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Missed Nursing Care: Accounting for Education, Experience, and Job Satisfaction in Registered Nurses

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Missed Nursing Care: Accounting for Education, Experience, and Job Satisfaction in Registered Nurses

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by

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ABSTRACT

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Aim. The aim of this study was to examine missed nursing care in the context of academic preparedness, years of experience, and job satisfaction and determine predictors of missed nursing care.

Background. Patient care that is omitted or delayed is known as missed nursing care. Failure to provide the necessary care interventions on time can lead to decreased patient outcomes. Academic preparation, the number of years of nursing experience, and job satisfaction can also play a pivotal role in patient outcomes. Limited studies have assessed academic preparedness and years of nursing experience on missed nursing care while also examining job satisfaction. It is currently unknown how missed nursing care relates to RN-BSN nurses.

Method. The MISSCARE Survey was distributed electronically to members of the Academy of Medical Surgical Nurses. Descriptive, inferential analysis and regression analyses were conducted using the electronic survey results.

Results. One hundred sixty-eight registered nurses from across the United States were included in the sample for this study. Using the MISSCARE Survey, results found there were no significant differences when examining academic preparation, years of experience, or job

satisfaction on the amount of care missed at the bedside between ADN, RN-BSN and traditional BSN nurses. Job satisfaction was the only predictor for missed nursing care, as nurses who are more satisfied are less likely to miss care.

DEDICATION

I dedicate my doctoral journey to my father, Jerry Colburn. He pushed me hard in academics from a young age knowing he wanted me to have a better life than he ever had. I know he is proud of me and my accomplishments and is rejoicing in heaven that this long journey is finally over.

To my husband, Jason, thank you for always supporting me and encouraging me in my academic journey, especially when I wanted to give up. I love you from the bottom of my heart.

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To my dear friend, Adrienne Wilk. Thank you for pushing me to do this journey with you. I would have never gotten this far if you had not planted the tiny seed of getting a PhD. You are next and I cannot wait to celebrate with you when your journey is over.

To Dr. Andrea Poynter, WE MADE IT!

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1. Introduction

The purpose of this study was to examine missed nursing care in the context of academic preparedness, years of nursing experience, and job satisfaction within the acute care setting. An overview of the problem, purpose of the study, the significance of the problem, theoretical framework, conceptual and operational definitions, specific aims, limitations and delimitations, and research questions are detailed in this chapter.

Nursing environments can be exceptionally intricate due to increased patient care demands. It is frequently challenging for a nurse to fulfill all nursing care during a given shift. Complex circumstances become a foundation for the nurse to omit, delay, or abbreviate care delivered to patients. Missed nursing care is defined as "any aspect of required patient care that is either omitted (either in part or in whole) or delayed" (Kalisch, Landstrom, & Hinshaw, 2009, p. 1510). More than 70% of nurses omit nursing care interventions in acute care settings, while at least 44% admit to excluding required assessments (Kalisch, Landstrom, & Williams, 2009). According to a study by Kalisch, Landstrom, and Williams (2009), frequently missed nursing activities occurring at least 80% of the time included ambulation, assessing the effectiveness of medication, turning the patient every 2 hours, giving mouth care, conducting patient teaching, and giving PRN medication on time.

The Agency for Healthcare Research and Quality (n.d.-a) recognizes errors of omission or failure to do what is necessary as representing a large proportion of errors that occur. Omissions arise due to health care professionals underusing services such as delaying treatment or not giving proper medication (Agency for Healthcare Research and Quality, n.d.-b) and indicate missed opportunities to improve quality care and patient outcomes. As nurses plan, coordinate, deliver and evaluate interventions prescribed by health care providers, delaying or

omitting nursing interventions is a form of medical error and type of medical underuse (Agency for Healthcare Research and Quality, 2019). These acts of nursing care omissions, known as missed nursing care, contribute to adverse patient outcomes (Piscotty & Kalisch, 2014) and have undesirable consequences on a patient's quality of life (Papastavrou et al., 2013). Omissions in care indicate missed opportunities to improve patient outcomes and quality of care.

The World Health Organization (n.d.) defines quality of care as services that are provided to patient and individual populations, which must be safe, timely, effective, people-centered, efficient, and equitable to improve health outcomes. Giving timely care requires a reduction in delays of providing care to patients. Missed nursing care results in the failure to carry out or delay necessary interventions, guidelines, or protocols established for the patient. When standards of care are not achieved, quality of care diminishes. Quality ratings are linked to the number of nursing tasks left undone (Sochalski, 2004). Tasks left undone provide missed opportunities to deliver necessary quality care and occurs to nurses, regardless of education or experience level.

The educational preparation of a nurse may impact patient care outcomes (Benner et al., 2010). As a response to the change in patient care demands and adverse patient events, such as medication errors, the Institute of Medicine (2010) decreed that at least 80% of the nursing workforce have a minimum of a baccalaureate degree by 2020. Nursing students pursuing a baccalaureate degree have the advantage of more significant, in-depth learning. Baccalaureate prepared nurses are well versed in health promotion, case management, leadership, and critical thinking abilities needed to foster practice environments that easily recognize a patient's deteriorating health (Benner et al., 2010).

The number of years of experience of a nurse can also impact patient care outcomes. Nursing experience is defined as the number of years a nurse works (Kutney-Lee et al., 2013). As nurses move from a novice to an expert role, years of experience within a healthcare setting generates a benefit to both patients and organizations (Benner, 1982). Years of nursing experience impacts nursing expertise and plays a vital role in quality care outcomes (McHugh & Lake, 2010).

Providing high quality patient care influences job satisfaction. Nurses that can provide patient centered care, including providing direct patient care and interacting more frequently with patients, are more satisfied in their roles (Best & Thurston, 2004; Stalpers et al., 2016). However, what has not been thoroughly addressed is job satisfaction related to missed nursing care. Kalisch, Tschannen, and Lee (2011) found that nurses who reported missing less nursing care were more satisfied with their jobs, but few studies have reported the link between missed nursing care and job satisfaction.

Statement of the Problem

Nurses can find it extremely difficult to complete all nursing care during their shift. Few studies have examined the relationship between academic preparedness and nursing experience on missed nursing care. Likewise, limited studies have explored job satisfaction while assessing academic preparedness and years of experience on missed nursing care. Health care facilities and academic programs must understand these concepts to improve both nursing students' and nurses' clinical competency. This study also focused on determining whether academic preparation, years of experience and job satisfaction are predictors of missed nursing care while exploring if missed nursing care is related to how satisfied nurses are in their current position.

Kalisch and Xie (2014) note that numerous studies have been conducted over the last decade that determines what nursing care is most frequently missed and why it occurs. Furthermore, several studies address how to reduce missed nursing care including increasing staffing levels (Cho et al., 2015; Dabney & Kalisch, 2015; Kalisch, Tschannen, & Lee, 2011) and implementing teamwork strategies (Kalisch & Lee, 2010).

Unfortunately, few studies have examined academic preparedness and years of nursing experience on missed nursing care while also looking at job satisfaction. Even fewer studies have looked at job satisfaction as a predictor of missed nursing care. Additionally, no studies to date have addressed the amount of nursing care missed when examining those nurses who have achieved higher education and transitioned from a diploma or associate degree to a post-baccalaureate degree (RN - BSN).

Purpose of the Study

The purpose of this study was to examine missed nursing care in the context of academic preparedness, years of experience, and job satisfaction. Specifically, this study compared missed nursing care between associate degree (ADN) registered nurses, RN – BSN registered nurses, and traditional baccalaureate (BSN) registered nurses while considering the nurse's years of experience. Additionally, nurses were asked how satisfied they are in their current role. Academic preparation, years of experience, and job satisfaction were also examined on whether they can predict missed nursing care.

This knowledge can help organizations alleviate missed nursing care in the future and help them develop potential strategies to improve patient outcomes and increase nursing satisfaction. Moreover, academic programs can use this information to help understand what

nursing interventions are missed and provide a foundation to help build these concepts into the clinical portion of the curriculum while prioritizing clinical needs.

Specific Aims

The specific aims of this study are as follows:

Specific Aim I: Use the MISSCARE Survey to determine the most missed nursing interventions by ADN nurses, RN-BSN nurses, and traditional BSN nurses.

Specific Aim II: Determine job satisfaction when care is missed by ADN nurses, RN-BSN nurses, and traditional BSN nurses.

Specific Aim III: Use the MISSCARE Survey to determine if there is a difference in the amount of missed nursing care reported by ADN nurses, RN – BSN nurses, and traditional BSN nurses.

Specific Aim IV: Use the MISSCARE Survey to determine if there is a difference in the amount of missed nursing care reported by ADN nurses, RN-BSN nurses, and traditional BSN nurses while considering years of experience.

Specific Aim V: Determine if academic preparation, years of experience, and job satisfaction predicts missed nursing care.

Research Questions

1. What nursing care interventions are most missed by ADN registered nurses, RN-BSN registered nurses and traditional BSN registered nurses?
2. Is there a difference in job satisfaction between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses who report missed nursing care?
3. Is there a difference in the amount of missed nursing care between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses?

4. Is there a difference in the amount of missed nursing care between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses after adjusting for years of experience?

5. Does academic preparation, years of experience, and job satisfaction predict missed nursing care?

Theoretical Framework

The theoretical framework for this study is Nursing Intellectual Capital (NIC). Christine Covell (2008) developed the middle-range theory of NIC to understand how nurse's knowledge, skills, and experience affect patient outcomes. NIC stresses the impact of nursing knowledge and nursing care on patient and organizational outcomes.

The NIC theory focuses on nursing knowledge within the healthcare organization and how that knowledge is translated to patient and organizational outcomes. NIC is rooted within two mutually dependent concepts: nursing human capital and nursing structural capital; and has three propositions: 1.) nursing human capital influences patient and organizational outcomes; 2.) nursing structural capital influences patient outcomes; and 3.) nurse staffing and employer support for continuing professional development affect human capital.

NIC is derived from intellectual capital theory (Covell, 2008). Intellectual capital describes the framework of knowledge within an organization and how knowledge affects outcomes (Bontis, 1999). Within nursing, NIC is nursing knowledge that is transformed into nursing care and organizational performance. Intellectual capital theory encompasses the concepts of human capital, structural capital, human capital investment and human capital depletion, and business performance outcomes (Bontis & Fitz-enz, 2002). In nursing, the

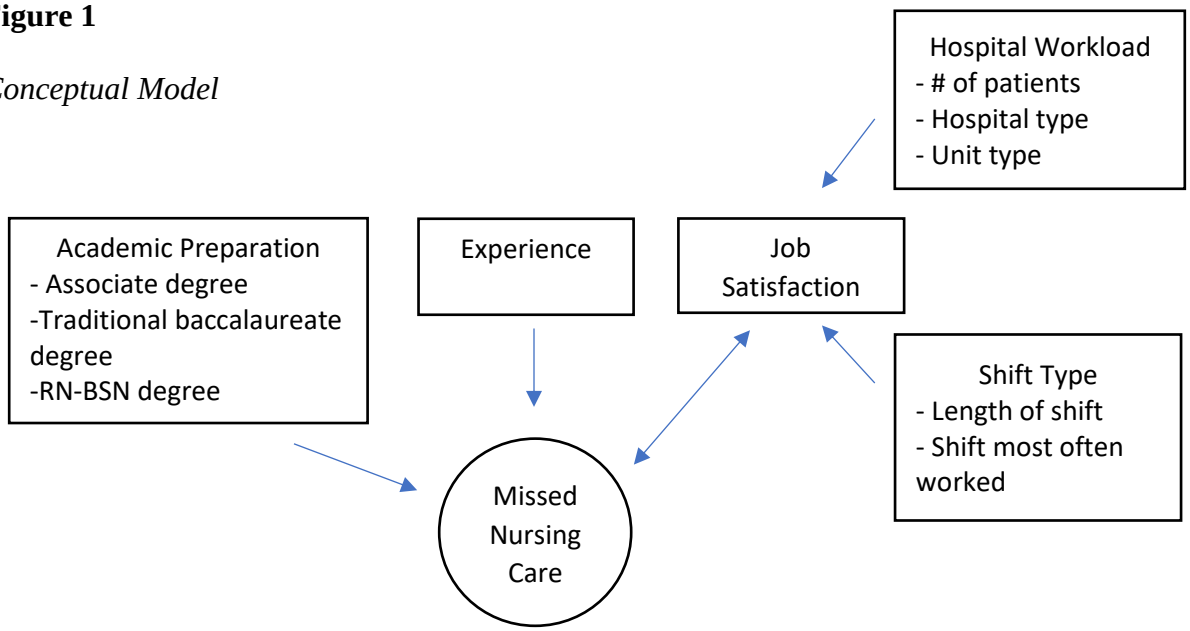
concepts of intellectual capital theory influence the growth of nursing knowledge which impacts organization and patient outcomes.

With a deficiency of a comprehensive understanding of nursing knowledge within the literature, Covell (2008) redefined each intellectual capital theory concept to ensure its relevance within the nursing discipline (Covell, 2008). Human capital refers to the employee's skills, knowledge, and experience within an organization (Stewart, 2001). Within the NIC theory, nursing human capital is "the knowledge, skills, and experiences of nurses" (Covell, 2008, p. 97). Structural capital includes the knowledge that exists within the organizational structure, databases, and systems (Stewart, 1997). Nursing structural capital refers to the resource's nurses have to guide knowledge to deliver quality patient care and is expressed by care maps, protocols, and practice guidelines. Human capital impacts business performance outcomes and leads to organizational profits and employee retention (Bontis & Fitz-enz, 2002). In nursing, nursing performance reduces adverse events and increases the quality of care while organization performance improves organization outcomes, including recruitment and retention of nursing staff. Human capital investment refers to the investment of an employees' knowledge and skills through training and human capital depletion refers to the loss of valuable knowledge and skills through the loss of employees (Bontis & Fitz-enz, 2002). Employer support of nurse continuing professional development increases nursing knowledge and skills through professional development activities and is equivocal to human capital investment. In a healthcare organization, nurse staffing is the available supply of nurses with the knowledge, expertise, and skills to care for patients. The loss of skilled nursing staff can be detrimental to the organization by decreasing quality outcomes.

For the purpose of this study, the investigator created a conceptual model as appears in Figure 1. Theoretical linkages are tied to the NIC theory and hypothesized relationships were built on inferences from the literature. Within this study, the number of years of experience of the nurse and the knowledge gained from academic preparation, whether ADN, RN-BSN, and traditional BSN degrees form the basis of human capital, are independent variables and can be indicators of missed nursing care. Missed nursing care is the dependent variable and is related to nursing performance and organizational performance. When nursing care is not performed, missed nursing care occurs and has a negative effect on patient outcomes. Additionally, job satisfaction can affect the recruitment and retention of nurses and is characterized as an organizational outcome. Job satisfaction can also affect missed nursing care and patient outcomes. It is proposed that there is a relationship between organizational outcomes and patient outcomes. Hospital workload and shift type affect nurse staffing and are organizational characteristics that can affect job satisfaction.

Figure 1

Conceptual Model



Conceptual Definitions

The following terms are conceptually defined within the context of this study.

Missed Nursing Care

Missed nursing care is defined as "any aspect of required patient care that is omitted (either in part or in whole) or delayed" (Kalisch, Landstrom, & Hinshaw, 2009, p. 1510).

Academic Preparation

Academic preparation is divided into three main academic categories: ADN registered nurses, traditional BSN registered nurses, and RN-BSN registered nurses. ADN nurses are defined as nurses who graduated from an associate degree program at a community college, technical school, vocational school, or four-year university (Ellis & Hartley, 2012). Traditional BSN registered nurses are defined as nurses who graduated from a traditional baccalaureate program at a four-year institution or an accelerated baccalaureate degree program (Ellis & Hartley, 2012). RN – BSN registered nurses are defined as nurses who first obtained either a diploma or an associate degree and then returned to school to complete a baccalaureate degree (Ellis & Hartley, 2012).

Experience

Experience is defined as the amount of time in years spent in nursing practice since licensed as a registered nurse (McHugh & Lake, 2010).

Job Satisfaction

Job satisfaction is defined as the extent to which a person likes or dislikes their job (Spector, 1997).

Hospital Workload

Hospital workload is defined in three ways, by the number of patients cared for on the current or last shift including admissions and discharges, the type of hospital, and the type of unit worked on.

Shift Type

Shift type is defined in two ways, the number of work hours and which shift is most often worked.

Operational Definitions

Missed Nursing Care

Missed nursing care was measured in Section A of the MISSCARE Survey as nurses could choose a scale of "always missed", "usually missed", "sometimes missed", "rarely missed", and "never missed" for each nursing task (Kalisch & Williams, 2009).

Academic Preparation

ADN registered nurses are nurses who chose associates degree as the highest education level obtained within the demographics section of the MISSCARE Survey. Traditional BSN degree registered nurses are nurses who chose the baccalaureate degree as highest education level obtained within the demographics section of the MISSCARE Survey. RN-BSN registered nurses are those nurses who chose a baccalaureate degree as their highest level of education obtained and chose licensed practical nurse, RN diploma, and/or associates degree education within the demographics section of the MISSCARE Survey.

Experience

Experience was measured within the demographics of the MISSCARE Survey by asking nurses the timeframe of experience within their role.

Job Satisfaction

Job satisfaction was measured using the demographic section of the MISSCARE Survey with the question, “How satisfied are you in your current position?” with responses including very satisfied, satisfied, neutral, dissatisfied, and very dissatisfied.

Hospital Workload

Hospital workload was measured using the demographic section of the MISSCARE Survey with three questions related to the number of patients cared for including admissions and discharges and one question related to the type of unit worked on. An additional question was added as an addendum to the MISSCARE Survey which asked the type of hospital worked in.

Shift Type

Shift type was measured using the demographic section of the MISSCARE Survey with two questions related to the number of hours worked and the shift most often worked.

Limitations

Asking nurses to report care that is missed on a shift was a limitation as nurses may not want to incriminate themselves. Maintaining confidentiality by de-identifying participants and allowing access to the survey at any time and from any location allowed participants to self-report missed care in a non-incriminating environment. Convenience sampling of nurses occurred within this study and therefore limited the generalizability of the results. However, convenience sampling for this type of study is appropriate due to the ethical considerations of missing care. Furthermore, the MISSCARE Survey does not provide a direct measurement but is based on the perceptions of the nursing staff, which could be a limitation.

Delimitations

Several delimitations have been identified for this study. First, the sample population for this study was limited to registered nurses working in an acute care facility. Nurses who worked in intensive care, intermediate care, medical, surgical, cardiac, neurology, orthopedic, urology, respiratory, and oncology units were surveyed. These units were chosen because the MISSCARE Survey was created from research conducted on medical-surgical and intensive care units (Kalisch, Landstrom, & Williams, 2009). Second, this study utilized only two sections of the MISSCARE Survey; the demographics section and Section A – Missed Nursing Care. The demographics section helped distinguish educational level, years of experience, and how satisfied nurses are in their current position. Section A contains patient care activities that are most likely to be missed on any given shift. Section B of the survey was not used as this section refers to reasons for missed care and is not a part of the scope of this study.

Significance of the Study

Missed nursing care is a potentially serious medical error that has received limited attention (Agency for Healthcare Research and Quality, 2019). As nurses plan, deliver, and coordinate interventions to help treat patients, missing care interventions can impact a patient's response to care and can affect patient safety, quality of care, and health outcomes. Missed nursing care has only been defined since 2006 (Kalisch, 2015) and it is imperative to make sure this concept is explored in totality. While academic preparation continues to be at the forefront of debate in health care delivery, it is essential to examine the role educational preparation has on missed nursing care. As years of experience contribute to nursing practice expertise and potentially decreases negative outcomes and increases quality of care given, this concept should

also be considered. Likewise, job satisfaction should be explored in relation to missed nursing care, specifically looking to see if job satisfaction can predict missed nursing care.

Summary

This correlational study addresses the types of care most missed by nurses in an acute care setting when examining educational background, experience, and job satisfaction. The purpose of this study was to explore the amount of missed nursing care by ADN registered nurses, RN – BSN registered nurses, and traditional BSN registered nurses when accounting for years of experience and job satisfaction. This is the first known study to use the middle range NIC theory to explore missed nursing care by examining academic preparation and experience of registered nurses while looking at nursing job satisfaction. One proposition of this NIC theory is that nursing human capital is associated with patient outcomes. Within this study, the concept of human capital was measured by the amount of academic preparation and experience the nurse had. Patient outcomes were measured by the MISSCARE Survey, specifically the care that was reported as missed by the nurse.

Chapter 2. Literature Review

This chapter includes a review of professional literature related to missed nursing care, nursing education, nursing experience, job satisfaction, and nursing intellectual capital theory. Methods used to search the literature are also included.

Method of Literature Search

Databases used for this literature search were Cumulative Index to Nursing and Allied Health Literature (CINAHL), Health Source: Nursing/Academic Edition, the Nursing & Allied Health Collection: Comprehensive and PubMed. Key terms used in the search were missed nursing care, nursing education, nursing experience, quality of care, job satisfaction, and nursing intellectual capital. To present a broad spectrum of knowledge, dates were not limited. Studies prior to 2000 were included to provide historical context.

Missed Nursing Care

With just over 3 million nurses in the healthcare workforce in the United States (US Bureau of Labor Statistics, n.d.), missing nursing care can impact patient safety and quality of care. Historically, missed nursing care is identified as nursing care that was 'left undone' (Aiken et al., 2001; Sochalski, 2004). Missed nursing care has been studied extensively in the last 15 years. Kalisch (2006) first coined missed nursing care from a qualitative study exploring perceptions of medical-surgical registered nurses and nursing assistants on nursing care interventions missed most on a shift and the reasons why the care was missed. This qualitative study led Kalisch, Landstrom, and Hinshaw (2009) to further define the concept of missed nursing care and develop a quantitative survey tool (Kalisch & Williams, 2009).

The MISSCARE Survey

While there have been previous studies on the adverse effects of omitted nursing care, no studies described variations in settings and factors associated with specific missed nursing care interventions (Kalisch, 2015). The Missed Nursing Care Survey (MISSCARE Survey) was developed to determine the extent of nursing care interventions missed and the specific nature of the problem. The instrument was designed based upon findings from a focus group study (Kalisch, 2006) and a concept analysis by Kalisch, Landstrom, and Williams (2009). The survey is reflective and captures the perceptions of participants.

The MISSCARE Survey has two survey components and a demographics section. Part A of the survey depicts the interventions of nursing care. Twenty-four nursing care items are listed, and survey participants are asked to self-report their perceptions of how often each of the specific nursing care elements is missed based on a five-point Likert-type scale of "rarely," "occasionally," "frequently," "always," or "non-applicable." A factor analysis, conducted when developing the survey, identified that each nursing element could be classified as one of four factors: assessment, interventions – individual needs, interventions – basic care, and planning (Kalisch, Landstrom, & Williams, 2009). Part B of the survey lists reasons for missed care based on three factors: communication, material resources, and labor resources. Subcategories of the three factors identify 17 specific reasons why nursing care is missed and respondents are asked to rate each item using the scale of “significant factor”, “moderate factor”, “minor factor”, or “not a reason for missing nursing care” (Kalisch, 2015).

Additionally, the survey includes a demographic section and asks several questions related to highest level of education, including highest nursing degree, years of experience in current role and current patient care unit, job satisfaction, the number of patients cared for during

the last shift, intent to leave, and adequacy of staffing within the unit. The instrument was psychometrically tested for reliability, validity, and acceptability (Kalisch & Williams, 2009) and was found to be a reliable, valid, and accepted instrument to use. The content validity index was 0.89 and the test-retest reliability was 0.88 for part A of the instrument (Kalisch, 2015). An exploratory and confirmatory factor analysis was performed on part B of the survey with factor loading of 0.35 to 0.85.

Missed nursing care is a global problem and not just limited to the United States. The MISSCARE Survey has been used within the United States, Lebanon, Australia, Turkey, South Korea, Brazil, Italy, and Iceland. The survey was adapted to specific language and cultural contexts in Turkey, South Korea, Brazil, Italy, and Iceland (Bragadorttir et al., 2014; Cho et al., 2015; Kalisch et al., 2012; Siqueria et al., 2013; Verrall et al., 2014). Australia and Lebanon used an English version of the survey, as nurses within these countries could speak and read English (Kalisch, 2015; Kalisch et al., 2013).

Nursing Perceptions

Nursing perceptions on missed nursing care can vary due to the mix of registered nurses and nursing assistants working together. While nurses and nursing assistants normally work together as a team, there are certain nursing activities that must be completed by licensed personnel while other activities can be solely provided by a nursing assistant; some activities and responsibilities can also be shared between the staff. Kalisch (2009) found that nurses reported missing more nursing care activities than nursing assistants, however, nurses' perceptions of care not performed by nursing assistants was higher than perceptions of actual nursing assistants. McMullen et al. (2017) also found that nurses (85%) reported more missed nursing care than nursing assistants (67%) in planning. In contrast, Orique et al. (2016) completed a single study

within a hospital system in California and found that nursing assistants reported more missed care than nurses.

Variations in reporting missed nursing care have also been noted by nurse leaders. Kalisch and Lee (2012) found that nursing staff reported lower missed nursing care than nurse leaders due to leaders often overestimating the amount of care that is missed. Nurse leader perceptions of missed nursing care are often higher than reported by nurses. Kalisch (2015) noted that lack of congruence among staff and leaders can have serious consequences for the organization and individuals including distrust and disrespect.

Most Frequent Missed Activities

Since the development of the MISSCARE Survey, many studies have identified perceptions of nursing staff on frequently missed nursing care activities. Missed nursing care activities are normally reported by the amount and type of missed care. Missed nursing care is widespread and varies by location and organization.

Kalisch, Landstrom, and Williams (2009) sampled 459 nurses in three Michigan hospitals. At least 73% of nurses reported missing nursing interventions and basic care, 71% reported missing planning activities and 44% reported to miss assessment activities. Six missed care items were found to be missed at least 80% of the time: ambulation (84%), assessing the effectiveness of medications (83%), turning the patient every 2 hours (82%), giving mouth care (82%), conducting patient teaching (80%) and giving PRN medication on time (80%). The least amount of care missed by nurses included patient assessments (17%) and monitoring bedside glucose (26%). The authors felt that patients were placed in jeopardy because of the large errors of omissions.

In a comparison of nurses within the United States and Turkey, nurses in Turkey reported missing less nursing care than nurses within the United States (Kalisch et al., 2012). At least 17 nursing activities were missed more frequently by nurses in the United States than nurses in Turkey, including ambulation, feeding patients while the food is still warm, turning patients, medication administered within 30 minutes, setting up meals, assessing vital signs, monitoring intake and output, documentation, patient education, bathing/skin care, emotional support, handwashing, assessment of IV or central line site, assessing effectiveness of medications, assisting with toileting, responding to call lights within 5 minutes, and emotional support. The top three care activities missed between both countries included ambulation, feeding the patient while the food is warm, and turning the patient every 2 hours. Handwashing and vital signs were the least amount of care missed between both countries. Turkey's nurses reported IV/central line site care and assessments as the least missed nursing care activity (16.6%), whereas the United States lowest missed nursing care activity reported was patient assessments performed each shift (14.7%). Ambulation three times a day was the highest missed nursing care activity between both Turkey and the United States (42.2% vs 86.6%). The differences between the missed care were reported by the authors to be due to availability of nurses since Turkey has much fewer nurses per 100,000 people than the United States.

Kalisch et al. (2013) examined missed nursing care in Lebanon and the United States. Nurses in Lebanon reported less missed nursing care than nurses within the United States ($t = 11.53$, $p < 0.001$). Patient assessments were not completed as often in Lebanon than the United States, however, Lebanon reported a significantly lower amount of missed nursing care for at least 21 of the 24 activities. Emotional support, the patient's shift assessment, and discharge planning were the only three nursing care activities that were not significantly different between

the two countries. The authors felt that Lebanese nurses missed less care due to fear of punishment within the culture.

In a study sampling 3143 registered nurses and 943 nursing assistants within 10 hospitals in the Midwest, Kalisch, Tschannen, Lee, & Friese (2011) determined that ambulation at least three times per day was the most missed nursing care activity, being reported by at least 32.7% of nursing staff. Other items of frequently missed care included attending care conferences (31.8%) and mouth care (25.5%). Ambulation was one of the top 5 nursing activities reported as missed the most across all 10 hospitals. The least frequently missed care activities included patient assessments, glucose monitoring, and vital signs. The authors concluded that the most frequently missed care items including ambulation and turning were often very time-consuming activities and usually required help, which placed them lower on the priority list.

Palese et al. (2015) studied missed nursing care within 12 hospitals in Italy. A total of 252 nurses and 165 nursing assistants were sampled. Ambulation was the most perceived missed activity in frequency (91.4%) while turning the patient every 2 hours was missed by 74.2% of the staff. Administering medications at the right time was missed by 64.6% and patient education was missed by 63.1%. The nursing activities that were missed less often included patient bathing and skin care (25.5%), handwashing (29.3%), bedside glucose monitoring (30.3%) and skin/wound care (31.8%). The reasons for missed care within this study by nurses were due to human resources and patient's health conditions.

Missed nursing care was compared on units with high staffing and units with low staffing in South Korea (Cho et al., 2015). Nurses in the higher staffed units reported less missed nursing care activities (M=1.39) than the lower staffed units (M=1.51). Ambulation, bathing/skin care, and mouth care were the most frequently missed care activities for higher staffed units. On lower

staffed units, mouth care, bathing/skin care, and turning the patient every 2 hours were the most missed care activities. The least amount of missed nursing care activities was the same between both high staffed and low staffed areas including discharge planning, call light response, patient assessments, intake/output monitoring, taking vital signs, and bedside glucose monitoring. The authors suggested that missed nursing care was reflected through internal processes of decision making in which nurses were focused on providing for the patient's basic needs.

McMullen et al. (2017) replicated the study from Kalisch, Landstrom, and Williams (2009) in the state of New York. Data was collected from 537 nursing staff which included registered nurses, licensed practical nurses, and nursing assistants. Three categories of nursing care activities were reported including assessment, planning, and interventions. At least 71% of staff reported to miss at least one assessment activity with the most missed activities being bedside glucose monitoring (87%), assessment (82%), and handwashing (81%). For the intervention category, at least 93% of staff missed at least one nursing activity and the most frequently missed care activity was setting up meals for patients (54%). For the planning category at least 82% missed at least one planning activity with patient discharge planning and teaching being the most missed activity (74%). The authors noted that this study merged the four categories found by Kalisch, Landstrom, and Williams (2009) into three categories by including both subsections of interventions into one category. Both studies reported high amounts of missed care, but data were similar in nature (McMullen et al., 2017).

Nursing Education

The licensure process for nursing candidates continues to test a common core of nursing knowledge, regardless of whether the candidate has received an ADN or BSN degree. Students have various ways to enter the nursing profession yet those that graduate from an associate

degree often do not continue the path toward advanced education (Gorski et al., 2015). However, the pursuit of a BSN prepared nursing force has maintained focus since the introduction of the American Nurses Association's 1965 position paper on Nursing Education. Between 55 and 65% of registered nurses within the United States hold a baccalaureate degree or higher (National Council of State Boards of Nursing, 2017).

Nursing Education on Nursing Practice

Educational preparation may contribute to the frequency of care activities performed by the nurse. Assessing the effect that nursing education can have on the entry level of practice, Smith (2002) identified variances in practice between ADN nurses and BSN nurses within their first six months of practice. Using a secondary analysis of the 1999 RN Practice Analysis, both sets of nurses performed care activities of 189 basic nursing functions with similar frequencies. Activities performed the most frequent included assessing pain levels, administering pain medication, hydrating patients, administering medications, and observing measures to prevent infection. More advanced skills, such as patient education and delegation/supervision activities were completed less frequently by both groups. These findings differ from the research conducted by Young et al. (1991). Young et al., (1991) addressed the frequency of BSN nurses completing complex tasks such as evaluating patient outcomes, physical exams, identifying nursing diagnoses, and completing psychosocial exams. They hypothesized and found that BSN nurses were more likely to perform more complex tasks at least by four to ten percentage points higher than an ADN nurse depending on the task.

Clinical performance differences between ADN and BSN nurses have also been recognized. Leroy et al. (2014) addressed clinical performance from a qualitative description of nurse managers and clinical nurse leaders. Discussions from the eight participants concluded that

success was determined through individual characteristics and not necessarily the type of degree earned. Moreover, critical, and clinical thinking of ADN nurses were a cause of concern even though clinically they performed just as well as the BSN nurses. The researchers concluded that ADN nurses contribute individual attributes to the nursing profession, but encouragement is still focused on the continuation of education to at least a BSN level (Leroy et al., 2014).

Nursing Education on Patient Outcomes

Education levels of hospital nurses and patient mortality and failure to rescue have been studied since the early 2000s. Aiken et al. (2003) realized that there was much evidence linking nurse staffing to patient outcomes but no evidence that looked at how the educational composition of the nurse related to those outcomes. Their seminal work examined data from 232,342 surgical patients discharged from adult general Pennsylvania hospitals (n=168) from 1998-1999. Findings suggested that for every 10% increase in the number of nurses with a BSN, patient mortality and failure to rescue decreased by 5%. However, findings also concluded that the type of educational credential for nurses with a diploma and associates degree, when looked at separately, was not a factor in patient outcomes. Likewise, when looking at the impact of care by a BSN prepared nurse, Yakusheva et al. (2014) concluded that a 10% increase in a BSN nurse dose (the amount of education/experience/skill mix of the nurse and patient acuity level) was associated with a 10.9% reduction in in-hospital mortality.

Using the same patient and nurse data as Aiken et al. (2003), Kutney-Lee et al. (2013) completed a longitudinal study and compared data from 1999 and 2006. Increasing the hospital's nursing staff with a BSN degree by ten percent was associated with a reduction of failure to rescue and mortality rates when looking at the same period. They estimated at least 500 preventable deaths would have occurred by raising the number of BSN prepared nurses by ten

percentage points, whereas at least 2100 lives would be saved if all hospital workforces contained at least 80% of BSN prepared nurses.

Blegen et al. (2013) examined nurse-sensitive patient outcomes against nursing education. They hypothesized that hospitals with a higher proportion of BSN degree prepared nurses would have better patient outcomes when controlling for different hospital characteristics. The hypothesis was supported and hospitals that employed a higher number of BSN prepared nurses had lower rates of the length of stay, hospital-acquired pressure ulcers, postoperative deep vein thrombosis/pulmonary emboli, as well as failure to rescue and congestive heart failure mortality (Blegen et al., 2013).

Nursing Experience

Nursing experience is defined as the number of years that a nurse works (Kutney-Lee et al., 2013). Years of nursing experience can contribute to nursing quality (Aiken et al., 2009; Dunton et al., 2007). However, the number of years spent in nursing practice does not automatically assume that the nurse is an expert. Benner (1982) explored the differences between the experienced and novice nurse's clinical competency within her framework Novice to Expert, appraising nurses as being experts not based on the number of years of experience but rather that expertise comes from the transformation of ideas through clinical situations. Bobay (2004) suggested that nursing experience is necessary but does not provide a sufficient way to measure nursing practice and clinical competency on patient outcomes.

Most literature found on nursing experience is related to patient outcomes. Two studies found inverse relationships on years of nursing experience and patient outcomes. Blegen et al. (2001) examined years of nursing experience in their secondary analysis of two prior studies within the United States. Their results concluded that nurses with more experience provide a

higher quality of care to patients. Specifically, they found that more experienced nurses had lower medication errors in both studies and had a lower patient fall rate in one of the studies. Their suggestions for future efforts of managers included looking at both experience level and the mix of nursing staff as to not compromise patient outcomes. Furthermore, Tourangeau et al. (2003) looked at years of nursing experience on clinical units in Ontario, Canada. Their findings concluded that each additional mean year of nursing experience was associated with four fewer patient deaths per 1000 patients within non-urban hospitals and six fewer patient deaths per 1000 patients within urban hospitals.

Other studies suggest that nursing experience has no significant effect on patient outcomes. In their seminal work on nurse education and patient mortality, Aiken et al. (2003) also looked at nursing experience in relation to patient mortality. Nurses within the study data had a mean of 14.2 years of nursing experience. Their findings indicate that years of experience did not independently predict failure to rescue or mortality in patients, nor did it modify the association of nursing education on patient outcomes. Furthermore, they suggested that thinking of nursing experience as more important than the type of education of the nurse may be incorrect.

Similarly, nurse experience and patient safety outcomes were not related in a study by McGillis et al. (2004). This study looked at questionnaires filled out by unit managers and administrative records of patients within adult medical, surgical, and obstetric care units (n=77) within 19 hospitals in Ontario, Canada. Findings indicated that while a higher number of wound infections were found on units with less experienced nurses, the relationship was more associated with nurse staffing variables and employing a lower number of nursing staff.

Kutney-Lee et al. (2013) completed a study looking at the same data as Aiken et al. (2003). Using longitudinal methods, they found that nursing years of experience did not affect patient outcomes, even when the average years of experience across hospitals had increased significantly. They advised that nursing experience cannot be substituted for higher levels of education.

Education and Experience on Missed Nursing Care

While missed nursing care has been extensively researched over the last fifteen years, little has been found in the literature pertaining to nursing education and years of nursing experience on missed nursing care. Studies conducted perceive education and experience as being indicators of missing nursing care. No known studies to date have identified the impact of nursing education or nursing years of experience on missed nursing care as primary research questions.

Education

Associate degree education has been reported to be a positive indicator of missed nursing care (Kalisch, Landstrom, & Williams, 2009; McMullen et al., 2017). Kalisch, Landstrom, and Williams (2009) surveyed 459 nurses. Almost 51% of the nurses surveyed held a baccalaureate degree while 42.4% had an associate degree in nursing. Nurses who had an associate degree reported more missed nursing care than those with a baccalaureate or a diploma degree ($p = .023$). Associate degree nurses reported missing more care in all four factors areas of missed nursing care: planning, basic care, interventions, and assessment. Planning and basic care were the two most missed areas for associate degree nurses.

Likewise, McMullen et al. (2017) found that planning was the most significant missed area of nursing care in their study, with 85% of registered nurses (n=180) reporting that area of

care as most missed. However, there was no differentiation of the factors between the levels of academic preparation. McMullen et al. (2017) replicated the study by Kalisch, Landstrom, and Williams (2009) and surveyed 537 registered nurses, licensed practical nurses, and nursing assistants. Sixty-five percent of the respondents were registered nurses. Twenty percent of registered nurses had a baccalaureate degree (n=105), while 32% (n=171) had an associate degree. Associate degree education was found to be significantly related to missing care ($p<0.05$). Like Kalisch, Landstrom, and Williams (2009), baccalaureate degree and diploma nurses reported less missed care than associate degree nurses, but no specific information was given on what nursing care interventions were reported as being missed.

On the contrary, several studies reported no significant association between the level of education of the nurse and missed nursing care (Castner et al., 2015; Cho et al., 2015; Orique et al., 2016). Castner et al. (2015) examined nursing education on missed nursing care in the context of a hospital merger. While 50% of nurses had a baccalaureate degree or higher, the level of nursing education did not affect perceptions of missed nursing care ($p = 0.145$). Cho et al. (2015) studied the effects of increasing nursing staff on missed care in a South Korean hospital by comparing high staffing areas and low staffing areas. Over 30% of nurses within each unit had a baccalaureate degree. Results suggest that education was not significantly related to the amount of missed nursing care on both units ($p = 0.566$) however, the specific nursing interventions missed between each educational level was not addressed in the study. Similarly, Orique et al. (2016) examined missed nursing care and nurse workload in the state of California, where there is legally mandated nurse to patient ratios. At least 47.3 % of the respondents held an associate degree. The authors stated that educational preparation was not significantly

associated with missed nursing care but did not provide statistical analysis of the results (Orique et al., 2016).

Experience

Nursing years of experience has been associated as being a positive indicator for missed nursing care. Kalisch and Lee (2010) found nurses with 5 to 10 years of experience ($p = .010$) and those with greater than 10 years of experience ($p= .003$) perceived more missed care than those with equal to or less than six months of experience. Likewise, Kalisch, Tschannen, Lee, and Friese (2011) found that nurses with fewer years of experience reported less missed nursing care ($p < 0.001$). Kalisch et al. (2013) investigated missed nursing care within the United States and Lebanon. Nurses who had greater than two years of nursing experience reported more missed nursing care than those who had less than six months of experience. When looking at missed nursing care within the context of a hospital merger, Castner et al. (2015) found that perceptions of missed nursing care increased for every year that a nurse has experience ($p <.001$), however, no additional statistical information on years of nursing experience was provided. Similarly, Palese et al. (2015) found years of nursing experience to be a significant predictor ($p = 0.040$) for missed nursing care. Nurse participants with more experience reported higher perceptions of missed care though the number of years of experience was not differentiated (Palese et al., 2015).

Several studies have also concluded that years of nursing experience was not a significant predictor of missed nursing care. Kalisch, Tschannen, and Lee (2011) examined whether nurse staffing predicted missed nursing care within ten hospitals in a Midwestern state. At least 51% of most units retained staff with greater than five years of experience. Nursing experience was considered and included in a post-hoc multiple regression analysis in addition to other factors

including hours per patient day, case mix, and absenteeism after a Pearson correlation determined that these characteristics could be highly associated with missed nursing care. After analysis, nursing experience was not found to be a significant predictor of missed nursing care ($p = 0.58$). In contrast, Cho et al. (2015) reported a greater proportion of nurses with less than one year of nursing experience on higher staffed units (32.8%) compared to lower staffed units (17.1%). Years of nursing experience was not significantly related to missed nursing care: nurses with <1 year of experience ($p = 0.151$), 1-2 years of experience ($p = 0.256$), 3-4 years of experience ($p = 0.203$), and ≥ 5 years of experience ($p = 0.436$). Similarly, Orique et al. (2016) examined unit-level nurse workload on missed nursing care and determined that years of nursing experience was not significantly associated with missed nursing care but no other information on years of experience was provided.

Job Satisfaction

Job satisfaction refers to the measurement of contentment that an individual feels toward their job. Nursing job satisfaction is a concern due to the number of nurses currently leaving the field. The odds of leaving the practice environment at one year and at five years was reduced when nurses reported being happier with their work environment and their job (Labrague et al., 2020). When nurses are dissatisfied, organizations see a higher turnover rate and a negative impact on quality of nursing care (McHugh et al., 2011).

Providing high quality patient care influences job satisfaction. Newman and Maylor (2002) believed efficient patient care were fundamental factors for nursing satisfaction and nurses were dissatisfied when quality of care was not delivered (Williams, 1998). Likewise, interaction with patients was an integral part of satisfaction in a study by Best and Thurston (2004). Their study of 387 nurses found a vast response for satisfaction related to patient care

including giving quality patient care, the patient's response to care, and providing direct nursing care to patients. Stalpers et al. (2016) also found that overall job satisfaction was linked to nursing quality care including patient-centered values in their study of 123 nurses within an ICU setting. Nurses want to provide quality patient care including interacting with and caring for patients; however, multiple subjective and objective factors can cause dissatisfaction.

When quality of patient care diminishes, missed nursing care can occur. Little is known regarding how missed nursing care relates to job satisfaction. Kalisch, Tshcannen, and Lee (2011) conducted a study within 10 midwestern hospitals on whether missed nursing care could predict job satisfaction. A total of 3,135 nurses participated and missed nursing care was used as indicator of quality of care in the study. Findings concluded that the greater the missed nursing care was perceived, the higher the dissatisfaction of nurses in their job. Nurses that reported less missed nursing care were more satisfied in their roles. This suggests that providing care to patients and providing higher quality care increases job satisfaction and decreases missed nursing care.

In a study by Orique et al. (2016), job satisfaction was not found to be a predictor of missed nursing care. This study on unit-level nurse workload in acute and post-acute settings examined missed nursing care in a California acute care medical facility. One hundred sixty-nine nursing staff were sampled. A multiple regression was used to determine whether job satisfaction was a predictor of missed nursing care, along with other factors such as job title, number of patients cared for, and unit staffing. Only two factors were found to predict missed nursing care: unit staffing and an increased number of patients. Job satisfaction was not a predictor of missed nursing care.

Nursing Intellectual Capital

Nursing intellectual capital (NIC) refers to nursing and organizational performance due to nursing knowledge and factors that facilitate knowledge. The NIC theory was developed by Christine Covell (2008) and comprised of the following concepts: nursing intellectual capital, nursing performance, organizational performance, nursing human capital, nursing structural capital, nurse staffing, and employer support of nursing continuing professional development. The NIC theory concepts were operationalized and validated after theory derivation (Covell & Sidani, 2013a). Nurse staffing, nursing human capital, and employer support for nurse continuing professional development were tested. Nurse staffing and nursing human capital held to conceptual and operational definitions. Unfortunately, there was no validation for employee support for continuing professional development as defined within the theory. Structural capital was not tested due to empirical and theoretical limitations of the literature.

Other Theories Including Concepts

As NIC theory derives from the fields of accounting and economics, several concepts within those fields are identified within theories. Intellectual capital was described by Bontis (1998) and developed into a conceptual model. This model explained how human capital, structural capital, and customer capital affected intellectual capital, the knowledge of an organization that affects business performance. Human capital is found within human capital theory and refers to skills, education, and training of employees of an organization (Becker, 1962). The intellectual capital theory portrayed the importance of investments of education, training, and health on human capital.

The NIC theory was also derived from the earlier work of McGillis-Hall (2003). Nursing intellectual capital was developed into a conceptual model that highlighted nursing knowledge

development and nursing productivity. Within this model, nursing knowledge development is formed by the individual nurse and the organization and nursing productivity is formed by a system structure and the patient.

Relationship Among Concepts

Covell (2008) proposed the following relationships between concepts:

- nurse staffing is directly related to nursing human capital.
- employer support for continuing professional development is directly associated with patient outcomes.
- nursing human capital is directly associated with patient outcomes.
- nursing human capital is directly associated with organizational outcomes.
- nursing structural capital is directly associated with patient outcomes (p. 98).

Several propositions of the NIC theory have been empirically tested. Hypotheses for propositions by Covell and Sidani (2013b) included a) higher staffed units would have increased human capital, which would improve patient outcomes and maintain high levels of nurse recruitment and retention and b) units with higher levels of employer support for continuing professional development have increased human capital levels which increases quality care and higher nurse recruitment and retention. Nursing human capital propositions were supported as they were linked to better recruitment and retention of nurses and increased quality patient care. However, there was no direct link to nurse staffing on recruitment and retention as hypothesized and no support validated for employer support for continuing professional development.

Concept operationalization has been performed and validation of most of the theory's concepts have occurred (Covell & Sidani, 2013a). The conceptual and operational definitions for nurse staffing were found to be consistent and congruent with one another. However, the

conceptual definition of nursing human capital deviated slightly from originally proposed as specialty certifications were not found to be as relevant as initially thought. The proposed employer support for nurse continuing professional development structure was not validated when tested. Also, nursing structural capital could not be validated as there was limited literature of the concept at the time of testing.

Three propositions are included in the NIC theory: (1) nurse staffing and employer support for continuing professional development influence human capital; (2) nursing human capital influences both patient and organizational performance outcomes; and (3) nursing structural capital influences patient outcomes (Covell, 2008). Selected propositions within the NIC theory have been tested. Hospital units with higher nursing human capital have increased quality of care received by patients (Covell & Sidani, 2013b). Also, hospital-acquired associated infections were reduced partially due to units having more baccalaureate prepared nurses. While the theory initially asserted that employer support for continuing professional development influenced human capital, Covell and Sidani (2013b) found that this proposition was not supported.

Use of Theory Elsewhere

As the NIC theory is relatively new, there has been limited use of this theory to guide research. Only three studies, two being dissertations found within the literature, use this theory. However, the dissertation by Covell (2011) produced two original research articles by Covell and Sidani (2013a, 2013b).

Spies et al. (2015) used the NIC theory to guide their study on developing a global partnership of building capacity in nursing faculty of the Baylor University Louise Herrington School of Nursing and Rebekah Ann Naylor School of Nursing in Bengaluru, India. The theory

was used in the capacity of a way to "consider intrinsic benefits in global collaboration ... that would be difficult to empirically measure" (p. 653). Specifically, strengthening nursing human capital, by providing capacity building activities between faculties and students of the two schools, was the sought outcome as improvement of quality patient care and decreased adverse events would most likely occur. The study also mentioned Reidinger's (2010) dissertation as providing a relevant exemplar of the use of NIC theory. However, upon further examination of the dissertation, there was only a brief mention of the NIC theory as there were no associations of the theoretical concepts or relationships related to her dissertation work within the study.

Grover (2015) conducted a qualitative study and implemented a mentoring project for her dissertation on factors contributing to loss of nursing intellectual capital and based her research on two theories, one being NIC theory. By using the theory, Grover attempted to "identify the contributing factors that cause the experienced nurse to leave clinical nursing and the factors that could stem this flow" (p. 20). In the analysis section, it was mentioned nursing knowledge could be gained from a mentoring program and transferred to the novice nurse as NIC theory proposes intellectual capital is made up of knowledge and experience a nurse has.

Influence of Theory

As the NIC theory still needs much testing, there is great potential for this theory to be influential within the nursing discipline. A description of the theory has been published within at least one nursing theory textbook (Fitzpatrick & McCarthy, 2014) and has been listed as a middle range theory within at least one other nursing theory textbook (Grove et al., 2015). However, there has been little discussion of NIC theory elsewhere in the literature.

Summary

Academic preparation and years of experience have been linked to increased missed nursing care. Job dissatisfaction increases when nurses are not able to provide quality patient care. Research should focus on determining how nursing education and years of experience affect missed nursing care and how satisfied there are in their job role. This information can give organizations the tools necessary to help nurses decrease missed nursing care and improve job satisfaction.

Chapter 3. Methods

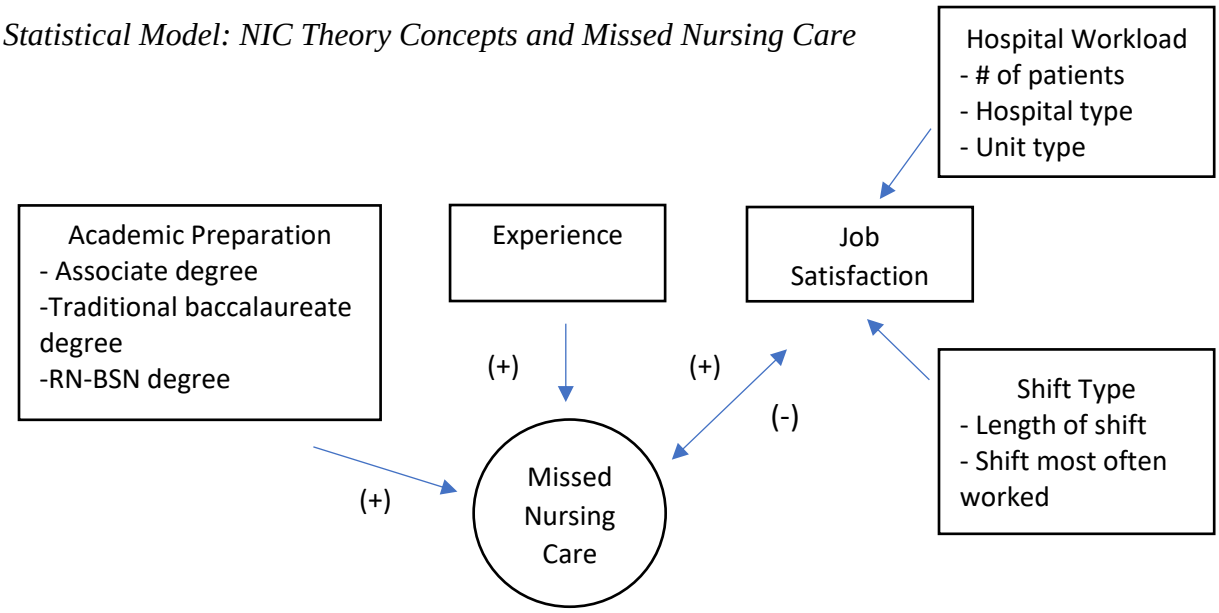
The purpose of this study was to examine the relationships of education, experience, and job satisfaction on missed nursing care. Specifically, this study aimed to understand: (1) the amount of missed nursing care reported by ADN, RN-BSN, and traditional BSN nurses; (2) the amount of missed nursing care reported by ADN, RN-BSN, and traditional BSN nurses when looking at years of experience; (3) the most missed nursing interventions by ADN, RN-BSN, and traditional BSN nurses; (4) the level of job satisfaction in nurses who report missed nursing care; (5) whether academic preparation, years of experience, and job satisfaction are predictors of missed nursing care. In this chapter, the methodology is presented including research design, population and sample, instruments, procedures for data collection, human subject's protection, and the data analysis plan.

Model

The investigator-developed hypothesized conceptual model was discussed in Chapter 1. The statistical model appears in Figure 2.

Figure 2

Statistical Model: NIC Theory Concepts and Missed Nursing Care



The investigator-developed hypothesized model as shown in Figure 2 was derived from the NIC theory (Covell, 2008). This model illustrates that human capital (academic preparation and nursing experience) can affect patient outcomes (missed nursing care) and organizational outcomes (job satisfaction) can affect patient outcomes (missed nursing care). Organizational characteristics such as hospital workload and shift type can also affect job satisfaction. This model will be examined using data obtained from the MISSCARE Survey. It is hypothesized that academic preparation, experience, and job satisfaction can predict missed nursing care. It is also hypothesized that nurses reporting more missed nursing care have lower levels of job satisfaction.

Research Design

A nonexperimental, correlational design was used for this study. Correlational designs involve the investigation of relationships between two or more variables (Burns & Grove, 2009). A correlational design allows for examination of how independent variables affect dependent variables (Wood & Brink, 1998). This design was desirable as it investigated the relationship between academic preparation, years of experience of nurses, and job satisfaction on the amount of care missed at the bedside. The independent variables within this study were academic preparation, years of experience, and job satisfaction. Missed nursing care served as the dependent variable. Patient demographics, including academic preparation, years of experience, job satisfaction, and missed nursing care tasks were collected using the MISSCARE Survey (Kalisch, Landstrom, & Williams, 2009).

Population and Sample

The population of interest in this study were full time or part time bedside registered nurses working in acute care settings. Nurses across the United States, who are members of the

Academy of Medical-Surgical Nurses (AMSN), were surveyed. The study population consisted of a convenience sample of 168 registered nurses who worked within intensive care, intermediate care, medical, surgical, cardiac, neurology, orthopedic, urology, respiratory, and oncology units.

Inclusion and Exclusion Criteria

Participants consisted of ADN, RN-BSN, and traditional BSN registered nurses who practiced at the bedside or were in management, worked in medical-surgical type units, and were physically present in the United States. Exclusion criteria included nurses who work in settings other than a hospital, and master's prepared nurses.

The sample was limited to ADN, RN-BSN, and traditional BSN registered staff nurses and nursing administrative staff. Nurses with a master's degree in nursing (MSN) comprise only 10% of the nursing workforce in the hospital setting (Budden et al., 2013) and were not included in this study. Acute care hospital and in-patient units were chosen based upon previous psychometric testing of the survey instrument, meeting both reliability and validity when tested (Kalisch & Williams, 2009).

Sampling Plan

Participants were recruited through the AMSN. This organization represents over 13,000 registered nurses and is the largest nursing specialty within the United States (Academy of Medical-Surgical Nurses, n.d.). The study sample was chosen as the organization could provide an adequate sample size and members within the organization were likely to meet the inclusion criteria.

Sample Size Determination

Sample size was determined using a power analysis. Since this study uses multiple regression analysis and Analysis of Variance (ANOVA), effect size (f2) will be defined as R2 /

1+ R2. Where R2 is the amount of variance explained for outcome by the sets of predictors. Effect size for multiple regression (f2) = 0.02, 0.15, and 0.35 or greater correspond to "small", "medium", and "large" effects. Effect size for ANOVA (f2) = 0.1, 0.25, and 0.40 or greater correspond to "small", "medium", and "large" effects (Cohen, 1988). The power calculation showed that we will have at least 80% power with total sample size of 168 for effect size of .25 (medium size) and alpha .05.

Instrumentation

MISSCARE Survey

A single instrument was used in this study, the MISSCARE Survey. This survey is a self-reported, likert scale survey that collects feedback regarding missed nursing care. Kalisch, Landstrom, and Williams (2009) developed the MISSCARE Survey based on qualitative work by Kalisch (2006).

This tool consists of three separate sections: demographics, Part A, and Part B. The demographic section includes questions regarding academic preparation, experience level, gender, age, number of hours worked per week, job title/role, what type of unit is worked on, what shift is worked, how much overtime is worked, plans to leave current position, missed work due to illness or injury, feelings of unit staffing adequacy, how many patients cared for, job satisfaction and how many admissions or discharges occurred during the last shift worked. Job satisfaction is specifically measured by the question, “How satisfied are you in your current position?” with responses of “very satisfied”, “satisfied’, “neutral”, “dissatisfied”, and “very dissatisfied”.

Part A consists of a list of 24 nursing tasks often missed by nurses and includes the responses of “always missed”, “frequently missed”, “occasionally missed”, “rarely missed”, and

"never missed". Each nursing task can be categorized into one of four factors: assessment, interventions-individual needs, interventions-basic care, and planning (Kalisch & Williams, 2009).

Part B consists of 17 reasons that nursing care is missed and includes the responses of "significant reason", "moderate reason", "minor reason", and "not a reason" for missed care. Part B was not used within this study because determining reasons that nursing care is missed is not a specific aim or research question of this study.

Additional demographic questions were added as an addendum to this survey. Participants were asked to list the academic degrees they hold, including all degrees obtained since licensed. Also, participants were asked to list what type of organizational setting they currently work in.

Psychometric Analysis

Psychometric analysis of the survey was conducted by Kalisch and Williams (2009). Content validity was confirmed by a panel of 19 expert nurses with a content validity index of 0.89. Construct validity was assessed for both parts of the survey by two studies. A factor analysis was completed for part A in the first study. Four factors emerged in the findings including assessment, interventions-individual needs, interventions-basic care, and planning (Kalisch, Landstrom, & Williams, 2009). The second study, however, did not support a factor structure (Kalisch & Williams, 2009). Differing results of the two studies were thought to be due to nursing actions being independent and not related to each another, therefore no further analysis was completed for Part A. Part B was validated by both studies yielding a Kaiser-Meyer-Olkin measure of 0.87 and 0.90, respectively. Bartlett's test of sphericity was also determined as significant in both studies.

Reliability was established through test-retest reliability and internal consistency (Kalisch & Williams, 2009). Test-retest was measured at 0.87 for part A and 0.86 for part B. Internal consistency of part B, measured by Cronbach *a*, was acceptable for two factors: communication with value of 0.86 and material resources with a value of 0.71. Staffing resources fell below the recommended score of 0.70.

Procedures

Prior to data collection, permission was obtained to use the MISSCARE Survey (Appendix A). Permission to conduct research was also obtained through East Tennessee State University's Institutional Review Board (IRB) and the AMSN. After approval, a cover letter (Appendix B) explaining the research, the benefits to the participants, the risks of the study, the amount of time it would take for participants to complete the survey, and the researcher's contact information was submitted to the AMSN. The researcher also signed an agreement to provide research results to AMSN to be shared with the membership. The MISSCARE Survey (Appendix C) was uploaded into the REDCap (Research Electronic Data Capture) platform. The survey link and cover letter were distributed to AMSN members through the membership email server and their online community, "The Hub". All communication and dissemination of the survey was conducted by the AMSN. A reminder to participate in the research was sent to the membership after the initial invitation was sent to receive maximum amount of participation.

Human Subjects Protection

Permission to conduct the study was obtained through East Tennessee State University's IRB. Completion of the MISSCARE Survey was used as consent to participate in the study. Completion of the survey was strictly voluntary. Participants were made aware of the risks and benefits of the study in a cover letter that was attached to the survey link and distributed by the

AMSN. Accessing the link to the survey from the AMSN will allow for maximum confidentiality as the researcher did not have access to any membership information. Also, it allowed the participants to take the survey within any private setting. Confidentially was also maintained by not collecting names of participants taking the survey. Participants were asked demographic information to determine gender, age, education, experience, and unit worked on, but no other identifying information was specified.

Information gained from this study proved beneficial to members of health care teams as determining what nursing care is most missed by academic preparation and experience can potentially lead to future decreases in negative patient outcomes. Additionally, understanding how job satisfaction impacts missed nursing care can potentially provide health care teams valuable information to help increase patient safety and quality of care. Risks to the study included being inconvenienced with time to complete the study.

Data Analysis Plan

To capture a thorough interpretability of results, data were extracted from all returned surveys and coded into Statistical Analysis Software (SAS) version 9.4 on a password protected computer. Data were screened for nonresponse items (Fowler, 2009). Leaving non-response items out of the analysis was determined based on whether the item was a variable that was analyzed. All missing data items were kept.

The design for this study is a cross sectional study. Descriptive statistics were computed on the variables. For categorical variables, the univariate construction includes frequency distribution. For continuous variables, statistics include measure of central tendency (mean and median) and measure of dispersion (standard deviation and range). Pearson correlation was used to examine the relationship between continuous variables and to check for potential

multicollinearity. Our outcome for this study is missing care (continuous variable). Pearson and Spearman was used to examine the relationship between continuous or ordinal variables. Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA)/Tukey HSD tests was used to examine bivariate tests of continuous outcome (missed nursing care) by group and categorical predictors. Multiple regression and logistic regression examined the relationships between a set of the independent variables (such as academic preparation, experience, and job satisfaction) on missed nursing care. The level of statistical significance was set at 0.05 for each of the research questions. Values that were reported include the adjusted R-square value, beta coefficients, standard error of beta, and P-value. In addition, an ANOVA examined if the means of outcomes is different by academic preparation. Cronbach alpha was also used to determine internal consistency of missed care and satisfaction scales.

Summary

The amount of nursing care missed between ADN, RN-BSN, and traditional BSN nurses were compared. The relationship between these variables and years of experience and job satisfaction were also examined. The most missed nursing care interventions were also examined between ADN, RN-BSN, and traditional BSN nurses.

Chapter 4. Results

This chapter extends the knowledge of the role that academic preparation, years of experience and job satisfaction has on missed nursing care. The discussion includes all data analysis procedures and results used to answer each research question in this study. The MISSCARE Survey was distributed to AMSN member through their email distribution list. The first email was sent to 10,799 members on January 30, 2021. The second email was sent to 10,808 members on April 1, 2021. The response rate was strongest with the initial distribution of the survey with 170 responses. The second distribution email rendered 119 more completed surveys. The overall response rate for completed RN surveys in this study was less than 1 percent, rendering 289 completed surveys. After inclusion and exclusion criteria were met, 168 surveys were included in the study. Due to the small sample size, all participants who met data inclusion were kept regardless of whether there was missing data for demographics and the MISSCARE Survey.

The statistical program SAS, Version 9.4, was used to analyze the data within this study. Statistical tests used included: descriptive analysis and frequencies; mean, median, standard deviation, and range; Chi-square; Pearson correlation; ANOVA; ANCOVA; and multiple regression. Data analysis from each statistical test will be discussed in detail in relation to the specific aims of the study.

Results

Reliability Testing

Reliability testing of the survey instruments used to measure the different study variables was conducted. Specifically, the reliability in terms of internal consistency of the measures of the study variables of missed nursing care and job satisfied were investigated.

Investigation of the Cronbach's alpha value showed that both measures of missed nursing care ($\alpha = 0.90$) and job satisfaction ($\alpha = 0.70$) have acceptable Cronbach's Alpha values. The Cronbach's alpha values were greater than the minimum value for acceptable internal consistency reliability, which is 0.70. This indicated that the 23-item survey instrument for missed nursing care had an acceptable internal consistency reliability. Also, the three-item survey instrument for job satisfaction had an acceptable internal consistency reliability. Thus, the results showed that the reliability of the survey measure was achieved for this current study.

Demographic Description

One hundred forty-one staff RNs (84%) and 27 nurse administrators (16%) participated in the study. Each nurse was asked a series of demographic questions including: unit worked on, time spent on unit, highest education level, highest degree as a nurse, all degrees obtained, gender, age, job title/role, number of hours worked per week, length of shift, experience in role, experience in current patient unit, shift most worked, type of organization, number of patients cared for, satisfaction in current position, satisfaction with being a nurse, and satisfaction with teamwork.

Type of Units

Participants were asked to list the type of unit they worked on. The greatest number of participants worked in general medical-surgical areas (*n* = 75; 46 %). Other areas worked included cardiology (*n* = 17, 10%), surgical (*n* = 16, 9%), orthopedics (*n* = 15, 9%), intensive care units (*n* = 9, 5%), neurology (*n* = 7, 4%), oncology (*n* = 5, 3%), urology (*n* = 4, 2%), and respiratory (*n* = 3, 1%). Eleven participants (6%) listed names of the unit using numbers and letters. Six participants (3%) did not include an answer. Most participants (*n* = 165, 98.8%) spent the majority of their time working on their home unit.

Education Level

For education level, the participants were asked their highest education level, highest degree as a nurse, and all degrees obtained. The all degrees obtained question was categorized into specific education levels for our three education categories for the research questions: ADN, RN-BSN, and traditional BSN. The results of the educational levels for the participants are outline in Table 1.

Regarding education level of the participants, the highest degree obtained, regardless of question asked, was the bachelor's degree. When examining the highest education level of the participant, 82.1% (n = 138) had a bachelor's degree and 16.7% (n = 28) had an associate degree. For highest degree as a nurse, 79.8% (n = 134) had a bachelor's degree while 17.3% (n = 29) had an associate degree. All degrees obtained for participants ranged from 5.6% (n = 10) having an LPN diploma degree to 1.8% (n = 3) having a master's outside of nursing.

RN education levels were the variables used within this study for education. Thirty-two (19.1%) participants had an associate degree in nursing while 79 (40%) participants had a traditional BSN degree. Fifty-seven (33.9%) participants were considered RN-BSN.

Table 1

Education Level

Variable	*n*	%
Highest Education		
Associates degree	28	16.7
Bachelors degree	138	82.1
Graduate degree	2	1.2

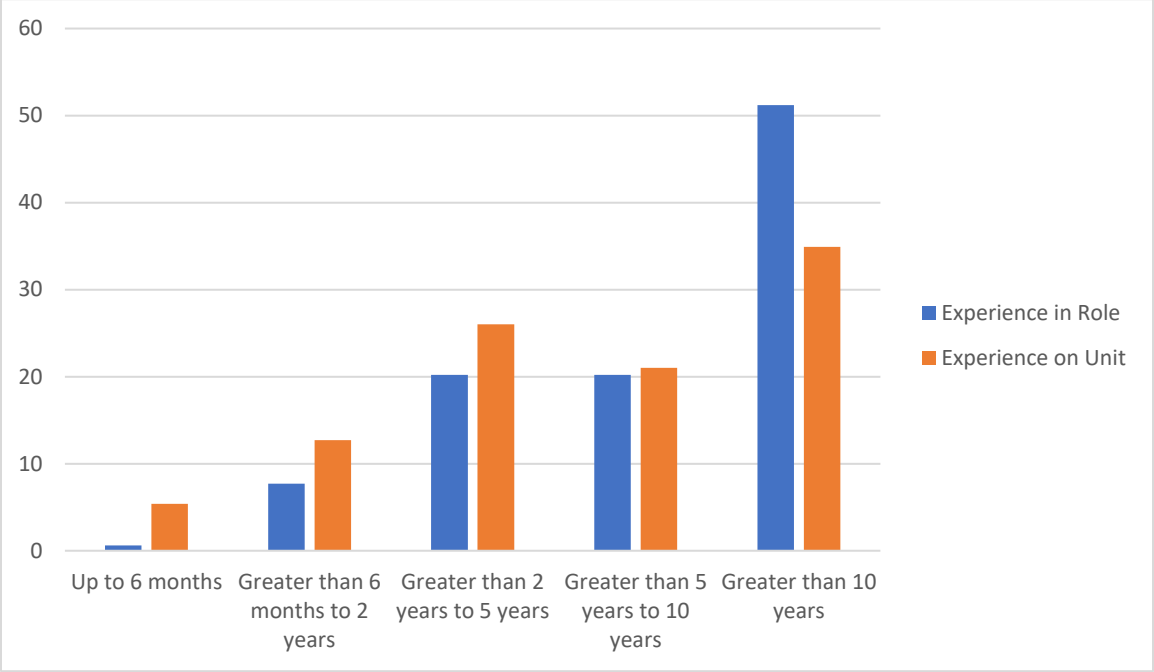
Variable	*n*	%
Highest Degree as Nurse		
RN diploma	2	1.2
Associates degree	29	17.3
Bachelor's degree	134	79.8
Bachelors OUTSIDE nursing	3	1.8
ALL Degrees Obtained		
LPN diploma	10	5.6
RN diploma	20	11.9
Associates degree	73	43.5
Bachelor's degree	136	80.6
Bachelors OUTSIDE Nursing	26	15.5
Masters OUTSIDE Nursing	3	1.8
RN Education Levels		
ADN	32	19.1
RN-BSN	57	33.9
Traditional BSN	79	47

Experience

Participants were asked years of experience within two questions: experience in their role and experience within the current patient care unit. The responses for each question are listed in Figure 3.

Figure 3

Experience



Over half of the participants (*n* = 86, 51.2%) had greater than 10 years' experience in their role. The second two highest categories in experience in current role were greater than 2 years to 5 years and greater than 5 years to 10 years. Both categories had 20.2% responses (*n* = 34), respectively. Greater than 6 months to 2 years' experience represented 7.74% (*n* = 13) of the participants. The lowest category for experience in role was 0.6% (*n* = 1).

Fifty-eight participants (34.9%) had greater than 10 years on their current patient care unit. The second highest category was greater than 2 years to 5 years (*n* = 43, 25.9%) and the third highest category was greater than 5 years to 10 years' experience (*n* = 35, 21.1%). The two lowest categories were greater than 6 months to 2 years (*n* = 21, 12.66%) and up to 6 months (*n* = 9, 5.4%). Two participants did not respond to this question.

Gender/Age

The participants consisted of 90.4% females and 9% males. One participant (0.6%) preferred not to specify gender and one participant did not answer. Most of the participants were 25-64 years old. Seven participants (4.2%) were under 25 years old and three participants (1.8%) were over 65 years old. Other age ranges included: 25 to 34 years old (*n* = 36, 21.4%), 35 to 44 years old (*n* = 36, 21.4%), 45-54 years old (*n* = 48, 28.6%), and 55 to 64 years old (*n* = 38, 22.6%).

Work Shift

Participants were asked various questions regarding their work shift and the number of hours worked per week. One hundred forty-five (86.8%) worked more than 30 hours per week and 22 participants worked less than 30 hours per week (13.7%). Approximately 57.5% (*n* = 96) worked day shift, 4.2% (*n* = 7) worked evening shift, 34.1% (*n* = 57) worked night shift, and 4.2% (*n* = 7) worked rotating shifts. When examining hours per shift worked, 11.3 % (*n* = 19) worked 8-hour shifts, 3 % (*n* =5) worked 10-hour shifts, 78% (*n* = 131) worked 12-hour shifts, and 7.7% (*n* = 13) worked rotating 8-hour and 12-hour shifts. When asked how many hours of overtime were worked in the last 3 months, 48.5% (*n* = 81) worked more than 12 hours, 29.94% (*n* = 50) worked at least 1 – 12 hours, and 21.6% (*n* = 36) worked no overtime.

Participants were also asked how many days or shifts of worked they missed due to illness, injury, rest, etc. Over half of the participants (*n* = 95, 56.6%) missed no shifts. At least 17.3% (*n* = 29) missed 1 day, 16.1% (*n* = 27) missed 2-3 days, 5.4% (*n* = 9) missed 4-6 days, and 4.8% (*n* = 8) missed more than 6 days.

Type of Organization

Participants were asked what type of organization they currently worked in. Approximately 66.5% (*n* = 111) worked in a non-government (not-for-profit) hospital, 18.56 % (n = 31) worked in an investor-owned (for-profit) hospital, 10.8% (n = 18) worked in a state and/or local government hospital, 3.6% (*n* = 6) worked in a federal government hospital, and 0.6% (*n* = 1) worked in a teaching hospital. One participant did not answer this question.

Number of Patients

The participants were asked the number of patients cared for on the last or current shift. Eight participants (4.6%) did not take care of patients. Two participants (1.2%) took care of at least one patient. Five participants (3%) took care of at least two patients. Ten participants (6.1%) took care of at least 3 patients. Forty-four (26.7%) participants took care of at least 4 patients and 46 participants (28.9%) took care of at least 5 patients. Fifty participants (29.5%) took care of 6 + patients on the last or current shift worked. Three participants did not answer this question and were not included in this data.

Job Satisfaction

Three questions were asked regarding job satisfaction. Participants were asked how satisfied they were in their current position, how satisfied they were with being a nurse independent of current job, and how satisfied they were with the level of teamwork. The responses are listed in Figure 4.

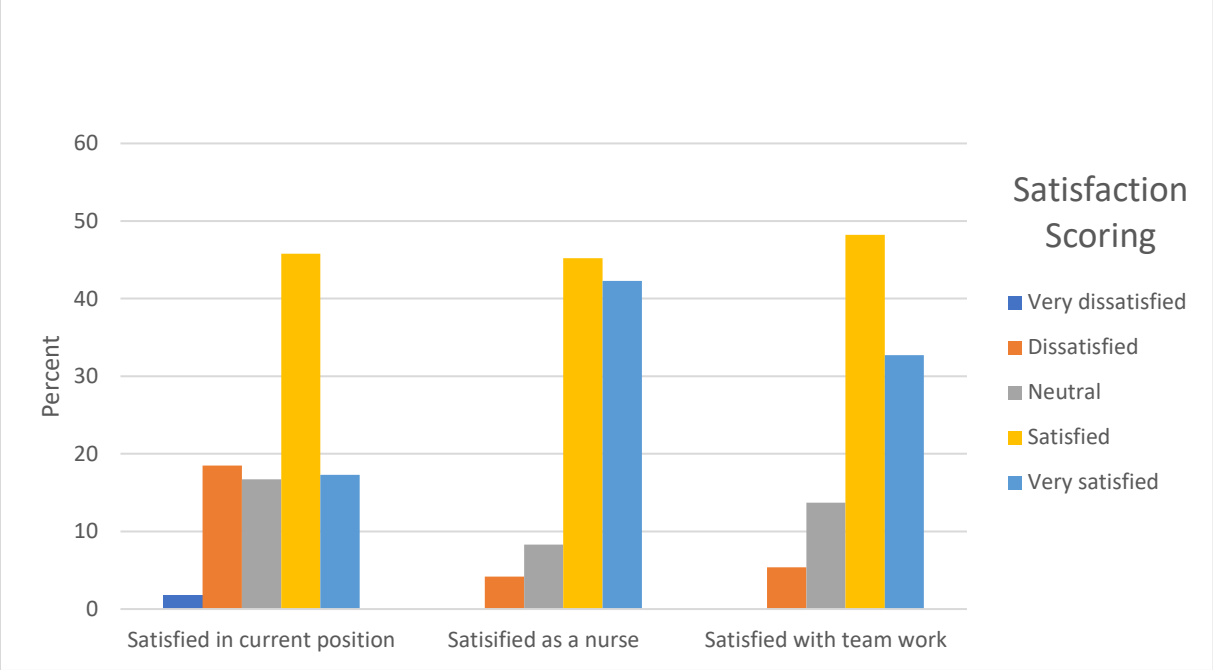
In relation to satisfaction with current position, participants were mostly satisfied (*n* = 77; 45.8%). Three participants (1.8%) were very dissatisfied, and 31 participants (18.5%) were dissatisfied. Twenty-eight participants (16.7%) were neutral in satisfaction and 29 participants (17.3%) were very satisfied in their current position.

Satisfaction with being a nurse generated no very dissatisfied participants. Seven participants (4.2%) were dissatisfied, and 14 participants (8.3%) were neutral in their satisfaction with being a nurse. Satisfied and very satisfied generated the highest results with 76 participants (45.2%) being satisfied and 71 (42.3%) being very satisfied.

Satisfaction with the level of teamwork also generated no very dissatisfied participants. Most participants were either satisfied (*n* =81, 48.2%) or very satisfied (n = 55; 32.7%) with the level of teamwork. Nine participants (5.4%) were dissatisfied, and 23 participants (13.7%) were neutral.

Figure 4

Job Satisfaction



Specific Aims

Specific Aim I: Use the MISSCARE Survey to determine the most missed nursing interventions by ADN nurses, RN-BSN nurses, and traditional BSN nurses.

Using the MISSCARE Survey, the participants were asked to answer a 24-item likert-type scale to assess how frequently elements of nursing care were missed by the nursing staff on the unit. Each nursing care element had five possible answers: always missed, frequently missed, occasionally missed, rarely missed, and never missed. Each element was scored where always missed was scored as four, frequently missed was scored as three, occasionally missed was scored as two, rarely missed was scored as one, and never missed was scored as zero. The means and standard deviations of each missed nursing care element for all education groups are shown in Table 2.

For ADN nurses, based on mean score, the top five highest nursing care interventions that are missed most by ADN registered nurses were as follows: (1) Ambulation three times per day or as ordered (M = 2.72; SD = 0.81), (2) Mouth care (M = 2.50; SD = 0.92), (3) Attend interdisciplinary care conferences whenever held (M = 2.40; SD = 1.19), (4) Turning patient every 2 hours (M = 2.31; SD = 0.82), and (5) Medications administered within 30 minutes before or after scheduled time (M = 2.29; SD = 0.59).

For RN- BSN registered nurses, based on mean score, the top five highest nursing care interventions that are missed most by RN-BSN registered nurses were as follows: (1) Ambulation three times per day or as ordered (M = 2.65; SD = 0.74), (2) Mouth care (M = 2.39; SD = 0.76), (3) Monitoring intake/output (M = 2.37; SD = 0.82), (4) Medications administered within 30 minutes before or after scheduled time (M = 2.29; SD = 0.82), and (5) Patient teaching about illness, tests, and diagnostic studies (M = 2.11; SD = 0.76).

For traditional BSN registered nurses, based on mean score, the top five highest nursing care interventions that are missed most by traditional BSN registered nurses were as follows: (1) Ambulation three times per day or as ordered (M = 2.53; SD = 0.89), (2) Mouth care (M = 2.41;

SD = 0.84), (3) Turning patient every 2 hours (M = 2.33; SD = 0.69), (4) Medications administered within 30 minutes before or after scheduled time (M = 2.27; SD = 0.84), and (5) Response to call light is initiated within 5 minutes (M = 2.23; SD = 0.77).

Table 2

Means and Standard Deviations of Missed Nursing Care by Education

Variable	ADN (*n* =32)		RN-BSN (*n* =57)		BSN (*n* =79)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Ambulation	2.72	0.81	2.65	0.74	2.53	0.89
Turning	2.31	0.82	2.09	0.85	2.33	0.69
Feeding	2.03	0.74	2.00	0.84	2.08	0.88
Setting up meals	1.50	0.84	1.48	0.85	1.57	0.97
Timely medication administration	2.29	0.59	2.29	0.82	2.27	0.84
Vital signs	1.56	0.84	1.46	0.80	1.53	0.80
Monitoring intake/output	2.28	0.92	2.37	0.82	2.18	0.86
Full documentation	2.16	0.81	2.07	0.71	1.86	0.89
Patient teaching	2.22	0.79	2.11	0.76	2.06	0.76
Emotional support	2.09	0.78	1.82	0.93	2.01	0.74
Bathing/skin care	2.10	0.87	1.88	0.80	1.97	0.85
Mouth care	2.50	0.92	2.39	0.76	2.41	0.84
Hand washing	1.16	0.73	1.39	1.01	1.35	0.95
Discharge planning	1.27	0.83	1.15	0.83	1.29	0.73
Glucose monitoring	0.91	0.64	0.95	0.67	0.84	0.65
Each shift assessment	0.91	0.73	0.61	0.53	0.78	0.73
Focused reassessments	1.44	0.88	1.21	0.84	1.23	0.83
IV/central line site care	1.44	1.05	1.13	0.76	1.30	0.83
Call light response[a]	1.81	0.82	1.88	0.85	2.23	0.77
PRN medication administration	1.84	0.68	1.91	0.79	2.10	0.85
Medication effectiveness assessment	1.97	0.82	2.11	0.85	2.04	0.72
Interdisciplinary care conference attendance	2.40	1.19	1.89	1.15	1.82	1.11
Toileting assistance	2.06	0.72	1.89	0.72	2.19	0.75
Skin/wound care	1.47	0.72	1.61	0.73	1.58	0.78

a. p value for ANOVA = .01

Specific Aim II: Determine job satisfaction when care is missed by ADN nurses, RN-BSN nurses, and traditional BSN nurses.

Using the MISSCARE Survey, the participants were asked to answer a likert-type scale for job satisfaction. This scaled assessed how satisfied in their current position, how satisfied as a nurse, and how satisfied with the level of teamwork on their unit. Each question had five possible answers: very dissatisfied, dissatisfied, neutral, satisfied, and very satisfied. Each element was scored where very dissatisfied was scored as one, dissatisfied was scored as two, neutral was scored as 3, satisfied was scored as four, and very satisfied was scored as five. Within this study, how satisfied the nurse was in their current position was used to determine job satisfaction. Descriptive statistics are reported for all three job satisfaction questions and a Pearson-r correlation was completed to examine the strength of relationships between job satisfaction and missed nursing care.

A one-way ANOVA was conducted to determine whether there was significant difference in job satisfaction between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses. A level of significance of 0.05 was used in the ANOVA. Job satisfaction did not differ significantly between the three groups (see Table 3).

Table 3

ANOVA of Job Satisfaction

Sources	Df	Sum of Squares	Mean Square	F value	*p* value
Satisfaction in current position					
Model	2	4.13	2.06	1.95	0.14
Error	165	174.70	1.06		

Descriptive statistics were reported for all three questions related to job satisfaction (see Table 4). RN -BSN job satisfaction scores were higher for all three questions than both the ADN

and traditional BSN groups. This means that RN-BSN registered nurses were more satisfied in their current position, satisfied with being a nurse, and satisfied with the level of teamwork on their unit more than the ADN registered nurses and traditional BSN registered nurses.

Table 4

Means and Standard Deviations for Job Satisfaction

Variable	ADN (*n* =32)		RN-BSN (*n* =57)		BSN (*n* =79)	
	M	*SD*	*M*	*SD*	*M*	*SD*
How satisfied are you in your current position?	3.38	0.94	3.79	1.10	3.52	1.01
Independent of your current job, how satisfied are you with being a nurse?	4.13	1.01	4.40	0.70	4.20	0.72
How satisfied are you with the level of teamwork on this unit?	3.84	0.92	4.26	0.81	4.05	0.77
total satisfaction scale	11.34	2.29	12.46	2.18	11.77	1.86

A Pearson-r correlation was calculated to determine the correlation between the nurse's satisfaction and total missed nursing care. The correlation results for satisfaction and missed nursing care are presented in Table 5. Satisfaction in current position was statistically significant with satisfied as a nurse ($p < .0001$), satisfied with teamwork ($p < .0001$) and negatively with total missed nursing care ($p = .001$).

Table 5

Relationships of Satisfaction and Missed Nursing Care

		Satisfied as nurse	Satisfied with teamwork	Total missed nursing care
Satisfied in position	r	0.48**	0.47**	-0.27**
	p	<.001	<.001	.001

Note: Entire sample = 168; Significant results at the 0.1 level

For the entire sample of nurses, a positive correlation indicating a significant linear relationship was found between job satisfaction in current position and job satisfaction with being a nurse (r = .48). This indicates that nurses who are satisfied in their current position tend

to be satisfied with being a nurse. Likewise, a positive correlation between satisfaction in current position and satisfaction with teamwork was also found (r = .47). This suggests that nurses who are satisfied in their current position also are satisfied with the level of teamwork on their unit. A negative weak correlation was found between satisfaction in current position and total missed nursing care (r = - .27). This signifies that as job satisfaction increases, the amount of missed nursing care decreases.

Specific Aim III: Use the MISSCARE Survey to determine if there is a difference in the amount of missed nursing care reported by ADN nurses, RN – BSN nurses, and traditional BSN nurses.

A one-way ANOVA was conducted to determine whether there is significant difference in each individual item and the total amount of missed nursing care between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses. A level of significance of 0.05 was used in the ANOVA. The results of the ANOVA to address specific aim three are shown in Table 6.

Results of the ANOVA test of difference showed that there were no significant differences in the total amount of missed nursing care (F (3,164) = 0.36, p = 0.78) between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses. There was no significant difference since the p-value was less than the level of significance of 0.05.

Table 6

ANOVA of Total Missed Nursing Care

Sources	Df	Sum of Squares	Mean Square	F value	*p* value
Total Missed Nursing[a]					
Model	3	133.73	44.57	0.36	0.78
Error	164	20078.54	122.43		

a. R – square = .01

The results of the individual items of missed nursing care were only significant for call light response and education (p = .01). A Tukey's HSD was used to determine the nature of the differences between call light response and education groups. Call light response time was statistically significant between the ADN registered nurses and RN- BSN registered nurses when compared to the traditional BSN registered nurses. The significance is reported in Table 2.

Descriptive statistics summaries in Table 7 showed the mean total amount of missed nursing care among the different samples of ADN registered nurses (M = 44.03; SD = 10.88), RN-BSN registered nurses (M = 41.91; SD = 10.12), and traditional BSN registered nurses (M = 43.23; SD = 11.72) were almost equal. This supported the ANOVA result that there was no significant difference in the total amount of missed nursing care between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses.

Table 7

Means and Standard Deviations for Total Missed Nursing Care by Education

Variable	ADN (n =32)		RN-BSN (n =57)		BSN (n =79)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Total Missed Nursing Care	44.03	10.88	41.91	10.12	43.23	11.72

Specific Aim IV: Use the MISSCARE Survey to determine if there is a difference in the amount of missed nursing care reported by ADN nurses, RN-BSN nurses, and traditional BSN nurses while considering years of experience.

A one-way ANCOVA was calculated comparing the years of experience of nurses between the ADN, RN-BSN, and traditional BSN groups while controlling for experience. A level of significance of 0.05 was used in the ANCOVA. The results of the ANCOVA are in

Table 8. No significant difference was found (F (1,164) = 0.24, p =0.62). Years of experience between ADN registered nurses, RN-BSN registered nurses, and traditional BSN registered nurses did not differ significantly.

Table 8

ANCOVA of Years of Experience

Sources	Df	Sum of Squares	Mean Square	F value	P value
Total Missed Nursing[a]					
Model	3	133.73	44.57	0.36	0.78
Error	164	20078.54	122.43		
Education	2	94.53	47.26	0.39	0.68
Experience	1	28.89	28.89	0.24	0.62

a. R – square = .01

A chi-square test of difference was computed to compare the relationship of years of experience between all three education groups. Table 9 summarizes the individual responses for years of experience and reports the chi-square value. More than half of the nurses (86; 51%) had more than 10 years of experience within their role, regardless of academic preparation. Only 14 (26.72%) nurses between each education group had 6 months – 2 years of experience.

Table 9

Frequency and Percentage Summaries of Nurses' Years of Experience

Label	6 months – 2 years		2 years – 5 years		5 years – 10 years		Greater than 10 years	
	n	%	n	%	n	%	n	%
ADN	3	9.38	5	15.63	2	6.25	22	68.75
RN-BSN	7	12.28	9	15.79	16	28.07	25	42.86
BSN	4	5.06	20	25.32	16	20.25	39	49.37

Note. Chi- square *p* value = .0762

Specific Aim V: Determine if academic preparation, years of experience, and job satisfaction predicts missed nursing care.

A multiple linear regression analysis was conducted to address specific aim five to determine if academic preparation, years of experience, and job satisfaction significantly predicts amounts of missed nursing care. A level of significance of 0.05 was used in the multiple linear regression. Table 10 summarizes the results of the multiple linear regression analysis to address specific aim five.

Table 10

Results of Multiple Linear Regression of Predictive Relationships

Label	df	Parameter estimate	SE	*t*	*p*	Standardized Estimate
Intercept	1	51.19	4.73	10.83	<0.001*	0.00
ADN (*R)*						
BSN	1	-0.31	2.25	-0.14	0.89	-0.01
RN to BSN	1	-0.81	2.40	-0.34	0.73	-0.04
Experience in role	1	0.53	0.80	0.66	0.51	0.05
Satisfied in current position	1	-2.80	0.81	-3.45	<0.001*	-0.26

Note. F (4, 163) = 3.27, $p = 0.01$; $R^2 = 0.07$, N = 168; (R) is the reference variable

a. Dependent Variable: Amount of Missed Nursing Care

b. Predictors: (Constant), BSN, RN to BSN, Experience in role, Satisfied in current position

*Significant at 0.05 level

In terms of model fit, the regression model created was statistically significant (*F* (4, 163) = 3.27, $p = 0.013$). This indicated that the regression model with academic preparation (BSN and RN-BSN), years of experience in role, and job satisfaction as predictors of amount of missed nursing care had a significant model fit. The R^2 value of the regression model was 0.07, which indicated a low effect size, meaning that the combined influence of academic preparation, years of experience in role, and job satisfaction explained only 7% in predicting amount of

missed nursing care. The model summary for this regression analysis showed that the overall model can explain only 7% of the variance in the outcome variable of amount of missed nursing care.

Investigation of the individual predictive relationship showed only job satisfaction (t (167) = -3.45, $p < 0.001$) was a significant predictor of amount of missed nursing care. Job satisfaction was a significant predictor ($p < .001$). Moreover, examination of the unstandardized beta coefficient (β) showed that job satisfaction (β = -2.80) had a significant negative impact or had negative predictive relationship with amount of missed nursing care. This means that the higher the job satisfaction among the nurses, the lower will be the amounts of missed nursing care. On the other hand, results showed that both academic preparation as BSN (t (167) = -0.14, $p = 0.89$) and RN-BSN (t (167) = -0.34, $p = 0.73$) and years of experience (t (167) = 0.66, $p = 0.51$) were not significant predictors of the amount of missed nursing care.

Summary

In summary, the results of the data analysis found that there were no significant differences when examining missed nursing care in the context of academic preparation and years of nursing experience. While job satisfaction between educational groups was not statistically significant, there was a negative correlation between job satisfaction and missed nursing care meaning that as nurses miss more care, job satisfaction decreases. Also, job satisfaction was the only predictor of missed nursing care within this study. When assessing missed nursing care interventions, all three education groups missed ambulation three times a day or as ordered and mouth care, most frequently.

Chapter 5. Discussion

This chapter explores the results from Chapter 4 as related to current literature and provides a summary and discussion of the five specific aims. The intent of this study was to generate new knowledge related to academic preparation, years of experience and job satisfaction and the relationships between missed nursing care. Limitations of the study are explained. Implications for nursing and recommendations for future research are provided.

Summary of Results

The purpose of this study was to compare missed nursing care between ADN, RN-BSN, and traditional BSN registered nurses while also considering years of experience and job satisfaction. Additionally, academic preparation, years of experience, and job satisfaction were also examined to determine if they can predict missed nursing care. One survey, the MISSCARE Survey, was used within this study.

The sample for this study was 168 registered nurses who were members of the AMSN**.** The AMSN is a professional organization for medical-surgical nurses. The sample was limited to ADN, RN-BSN, and traditional BSN registered staff nurses and nursing administrative staff within medical-surgical units. Two participants were RN diploma nurses and were included in the ADN education group as their educational tracts are like the ADN tract. Participants who noted that they worked in a different area other than medical-surgical units were not included in this study due to previous psychometric testing of the survey. It was inferred that nurses had some sort of medical-surgical background, due to being a member of the AMSN, when the unit type could not be distinguished. Working on a medical-surgical unit is consistent with findings in the literature (Kalish & Williams, 2009; Kalisch, Tschannen, Lee, & Friese, 2011; McMullen et al., 2017); however, this is the first known study to include the RN-BSN nurse group when

looking at academic preparation. This is also the first known study regarding missed nursing care using a registered nurse professional organization to recruit participants. All previous studies related to missed nursing care were conducted at the organizational (facility) level and participants were recruited depending on the type of unit.

Specific Aim I

The first specific aim was to use the MISSCARE Survey to determine the most missed nursing interventions by ADN nurses, RN-BSN nurses, and traditional BSN nurses. The data found similarities between all groups within this study and is consistent with missed nursing care interventions reported as missed most in the literature. This study's findings indicate that the impact of nursing education on missed nursing care interventions does not exclusively differ by specific nursing interventions.

The top two nursing interventions missed between all academic groups within this study were ambulation three times a day or as ordered and mouthcare. While most top five nursing interventions within the literature vary, ambulation is frequently cited as the most missed nursing care intervention (Cho et al., 2015; Kalisch, Landstrom, & Williams, 2009; Kalisch et al., 2013; Orique et al., 2016; Palese et al., 2015). Within this study, ambulation, mouth care, turning the patient every 2 hours, timely medication administration, monitoring intake/output, attending interdisciplinary conferences, answering the call light within five minutes, and timely assessment of medication effectiveness were included in each education group's top five missed nursing interventions.

Ambulation, mouth care, and turning the patient are considered basic care interventions and may be less prioritized than nursing care interventions that improve patient conditions. Also,

ambulation and turning the patient normally require at least two people to accomplish, which may not always be available due to limited labor resources.

Timely medication administration, timely assessment of medication effectiveness, and response to call light within five minutes are individual need interventions that were missed often within this study. Timely medication administration being missed often could be due to material resources such as the medications not being available when needed. While administrating the medication within the time allotted is encouraged, assessing the effectiveness of that medication may lack due to unexpected rises in patient acuity or urgent patient situations that occur after the medication administration. Not answering a call light within five minutes was in the traditional BSN top five list. This may mean that traditional BSN nurses are more attuned to overall patient assessment needs than patient's individual requests. Also, traditional BSN nurses may choose to delegate this task more than the other academic groups.

Other factors not exclusive to all groups were monitoring intake and output and attending interdisciplinary conferences. Monitoring intake and output was the third most missed nursing intervention of the RN-BSN group. While monitoring intake and output is often considered an assessment of the patient, monitoring intake/output could be viewed as an aspect that a nursing assistant may complete, which is why more nurses tend to report missing this care intervention. Attending interdisciplinary conferences was the third most missed intervention by ADN nurses. This finding is consistent with the literature as being a most missed intervention (Cho et al., 2015; Kalisch, Tschannen, Lee, & Friese, 2011; Kalisch et al., 2013, Orique et al., 2016). It is possible that attending conferences is not viewed as a priority, especially considering having to take time off from work and the costs associated with the conference.

Specific Aim II

The second specific aim was to determine job satisfaction when care is missed by ADN nurses, RN-BSN nurses, and traditional BSN nurses. RN-BSN nurses were more satisfied in their current position and ADN nurses were the least satisfied. However, there was no significant differences noted between the three groups.

There is limited literature on job satisfaction and missed nursing care and even fewer studies looking at academic preparation and job satisfaction. While this study found that RN-BSN nurses were more satisfied in their current position, Kalisch, Tschannen, & Lee (2011) reported that baccalaureate degree nurses were less satisfied than associate degree nurses but only regarding overall occupation and not current position. Within the Kalisch, Tschannen & Lee study, education was not assessed within the current position job satisfaction regression model. Although Bragadóttir et al. (2020) reported that missed nursing care was significantly associated with current position satisfaction, this study also did not report academic preparation as a variable.

Specific Aim III

The third specific aim asked if there was a difference in the amount of missed nursing care reported by ADN, RN-BSN, and traditional BSN nurses. Most of the literature does not report differences by academic preparation regarding missed nursing care. This study found that associate degree nurses reported more missed nursing care than RN-BSN nurses and traditional BSN nurses.

Within this study, associate degree nurses missed more nursing care interventions. Only two studies within the literature report similar findings. In a study by Kalisch, Landstom, and Williams (2009), associate degree nurses reported more missed nursing care than traditional

bachelor's degree and diploma nurses (X ADN = 1.913, X BSN or Greater = 1.803; p = .023). McMullen et al. (2017) also reported that nurses with an associate degree missed more nursing care interventions than higher education levels but did not provide a statistical analysis.

While this study did find that associate degree nurses reported missed nursing care more than RN-BSN nurses and traditional bachelor's degree nurses, the results were not statistically significant. One reason for education not being statistically significant in this study could be unit specific nurse practice environments. Units that employ teamwork strategies or have a higher number of nurses on the unit have a significant association with less missed nursing care (Hessels et al., 2015). A second reason could be that nurses prepared at a baccalaureate level are more apt to critically think through clinical scenarios and problem solve when dealing with increased patient complexity.

Also, when examining individual nursing care interventions, this study found that response to call light within 5 minutes was statistically significant between education groups. ADN and RN-BSN nurses reported this intervention as less missed than traditional BSN nurses. This is the first known study to report this statistical significance. Furthermore, this intervention was included in the top five missed nursing care interventions for the traditional BSN education group but not within the other two education groups. This finding is consistent with current literature for being a top nursing intervention missed (Kalisch et al., 2012).

Specific Aim IV

The fourth specific aim was to use the MISSCARE Survey to determine the amount of missing nursing care reported by ADN, RN-BSN nurses, and traditional BSN nurses while considering years of experience. There were no significant differences in the amount of missed nursing care between the three groups when controlling for years of experience. The majority of

nurses within this study had at least 5 years of nursing experience. Overall, 20% of the nurses had at least 5 years of experience and 51% had more than 10 years of experience within their role regardless of academic preparation. The percentage of nurses having at least 5 years of experience is similar to the literature (Bragadóttir et al., 2016; Kalisch, Tschannen & Lee, 2011).

While years of nursing experience has not specifically been studied in regards academic preparation and missed nursing care, years of experience and missed nursing care has been reported in the literature. The finding from this study contrasts with the literature. Kalisch and Lee (2010) found that nurse with 5-10 years of experience (B = .084, p = .018) and greater than 10 years of experience (B = .089, p = .003) missed more nursing care than those with less than 6 months experience. Also, a study by Kalisch et al. (2013) found that nurses with greater than 2 years of experience (p = 0.06) reported more missed nursing care than those with less than 6 months experience (p = .116).

Specific Aim V

The fifth specific aim was to determine if academic preparation, years of experience, and job satisfaction can predict missed nursing care. Within this study, academic preparation was not statistically significant with being a predictor of missed nursing care. This means that regardless of whether a nurse has an ADN, RN-BSN, or traditional BSN degree, the type of degree is not equivalent to missing more nursing care interventions. This is consistent with findings in the literature. Castner et al. (2015) examined nursing education on missed nursing care in the context of a hospital merger. While 50% of nurses had a baccalaureate degree or higher, the level of nursing education did not affect perceptions of missed nursing care (p = 0.145). Similarly, Cho et al. (2015) did not find any statistical significance for academic preparation (p = 0.566, CI [-0.118, 0.065]) predicting missed nursing care when examining the effects of increased nurse

staffing on missed nursing care. The lines between academic preparation may be blurred as more organizations are requiring nurses with diploma and ADN degree to pursue higher degrees. While associate degree nurses are usually more task oriented, higher educated nurses may perform more complex nursing interventions and are taught to prioritize their time more effectively during a shift.

Regarding nursing experience, the years of experience as a nurse was not associated with being a predictor of missed nursing care. Therefore, the years of experience a nurse has is not equivalent to missing more nursing care interventions. This finding is consistent with at least three studies. Kalisch, Tschannen, and Lee (2011) examined whether nurse staffing predicted missed nursing care within ten hospitals in a Midwestern state. At least 51% of most units retained staff with greater than five years of experience. After a multiple regression analysis, nursing experience was not found to be a significant predictor of missed nursing care ($p = 0.58$). In contrast, Cho et al. (2015) reported a greater proportion of nurses with less than one year of nursing experience on higher staffed units (32.8%) compared to lower staffed units (17.1%). Years of nursing experience was not significantly related to missed nursing care: nurses with <1 year of experience ($p = 0.151$), 1-2 years of experience ($p = 0.256$), 3-4 years of experience ($p = 0.203$), and > 5 years of experience ($p = 0.436$). Similarly, Orique et al. (2016) examined unit-level nurse workload on missed nursing care and determined that years of nursing experience was not significantly associated with missed nursing care but no data analysis on years of experience was provided. One possible reason for experience not being an indicator of missed nursing care in this study is that nurses with increased years of experience are more competent and conscious in their planning of nursing care activities. At least half of the participants within this study had greater than 10 years of experience in their role.

The only statistically significant predictor of missed nursing care within this study was job satisfaction. This study found the higher the job satisfaction among the nurses, the lower will be the amounts of missed nursing care. This is similar to the literature related to job satisfaction as providing efficient patient care was limited to higher nursing satisfaction (Newman & Maylor, 2002; Williams, 1998). There are limited but mixed outcomes in the literature for job satisfaction predicting missed nursing care. Bragadóttir et al. (2020) conducted a cross-sectional study across four countries and found that nurses who reported less job satisfaction also reported more missed nursing care interventions ($p < .001$). In contrast, Orique et al. (2016) found current position job satisfaction not to be a predictor of missed nursing care when examining nurse workload in acute and post-acute settings.

Testing of Model

The investigator-developed a conceptual model derived from the NIC theory. This model illustrated that human capital (academic preparation and nursing experience) can affect patient outcomes (missed nursing care) and organizational outcomes (job satisfaction) can affect patient outcomes (missed nursing care). Organizational characteristics such as hospital workload and shift type can also impact` job satisfaction. Due to a small sample size, the conceptual model could not be tested.

While the conceptual model was not tested, there are important relationships to note within the model. In this study, human capital did not influence patient outcomes. No significant differences were found between the degree type and years of nursing experience on missed nursing care. Job satisfaction was related to patient outcomes, as nurses who were more satisfied in their current position reported less missed nursing care. Job satisfaction was also the only predictor of missed nursing care.

Limitations

This study was conducted during a global pandemic, which limited the ability to recruit participants to the study. Response rates to the survey were less than average. Due to AMSN requirements of getting on a distribution list schedule for research studies, there was a two-month delay between the time the first and second survey email was sent to participants, which could have limited the response rate. Also, emails from the AMSN may have went to the participants junk mail folder instead of their inbox, which could have also limited response rates. Low response rates limit the amount of generalization the results can have and prevented testing of the hypothesized model.

The sample for this study was small with a medium effect. Having a smaller sample could be the reason why there were limited significant relationships within this study. Sample size for the ADN category was half the size of the RN-BSN and BSN categories. This was expected as the Institute of Medicine (2010) pushed for more registered nurses to pursue a baccalaureate or higher degree by 2020. Also, the use of managers and administrative nurses as participants within this study could be considered a limitation as those nurses often do not provide direct care. Nevertheless, they can provide valuable insight to missed nursing care that happens within the units and have been included in several previous studies of missed nursing care (Kalisch & Lee, 2012; McMullen et al., 2017).

The MISSCARE Survey demographic question section was not changed from the original written survey. Survey item questions were written verbatim including short answer questions. The first survey question, “Name of the unit you work on” elicited many different responses, which limited being able to pinpoint exactly what type of unit several of the nurses

worked on. It was inferred that nurses had some sort of medical-surgical background, due to being a member of the AMSN, when the unit type could not be distinguished.

Implications

While there were few statistically significant findings in this study, the results provide several implications for nursing practice and nursing education. First, findings from this study adds to the body of nursing knowledge regarding the RN-BSN population. The RN-BSN nursing group has been limited in study. As more nurses are pursuing a higher degree, opportunities to learn about how education can affect the care given by these nurses will provide organizations and academia a foundation to examine current nursing practices and offer chances for growth.

Second, this study provides support for analyzing the different types of missed nursing care related to educational groups. While missed nursing interventions within this study were remarkably similar between the groups, these nursing interventions are also like previous studies on missed nursing care. The potential to identify those missed nursing interventions that impact patient outcomes would be crucial to help alleviate missed nursing care in the future and develop potential strategies to improve patient outcomes for both organizations and higher academia.

Future Research

There are several recommendations for future research. First, the RN-BSN group is an extensively growing population of nurses, as organizations were trying to reach the IOM (2010) mandate of increasing their baccalaureate proportion of nurses to at least 80 percent by the year 2020. Future studies can address how this population of nurses compares to associate degree and baccalaureate degree nurses in terms of missed care interventions. While regulating bodies continue to pursue the baccalaureate degree as a higher level of educational achievement for all nurses, this research can provide vital information to identify whether higher levels of education

contribute to missed nursing care. Once this is clarified, regulating bodies can direct their efforts in determining the appropriate pervasive course of action for nurses to achieve higher degrees.

Second, more research on nursing education and missed nursing care has the potential to help academic programs. This research may help educators understand what interventions are missed and provide a foundation to build these concepts into the clinical portion of the curriculum. Furthermore, it can help support the need for improving student's clinical competency. Academic programs can then focus on increasing nursing students' competency in delegation and prioritizing clinical needs within nursing academia.

Third, further research should be conducted using all sections of the MISSCARE Survey with this population group. This study only used the demographics section and Part A of the survey. Part B of the survey asks reasons for missed care including communication factors, material resources, and labor resources. Identifying the reasons for missing nursing care can open the potential for organizations to pinpoint areas of concern and determine what measures can be used to decrease missed nursing care and increase patient outcomes.

Last, the hypothesized model derived from the NIC theory should be tested with a larger sample size. Within the hypothesized model, one presumption was that human capital (academic preparations and nursing experience) can affect patient outcomes (missed nursing care) and organization outcomes (job satisfaction). While this research study had no significant correlation for academic preparation, years of experience, or job satisfaction affecting missed nursing care, job satisfaction was found to be a predictor of missed nursing care which can affect patient outcomes and potentially organizational outcomes. Future studies of this model could provide key indicators to help organizations retain nursing human capital to improve both patient and organization outcomes.

Summary

It is important to acknowledge, and measure missed nursing care. This study brings to light the different nursing care interventions missed by academic preparation. Being one of the first studies to explore the RN-BSN group on missed nursing care, these results provide new information for organizations and academic settings to help improve nursing care outcomes. The result of this study also bridges the gap between theory and practice.

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APPENDICES

Appendix A: Permission to use MISSCARE Survey

kalisch, Bea <bkalisch@med.umich.edu>
Tue 6/13/2017 10:24 PM

Dear Jessica

Thank you for your interest in the *MISSCARE Survey.* You have permission to use it if you are willing to send the results (data) so that I can continue to monitor the psychometric properties of the tool. Let me know if you have questions.

Sincerely,

Bea

Beatrice J. Kalisch, RN, PhD, FAAN

Titus Distinguished Professor of Nursing

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School of Nursing

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bkalisch@umich.edu

7342555998 or 7342220920

Appendix B: Participant Recruitment Letter

Dear <Name>,
My name is Jessica Bechard, and I am a student at East Tennessee State University. I am working on my PhD in nursing. In order to finish my studies, I need to complete a research project for my dissertation. The name of my research study is Missed Nursing Care: Accounting for Education, Experience, and Job Satisfaction in Registered Nurses. I would like to know your perceptions of nursing care interventions missed and/or delayed by nurses. Please consider participating. By agreeing to participate, you will be adding to the current body of nursing knowledge.

The purpose of this study is to examine missed nursing care in the context of academic preparedness, years of experience, and job satisfaction. I would like to give a brief survey to members of the Academy of Medical Surgical Nurses using the REDCap (Research Electronic Data Capture) platform. It should only take about 10-15 minutes to finish. You will be asked questions about missed nursing care, job satisfaction, and demographic questions related to your job role. The risks of filling out this survey are minimal since the survey is anonymous and only includes the inconvenience of the time to answer the questions. However, you may also feel better after you have had the chance to express yourself about missed nursing care. This study may benefit you or others by providing information that may help understand the relationship between academic preparation, years of experience, and job satisfaction on missed nursing care. Results of this study will be shared in a future publication.

Your confidentiality will be protected as best we can. Since we are using technology no guarantees can be made about the interception of data sent over the internet by any third parties, just like with emails. We will make every effort to make sure that your name is not linked with your answers since your name will not be asked. IP addresses will not be collected either. Survey data will be stored within REDCap, a secure web software platform designed for managing online surveys and databases. REDCap uses encryption mechanisms to protect traffic between the Webserver and the End User.

Although your rights and privacy will be maintained, the research records may be looked at by individuals that have the legal right to see that information. This may include the ETSU IRB overseeing this research, other individuals at the University with the responsibility for ensuring we follow the rules related to this research, the federal Office of Human Research Protections (OHRP) that protects participants like you, and the research team including myself, my dissertation chair, Dr. Lisa Haddad and my statistician, Dr. Abbas Tavakoli.

Taking part in this study is voluntary. You may decide not to take part in this study. You can quit at any time. You may skip any questions you do not want to answer, or you can exit the online survey form if you want to stop completely. If you quit or decide not to take part, the benefits that you would otherwise get will not be changed.

If you have any research-related questions or problems, you may contact me, Jessica Bechard, at 615-796-6151. I am working on this project together with my Faculty Advisor Dr. Lisa Haddad. You may reach her at 423-439-4510. This research is being overseen by an Institutional Review Board (IRB). An IRB is a group of people who perform independent review of research studies. You may also contact the ETSU IRB at 423.439.6054 or irb@etsu.edu for any questions you may have about your rights as a research participant.

If you wish to participate in the survey, please click the survey link. By clicking the survey link , you are acknowledging that you have read the information in this email, you agree to volunteer, you are at least 18 years of age, and you are physically present in the United States. Please click here https://redcap.link/MISSCAREsurvey

Sincerely,
Jessica Bechard, PhD(c), MSN, RN
Doctoral Candidate
East Tennessee State University
bechard@etsu.edu

MISSED NURSING CARE (*The MISSCARE Survey*)

1. **Name of the unit** you work on: _____

2. I spend **the majority of my working time** on this unit**:** _____ yes _____ no

3. **Highest education level:**
   1) _____ Grade school
   2) _____ High School Graduate (or GED)
   3) _____ Associate degree graduate
   4) _____ Bachelor's degree graduate
   5) _____ Graduate degree

4. **If you are a nurse, what is the highest degree:**
   1) _____ LPN Diploma
   2) _____ RN Diploma
   3) _____ Associate's degree in nursing (ADN)
   4) _____ Bachelor's degree in nursing (BSN)
   5) _____ Bachelor's degree **outside** of nursing
   6) _____ Master's degree (MSN) or higher in nursing
   7) _____ Master's degree or higher **outside** of nursing

5. **If you are a nurse, please select <u>ALL</u> degrees you have:**
   1) _____ LPN Diploma
   2) _____ RN Diploma
   3) _____ Associate's degree in nursing (ADN)
   4) _____ Bachelor's degree in nursing (BSN)
   5) _____ Bachelor's degree **outside** of nursing
   6) _____ Master's degree (MSN) or higher in nursing
   7) _____ Master's degree or higher **outside** of nursing

6. **Gender:** _____ Female _____ Male _____ Prefer not to specify

7. **Age:**
   1) _____ Under 25 years old (<25)
   2) _____ 25 to 34 years old (25-34)
   3) _____ 35 to 44 years old (35-44)
   4) _____ 45 to 54 years old (45-54)

5) _____ 55 to 64 years old (55-64)
6) _____ Over 65 years old (65+)

8. **Job Title/Role:**
   1) _____ Staff Nurse (RN)
   2) _____ Staff Nurse (LPN)
   3) _____ Nursing Assistant (e.g., nurse aides/tech)
   4) _____ Nurse manager, assistant manager (e.g. administrators on the unit)
   5) _____ Other [Please specify: _____]

9. Number of **hours usually worked per week** (check only one)
   1) _____ less than 30 hours per week
   2) _____ 30 hours or more per week

10. **Work hours** (check the one that is most descriptive of the hours you work)
   1) _____ Days (8 or 12 hour shift)
   2) _____ Evenings (8 or12 hour shift)
   3) _____ Nights (8 or 12 hour shift)
   4) _____ Rotates between days, nights or evenings

11. **Experience in your role:**
   1) _____ Up to 6 months
   2) _____ Greater than 6 months to 2 years
   3) _____ Greater than 2 years to 5 years
   4) _____ Greater than 5 year to 10 years
   5) _____ Greater than 10 years

12. **Experience** on your **current patient care unit:**
   1) _____ Up to 6 months
   2) _____ Greater than 6 months to 2 years
   3) _____ Greater than 2 years to 5 years
   4) _____ Greater than 5 year to 10 years
   5) _____ Greater than 10 years

13. Which **shift** do you most often work?
   1) _____ 8 hour shift
   2) _____ 10 hour shift
   3) _____ 12 hour shift
   4) _____ 8 hour and 12 hour rotating shift
   5) _____ Other [Please specify: _____]

14. In the past 3 month, how many hours of **overtime** did you work?
    1) _____ None
    2) _____ 1-12 hours
    3) _____ More than 12 hours

15. In the past 3 months, how many days or shifts did you **miss work** due to illness, injury, extra rest etc. (exclusive of approved days off)?
    1) _____ None
    2) _____ 1 day or shift
    3) _____ 2-3 days or shifts
    4) _____ 4-6 days or shifts
    5) _____ over 6 days or shifts

16. Do you plan to **leave your current position?**
    1) _____ in the next 6 months
    2) _____ in the next year
    3) _____ no plans to leave

17. How often do you feel **the unit staffing is adequate?**
    1) _____ 100% of the time
    2) _____ 75% of the time
    3) _____ 50% of the time
    4) _____ 25% of the time
    5) _____ 0% of the time

18. What **type** of organization do you currently work in?
    1) _____ Nongovernment not-for-profit hospital
    2) _____ Investor-owned (for-profit) hospital
    3) _____ State and/or local government hospital
    4) _____ Federal government hospital
    5) _____ Other [Please specify: _____]

19. **On the current or last shift** you worked, how many **patients** did you care for?

    _____

    19-a. how many **patient-admissions** did you have (i.e. includes transfers into the unit)? _____

    19-b. how many **patient-discharges** did you have (i.e. includes transfers out of the unit)? _____

Please check one **response for each question.**

	Very satisfied	**Satisfied**	**Neutral**	**Dissatisfied**	**Very dissatisfied**
20. **How satisfied** are you in your **current position**?					
21. Independent of your current job, **how satisfied** are you with **being a nurse or a nurse assistant?**					
22. **How satisfied** are you with **the level of teamwork on this unit?**					

Section A — Missed Nursing Care

Nurses frequently encounter multiple demands on their time, requiring them to reset priorities, and not accomplish all the care needed by their patients. To the best of your knowledge, **how frequently** are the following elements of **nursing care <u>MISSED</u> by the nursing staff (including you) on your unit?** ***Check only one box for each item.***

	Always missed	**Frequently** missed	**Occasionally** missed	**Rarely** missed	**Never** missed
1) Ambulation three times per day or as ordered					
2) Turning patient every 2 hours					
3) Feeding patient when the food is still warm					
4) Setting up meals for patient who feeds themselves					
5) Medications administered within 30 minutes before or after scheduled time					
6) Vital signs assessed as ordered					
7) Monitoring intake/output					
8) Full documentation of all necessary data					
9) Patient teaching about illness, tests, and diagnostic studies					
10) Emotional support to patient and/or family					
11) Patient bathing/skin care					
12) Mouth care					
13) Hand washing					
14) Patient discharge planning and teaching					
15) Bedside glucose monitoring as ordered					
16) Patient assessments performed each shift					

	Always missed	**Frequently** missed	**Occasionally** missed	**Rarely** missed	**Never** missed
17) Focused reassessments according to patient condition					
18) IV/central line site care and assessments according to hospital policy					
19) Response to call light is initiated within 5 minutes					
20) PRN medication requests acted on within 15 minutes					
21) Assess effectiveness of medications					
22) Attend interdisciplinary care conferences whenever held					
23) Assist with toileting needs within 5 minutes of request					
24) Skin/Wound care					

VITA

JESSICA L. BECHARD

Education:	Ph.D. Nursing, East Tennessee State University Johnson City, Tennessee, 2021
	M.S. Nursing, Western Kentucky University Bowling Green, Kentucky, 2012
	B.S. Nursing, Western Kentucky University Bowling Green, Kentucky, 2008
	A.D. Nursing, Western Kentucky University Bowling Green, Kentucky, 2002
Professional Experience:	Course Instructor II, Western Governors University Salt Lake City, Utah, 2016 – present
	Assistant Professor, Tennessee State University Nashville, Tennessee, 2012-2016
	Registered Nurse, The Medical Center at Bowling Green Bowling Green, Kentucky 2003-2016
Publications:	Bechard, J. L. (2015). Delayed cord clamping: Is it necessary to wait? *International Journal of Childbirth Education, 30*(2), 14-16.
Honors and Awards:	BSN Outstanding Student, Western Kentucky University, 2008
	Sigma Theta Tau Nursing Honor Society, Western Kentucky University, 2009