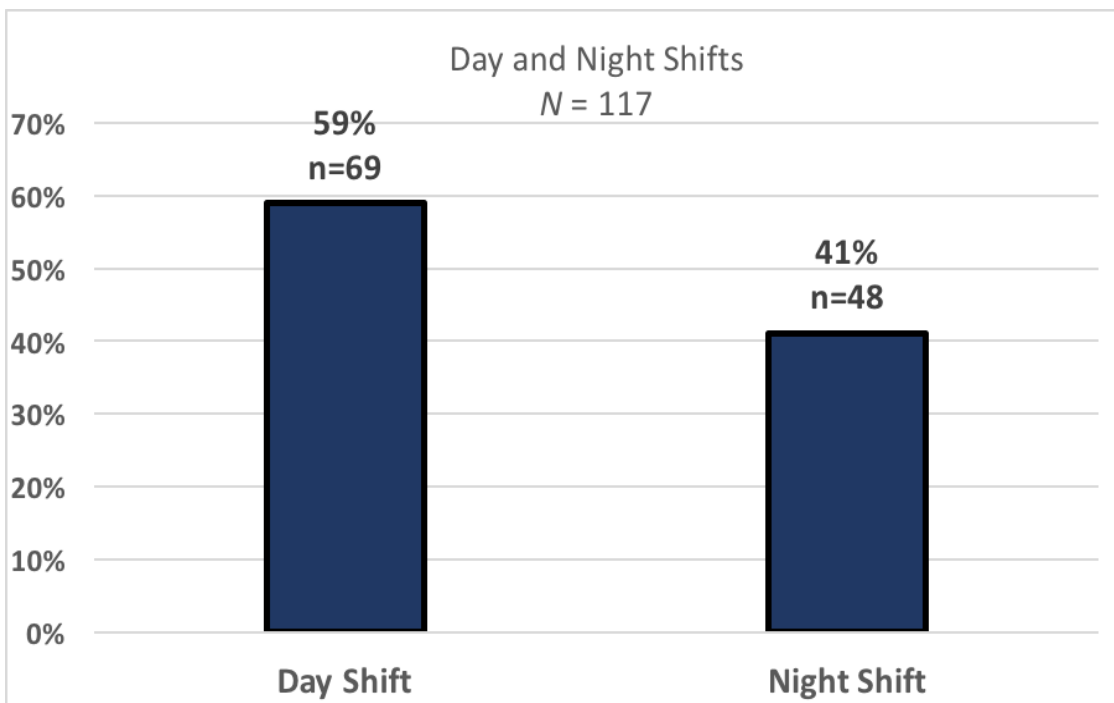


Figure 10. Day and night shifts.

compared to those who work eight-hour shifts. Previous research studies have shown that nurses who work 12-hour shifts or longer report higher levels of emotional exhaustion, depersonalization, low personal accomplishment, and an intention to quit their job (Ferri et al., 2016). Figure 11 provides information on participants' work in eight- and 12-hour shift lengths.

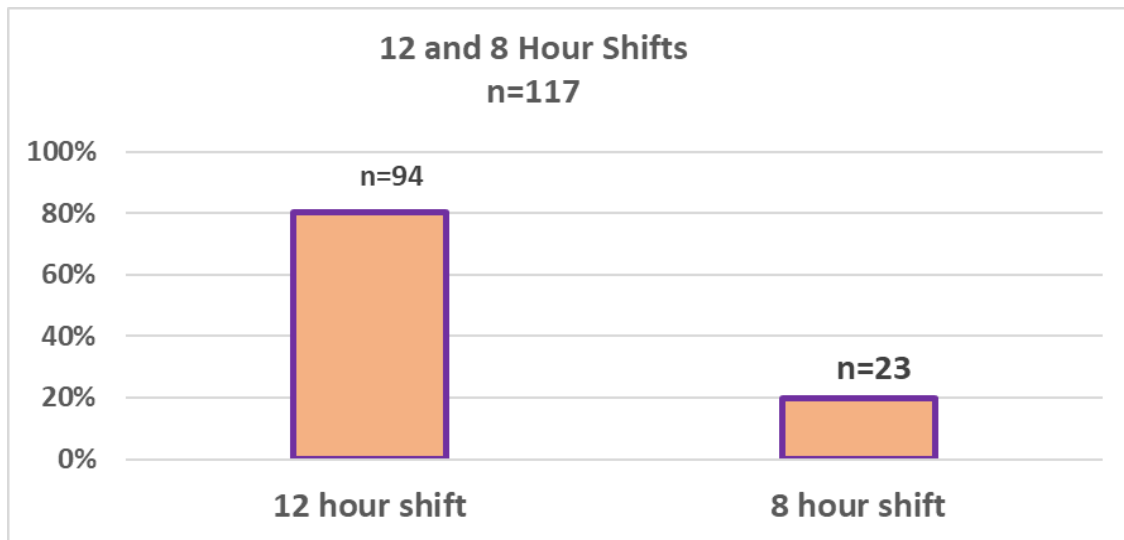


Figure 11. Length of shift.

Burnout and Shift Length

The results of this project did not reveal significant emotional exhaustion for either the 12-hour or the eight-hour shift. According to the MBI scoring key, there was no burnout indicated because the mean for the eight-hour and 12-hour shifts were both below 3.5 (See Table 1. $M = 2.86$ for the 12-hour shift and 2.48 for the eight-hour shift).

As for the variable of depersonalization, the results revealed that nurses working the 12-hour shift and those who worked eight-hour shifts did not exhibit significant

Table 1

Means, Standard Deviations, and p Values for EE, DP, and PA According to Shift Length—12-hour and 8-hour Shifts

MBI Dependent Variable	Shifts	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i>
Emotional Exhaustion	12-hour shift	94	2.86	1.11	0.19
	8-hour shift	22	2.48	1.57	
Depersonalization	12-hour shift	94	1.37	1.17	0.19
	8-hour shift	22	1.02	0.85	
Personal Achievement	12-hour shift	94	4.71	0.86	0.21
	8-hour shift	22	4.96	0.73	

burnout, based on their means, which were below 3.5 as well; the means for both shifts were 1.37 and 1.02 respectively.

Conversely, the MBI scoring key notes that the higher the mean for personal achievement, the lower the burnout. The results for the variable of personal achievement showed that both eight- and 12-hour shift nurses did not exhibit significant burnout because their means were higher than 3.5 and closer to 6. The means for personal achievement were 4.71 and 4.96 respectively.

Table 1 provides further information on the means, standard deviations, and *p* values for EE, DP, and PA according to shift length—12-hour and eight-hour shifts.

Burnout and Day/Night Shifts

According to the MBI scoring key, neither the day nor night shift groups experienced burnout. The means were 2.97 for the day shift and 2.51 for the night shift, and the threshold for burnout is 3.5. However, there was a significant difference between the groups in emotional exhaustion. The *p* value for day and night shift was 0.04, which

is below 0.05. Therefore, the day shift nurses were at greater risk for emotional exhaustion compared to their counterpart night shifters.

As for the depersonalization variable, the mean for the day shift was 1.48, and the mean for the night shift was 1.03. Based on the MBI scoring key, the two groups did not exhibit burnout, with their means being below the 3.5 threshold. The p value for day and night shift was 0.03, which is below 0.05. Based on these results, the variable of depersonalization posed for a potential contributory factor for nurse burnout in day and night shift nurses.

The results for the personal achievement variable revealed a mean of 4.66 for day shifters and a mean of 4.89 for night shifters. According to the MBI scoring key, the higher score on a scale of 0 to 6, the less burnout; hence, nurses working either the day shift or the night shift did not demonstrate decreased personal achievement because their means were respectively 4.66 and 4.89. Table 2 provides further information on the means, standard deviations, and p values for EE, DP, and PA according to the day and night shifts. There was a significant difference between day and night shifts for EE [$F_{(1, 115)} = 4.25$, Sig. = .04, $\eta^2 = .04$] and DP [$F_{(1, 115)} = 4.74$, Sig. = .03, $\eta^2 = .04$].

Burnout and Nurse-to-Patient Ratio

The project results revealed that for emotional exhaustion, the p value for both nurse-to-patient ratio groups was 0.05, and the means for nurse-to-patient ratios of 1:4 (or fewer) and 1:5 (and higher) were 2.55 and 2.99 respectively. Hence, the two groups did not experience burnout. On the other hand, based on the significant p value of 0.05 between the groups, the inference is that nurses with a workload of five to eight patients are relatively more at risk for emotional exhaustion compared to their counterparts with a

Table 2

Mean, Standard Deviations, and p Values for EE, DP, and PA According to Day and Night Shifts

MBI Dependent Variable	Shifts	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i>
Emotional Exhaustion	Day Shift	69	2.97	1.33	0.04
	Night Shift	47	2.51	0.96	
Depersonalization	Day Shift	69	1.48	1.24	0.03
	Night Shift	47	1.03	0.87	
Personal Achievement	Day Shift	69	4.66	0.81	0.15
	Night Shift	47	4.89	0.88	

workload of one to four patients. The results showed a difference in emotional exhaustion because the mean of 2.99 is greater than the mean of 2.55 for nurses with one to patients.

The results for the depersonalization variable did not meet the burnout threshold for nurses who have a workload of either one to four patients or five to eight patients. Their means were 1.43 for the heavy workload (five to eight patients) and 1.22 for the lesser workload (one to four patients). Both means were far below 3.5.

As indicated by the personal achievement values, nurses with a workload of one to four patients had a mean score of 4.74, and those with a workload of five to eight patients had a mean score of 4.78. According to the MBI scoring key, the higher the score on a scale of 0 to 6, the lower the levels of burnout. Therefore, neither group of nurses exhibited decreased personal achievement, with their means above 3.5. Table 3 provides further information on the means, standard deviations, and *p* values for EE, DP, and PA according to nurse-to-patient ratios.

Table 3

Means, Standard Deviations, and p Values for EE, DP, and PA According to Nurse Workload

MBI Dependent Variable	Workload	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i>
Emotional Exhaustion	1-4 patients	56	2.55	1.14	0.05
	5-8 patients	61	2.99	1.24	
Depersonalization	1-4 patients	56	1.43	1.15	0.32
	5-8 patients	61	1.22	1.13	
Personal Achievement	1-4 patients	56	4.74	0.86	0.79
	5-8 patients	61	4.78	0.82	

Nurse-to-patient ratio category differences were significant for EE [$F_{(1, 116)} = 3.93$, sig = .05, $\eta^2 = .03$], meaning nurses who have a higher nurse-to-patient ratio (5:1 to 8:1) exhibit higher emotional exhaustion than those nurses with four or fewer patients.

In summary, this cross-sectional study aimed at determining the level and significance of perceived burnout in nurses who work eight-hour or 12-hour shifts, day or night shifts, and with lower or higher nurse-to-patient ratios has yielded a strong scholarly project. The resulting means, standard deviations, and *p* values for emotional exhaustion, depersonalization, and personal accomplishment according to shift length, day and night shifts, and nurse-to-patient ratio have revealed that nurses at the community hospital did not experience burnout. However, emotional exhaustion was a significant factor when comparing nurses who worked eight-hour shifts and those who worked 12-hour shifts. Higher patient loads should also be further assessed for their potential impact on nurses' burnout.

CHAPTER 5

DISCUSSION

The following chapter is aimed at discussing the similarities and differences between the findings of this scholarly project and other research studies. Some of the findings of this project concurred with the results of previous studies while others were not in agreement. The purpose of this chapter is also to explore possible rationales for the findings of this project.

The project results are in line with previous research studies regarding the impact of workload on nurse burnout. In their study, Shin, Park, and Bea (2018) found that increased nurse-to-patient ratios are linked to higher levels of burnout in nurses. This finding was validated in this project in that the mean score ($M = 2.99$) indicated a risk for emotional exhaustion in nurses assigned a heavy workload of five to eight patients per nurse. The cut off mean for burnout according to the MBI scoring key is 3.5.

On the other hand, the findings of this project were not in agreement with other researchers, such as Maslach and Leiter (2016), regarding the effects of shift length (eight- and 12-hour shifts). In their study on latent burnout profiles, the two researchers demonstrated that burnout is related to perceived feelings of disengagement, reduced productivity, and overextension. However, the results of this project did not confirm burnout in nurses working 12-hour shifts, based on lower scores (below 3.5) on two

variables, emotional exhaustion ($M = 2.86$) and depersonalization ($M = 1.37$), as per the MBI scoring key.

Conversely, when comparing day and night shifts, regardless of the length of the shift or number of hours worked, the mean score was significant for emotional exhaustion in nurses who work the day shift ($M = 2.97$) compared to their counterpart night shift nurses (with $M = 2.51$), which demonstrates that shift type is a potential contributory factor for burnout.

In this project, workload was noted as a potential factor for emotional exhaustion due to means closer to the cutoff point for burnout among nurses working 12-hour shifts and caring for five to eight patients ($M = 2.99$). Similarly, MacPhee, Dahinten, and Harvaei (2017), in their research study on the relationships between workload factors, patients, and nurses' outcomes with 472 acute care nurses in a Canadian hospital, concluded that nurses' perceptions of a heavy workload and multiple work-related disruptions had an impact on patients' as well as nurses' outcomes, especially in terms of nurses' emotional exhaustion. The workload in MacPhee et al.'s (2017) study included the level of nurse-to-patient ratios, the patient's level of acuity, and the level of patient dependency on nurse tasks.

Although the present project results did not determine burnout in the nurses surveyed, the workload was a significant factor which posed a potential impact on nurses' work burnout. Further assessment is needed in this area to confirm a linkage between workload and nurse burnout.

Among the three domains that were examined in this project (emotional exhaustion, depersonalization, and decreased personal achievement), it was evident that

the mean for personal achievement was far higher than 3.5 in the analysis of shift length (eight- versus 12-hour shifts, $M = 4.71$ and 4.96 respectively), nurse-to-patient workload (1:4 [and fewer] or 1:5 [and higher], $M = 4.74$ and 4.78 respectively), and type of shift (day and night shifts, $M = 4.66$ and 4.96 respectively). When reverse scored, the mean for decreased personal achievement should be lower than the 3.5 threshold, meaning that the nurses had a sense of personal achievement. These findings were in agreement with a cross-sectional study conducted by Yang, Liu, Wu, Ding, and Xie (2018) on burnout in nurses working in 22 hospitals in China. Using the MBI tool, the results of their study determined a positive sense of personal achievement in nurses. Yang et al.'s finding is validated by the results of this project, which showed higher mean scores in personal achievement for nurses who work eight-hour shifts ($M = 4.96$) than for nurses who work 12-hour shifts ($M = 4.71$).

The analysis of this project did not focus on each acute care unit to investigate the relationships between shift length, workload, shift type and nurse burnout, but rather looked at all nine units together (medical oncology, cardiac telemetry, post-surgical care, ortho-neuro, progressive care, critical care, operating room, recovery room, and pediatric units). The results may have manifested differently if the analysis of the three dependent variables focused on each unit separately.

Pradas-Hernandez et al. (2018) geared their study toward one particular acute care setting—the pediatric unit. Their results of a systematic review and meta-analysis of the literature on the prevalence of burnout in 1,600 pediatric nurses revealed a prevalence of emotional exhaustion by 31% (95% CI: 25-37%), depersonalization by 21% (95% CI: 11-33%), and decreased personal achievement by 39% (95% CI: 28-50%). Among the

potential causative factors for burnout syndrome were work variables such as job satisfaction and work duration, work-related stress, and the age factor. Further assessment of this project data could be analyzed to obtain potential results for the risk for emotional exhaustion from each acute care unit in order to conduct a comparison between the Pradas-Hernandez et al. (2018) study and this scholarly project.

In light of the prospective future of the nursing profession, which suggests an increase in chronic illness and health-care work demand by the year 2022, along with a shortage of close to one million nurses, improvements in the reduction of nurse burnout are imperative (U.S. Bureau of Labor Statistics, 2016). Lessening nurse burnout could increase nurse retention, hence decreasing the nurse shortage. If nurses possess the emotional and physical energy they need, their productivity can increase, and health-care institutions could benefit by retaining staff and increasing the quality of patient care.

Project Limitations and Strengths

The major limitation of this project is its cross-sectional design. It was not a longitudinal study in which participants were followed for a certain period of time; instead, the recruitment of this project was limited to one moment in time. Consequently, the differences between the groups in the cross-sectional design pose a risk for biased results in unseen ways.

The findings did not determine burnout in nurses who work either eight-hour shifts or 12-hour shifts, nor could nurses' workload and type of shift (day or night) be stated as causes of burnout in nurses.

The project results could have been different if the proportion of respondents were equal or close to equal. As evidenced by the results, there were fewer eight-hour shift participants than 12-hour shift participants.

Additionally, the timeframe for data collection could have been extended for more than four months in order to collect more data for the project.

On the other hand, the strengths of the project were reflected in the strong stakeholder support, as well as in the diverse representation of units from the acute care setting of the community hospital.

In summary, the purpose of this project was to evaluate the significance and level of perceived burnout as manifested by emotional exhaustion, depersonalization, and decreased personal achievement in nurses who work the 12-hour shift compared to those who work the eight-hour shift. This project also analyzed the factors of nurse-to-patient ratio and working day as opposed to night shifts and how these contribute to nurse burnout in a community hospital. The MBI scores did not reveal burnout experienced by nurses in the community hospital. However, emotional exhaustion was a significant factor between nurses who work eight-hour shifts and those who work 12-hour shifts. Higher patient loads should be further assessed for their potential impact on nurse burnout.

The Impact of the Scholarly Project on the Nursing Practice

Scholarly project studies such as this project on the relationship between shift-hours worked (eight versus 12 hours), shift type, nurse-to-patient ratios, and nurse burnout are essential for improving the current and future nursing profession, lessening

the risk for emotional exhaustion in nurses, providing better health care to patients, contributing to organizational goals of achieving outcomes, reducing nursing staff turnover, and increasing nurse retention. The lack of strategies that target interventions for the prevention of emotional exhaustion in nurses may lead to nurse burnout. If nurses' heavy workload is not addressed by health-care management, the effects of workload may lead nurse burnout.

Impact on Current Nursing Practice

As a Doctor of Nursing Practice (DNP), it is important to participate in research that aims at improving the health-care system, especially research that impacts policies that enhance the well-being of nurses as they provide patient care twenty-four hours at bedside. My goal is to continue to thrive for the advancement of nursing as a profession through joining my efforts with other researchers in finding evidence-based practice that aligns with strategies that prevent nurse burnout. According to Rich and Butts (2015), "as the practice experts and knowledge appliers, DNP graduates will be in an ideal position to bridge the theory-practice gap, an enduring ambition of nursing" (p. 63).

Under the guidance of *The Essentials of Doctoral Education for Advanced Nursing Practice*, the discipline of nursing is focused on "the wholeness of human beings [and] recognizes that they are in continuous interaction with their environments" (American Association of Colleges of Nursing, 2006). The DNP graduate ensures patients' health goals are achieved. Additionally, the goal for the DNP graduate is to contribute to efforts in eliminating disparities and to promote patient safety and excellence in practice (American Association of Colleges of Nursing, 2006). When nurses do not exhibit behaviors of burnout, they are most likely able to provide better

patient care. Nurses will perform their skills to the expectation of the organization as long as there is less risk for emotional exhaustion.

Personal Analysis as a Professional

As a DNP, my self-analysis allows me to pause and ponder on nursing practice. I have taken time to interact with my peer nurses while writing my scholarly project, and I realized that though nurses' comments about job burnout are subjective, studies on nurses' burnout, such as the one I conducted, are worth the time and effort. The outcomes will be useful to the community hospital as the leadership chooses to create a committee council to work on strategies that prevent nurses' risks for emotional exhaustion.

Personal Analysis as Project Developer

As a project developer, I learned to use constructively the feedback I received from my project chair as I wrote each chapter and to analyze critically the information I read in research articles. The combination of the above allowed me to reflect on the importance of conducting a successful scholarly project on the relationship between shift hours worked (12 versus eight), workload, and nurses' burnout across acute care units in a community hospital. Writing a scholarly project as part of the requirement of the DNP program has increased my passion for nursing research, and I look forward to presenting the results of project to the international nursing forum and being involved in the advancement of nursing practice research.

Scholarly Project Meaning for Future Nursing Advancement

Nurse burnout has been researched as a barrier for nurses as they carry out their daily work. The feelings of burnout syndrome result in persistent mental and physical exhaustion that paralyzes their work engagement. The behaviors of emotional and physical exhaustion often result from persistent stress related to uncontrolled work demands (Cocker & Joss, 2016). Thus, it was important for me to conduct a project on nurse burnout by collecting nurses' perspectives using the MBI.

Impact on the Community Hospital

The intervention goal of this scholarly project was to present the results and findings to the leadership committee of the community hospital. The outcomes of the presentation resulted in the creation of a council committee that met subsequently to brainstorm on the current issues regarding nurse burnout and strategies to prevent emotional exhaustion in nurses across the acute care units of the hospital (Council Committee Meeting, personal communication, September 23, 2018).

Current nurses' issues at the community hospital as per the outcomes of the brainstorming meeting concluded that nurses take care of patients but oftentimes forget to take care of themselves. They try to hide the fact that they are tired, but their facial or sometimes verbal expressions betray them. Nurses talk amongst themselves about how exhausted they are toward the end of their shifts. Some nurses like the 12-hour shift because they get to enjoy more days off. Fewer nurses work the eight-hour shifts, the majority being the operating room nurses. Nurses quit their jobs for various reasons. The millennial generation tends to change jobs frequently. Seasoned nurses, particularly the

baby boomer generation, are contemplating retiring, and some are less interested in mentoring younger nurses.

The council committee meeting concluded with potential strategies, which included the following: (a) Explore how to increase nurses' skills, such as technology skills; (b) Consider providing more Epic in-service trainings in order to facilitate nurses' work; (c) Empower nurses by allowing them to take the lead on their floor, such as finding ways to increase patient care satisfaction; (d) Ensure the use of the buddy system is emphasized, with nurses taking care of each other; (e) Develop an internal survey questionnaire which will aim at gathering nurses' perceptions on the underlying causes of emotional exhaustion in nurses.

The buddy system consists of assigning nurses to cover for each other's patient groups whenever one goes on break. This allows an uninterrupted break, hence maximizing the rest and rejuvenating time each nurse is entitled to. Units care councils from each floor or unit to be creative, and some examples would be organizing fun time outside work days or time where nurses get to know each other better and share their personal life experiences. Creative activities outside the work environment could allow nurses to brainstorm on suggestions for improved function of their units.

Council Committee Meeting Recommendations

As per the results of the scholarly project, the majority of nurse participants were from the younger generation (age between 21 and 31). Further exploration was suggested regarding what the leadership needs to do in order to encourage baby boomers or seasoned nurses to mentor younger nurses.

The council committee meeting also discussed using Survey Monkey as a distribution tool to investigate nurses' responses to three queries as part of the institutional quadruple aim project plan: (a) State one thing that makes you happy at work; (b) State one thing that you can do today to increase patient satisfaction; (c) State one that leadership expectation puts on nurses.

Patient acuity is a contributory factor to explore as an underlying cause of emotional exhaustion in nurses. Investigating the outcomes of what has already been initiated in various medical surgical units (such as the acuity tool), and exploring other options should be considered in order to resolve the issue. Based on the existing data in the scholarly project, it would be beneficial to survey the age group that is at a higher risk of emotional exhaustion compared to the others.

In regards to the nurse-to-patient ratio, unit managers and central staffing need to be involved in finding ways to close the gap in nurse coverage when nurses are on maternity leave, have changed departments, or have resigned. Should the hospital use more float, flex, and traveling nurses? Should they hire more full-time or part-time nurses? The budget and the costs involved must be considered. How can we maintain millennial nurses? Consideration was given to the following options: (1) Allowing younger nurses to pursue their career dreams by giving them opportunities to explore or change departments/units upon completion of the mandatory year on the current job; (2) Continuing tuition reimbursement to encourage nurses to go back to school; (3) Maintaining the current talent pool by providing more training and in-service based on department needs as well as nurses' needs; (4) Contemplating increased incentives. The budget and the costs involved must be considered.

Plan for the Dissemination of the Project

It is important for me as the scholarly project author to think about sharing the project findings. Dissemination can open doors for improvements in nursing practice and the development of strategies for the prevention of the emotional exhaustion that leads to nurse burnout in community hospitals. My target audience is health care institutions, such as hospitals, where I hope to make an impact in the prevention of nurse burnout. Stakeholders in hospitals include clinicians in the leadership team who play a role in clinical decision-making in regard to implementation of prevention strategies based on the evidenced practice. The second audience I hope to influence is the Sigma Theta international conference, where networking with nurse leaders and researchers takes place. The third audience is clinical researchers, such as DNP nursing students, who can develop more studies in the field of nurse burnout.

Restoration to the Image of God

As work demands in the health-care system continue to increase, strategies for the prevention of emotional exhaustion, depersonalization, and decreased personal achievement are imperative in order to prevent nurse burnout. As DNP graduate, I will draw wisdom from God in order to implement the strategies for prevention of emotional exhaustion that lead to nurse burnout under the above guidelines. Hence, the leadership of health-care institutions, such as community hospital management teams, are reminded to seek God's guidance and implore His promises. God's promise stipulates that, "I can do all this through Him who gives me strength" (Philippians 4:13, New International Version).

As the nursing leadership team of the community hospital and the members of the council committee meeting continue to brainstorm on strategies that will prevent the risks of emotional exhaustion in nurses, they are reminded to trust God and acknowledge Him in the process of finding interventions that will be suitable for nurses in regard to preventing burnout, hence increasing nurse retention. “So you will find favor and good success in the sight of God and man. Trust in the LORD with all your heart, and do not lean on your own understanding. In all your ways acknowledge him, and he will make straight your paths” (Proverbs 3:4–6, English Standard Version).

APPENDIX A

APPROVAL LETTERS

Lakeland Institutional Review Board Approval Letter

Tue 8/22/2017 4:15 PM

Zech, Cindi CZECH@LakelandHealth.org

Approval of research

To IRB

Andrews IRB #17-119

Lakeland's IRB # 1574

Liliane Nyamuziga, Student

DNP Program, Andrews University

Relationship Between Hours-Work (Twelve versus Eight) and Nurses' Burnout: Study
Across Acute Care Units in a Community Hospital

The above research study was reviewed by Jann Totzke, Lakeland's IRB Chairperson. It
was reviewed through the Expedited Review procedure, (#7 Research Employing
Survey).

Please contact me with any questions you may have.

Thank you,

Cindi Zech

Lakeland Institutional Review Board

Marie Yeager Cancer Center

3900 Hollywood Rd.

St. Joseph, MI 49085

Phone: (269) 556-7168

Fax: (269) 556-7169

czech@lakelandhealth.org.



Andrews University Institutional Review Board Approval Letter

Review Board – 8488 E Campus Circle Dr Room 234 - Berrien Springs, MI 49104-0355

Tel: (269) 471-6361 Fax: (269) 471-6543 E-mail: irb@andrews.edu

September 5, 2017

Liliane Nyamuziga

Tel: 269-697-9092

Email: nyamuzig@andrews.edu

RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN
SUBJECTS

IRB Protocol #: 17-119 Application Type: Original Dept.: Nursing (DNP)

Review Category: Expedited Action Taken: Approved Advisor: Jochebed Ade-Oshifogun

Title: Relationship between shift hours-work (twelve versus eight) and nurse's burnout:
Study across acute care units in a community hospital.

This letter is to advise you that the Institutional Review Board (IRB) has reviewed and approved your IRB application for research involving human subjects entitled:

“Relationship between shift hours-work (twelve versus eight) and nurse's burnout: Study across acute care units in a community hospital” IRB protocol number 17-119 under Expedited category.

This approval is valid until September 5, 2018. If your research is not completed by the end of this period, you must apply for an extension at least four weeks prior to the expiration date.

We ask that you inform IRB whenever you complete your research. Please reference the protocol number in future correspondence regarding this study.

Any future changes (see IRB Handbook pages 10-11) made to the study design and/or consent form require prior approval from the IRB before such changes can be implemented. Please use the attached report form to request for modifications, extension and completion of your study. While there appears to be no more than minimum risk with your study, should an incidence occur that results in a research-related adverse reaction and/or physical injury, (see IRB Handbook page 11) this must be reported immediately in writing to the IRB. Any project related physical injury must also be reported immediately to the University physician, Dr.Katherine, by calling (269) 473-2222. Please feel free to contact our office if you have questions.

Best wishes in your research.

Sincerely

Mordekai Ongo

Research Integrity & Compliance Officer

Institutional Review Board – 8488 E Campus Circle Dr Room 234 - Berrien Springs, MI
49104-0355

Tel: (269) 471-6361 Fax: (269) 471-6543 E-mail: irb@andrews.edu

APPENDIX B

APPROVED FLYER



Relationship between shift hours-work (twelve versus eight) and nurses' burnout: A study across acute care units in a community hospital
CALLING ON NURSES

BE PART OF AN IMPORTANT SHIFT HOURS-WORK AND NURSES' BURNOUT STUDY.

- Are you 18 years of age?
- Have you worked as a registered nurse in an acute care setting for at least 3 months?

If you answered YES to the above questions, you may be eligible to participate in the research study.

The purpose of this research project is to study the relationship between shift hours-work (twelve versus eight) and nurses' burnout.

THIS STUDY WILL BE CONDUCTED ON ACUTE CARE UNITS OF

LAKELAND MEDICAL CENTER

1234 NAPIER AVE., SAINT JOSEPH, MI.

FOR MORE INFORMATION CONTACT: LILIANE NYAMUZIGA AT (269) 697-9092

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