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# RN Perceptions of Coworker Incivility and Collective Efficacy as Influential to Hospital Structures and Outcomes

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RN PERCEPTIONS OF COWORKER INCIVILITY AND COLLECTIVE EFFICACY AS  
INFLUENTIAL TO HOSPITAL STRUCTURES AND OUTCOMES

by

Jessica G. Smith

A Dissertation Submitted in  
Partial Fulfillment of the  
Requirements for the Degree of

Doctor of Philosophy

in Nursing

at

The University of Wisconsin-Milwaukee

May 2016

## ABSTRACT

### RN PERCEPTIONS OF COWORKER INCIVILITY AND COLLECTIVE EFFICACY AS INFLUENTIAL TO HOSPITAL STRUCTURES AND OUTCOMES

by

Jessica G. Smith

The University of Wisconsin, Milwaukee, 2016  
Under the Supervision of Dr. Karen H. Morin, PhD, RN, ANEF, FAAN

**Background:** An aging population and retiring workforce might affect United States health delivery care and could threaten the quality of care in hospitals. Nurses, as the largest profession in healthcare, can buffer these effects if supported in a safe nurse work environment. The purpose of this dissertation was to understand how *peer-to-peer registered nurse workplace incivility* as a mediator, and *collective efficacy* as a moderator, influence relationships among hospital structures (i.e. *nurse manager leadership* and *staffing*) and hospital outcomes (i.e. *missed nursing care* and *patient safety cultures*).

**Methods:** Donabedian's (1980) structure-process-outcomes conceptual framework was the theoretical basis for this study. A cross-sectional, correlational design was employed that involved path analysis to investigate a conditional process model. Six instruments were administered online: 1) the Hospital Survey on Patient Safety; 2) the Acute Care Missed Nursing Care Subscale; 3) the Workplace Incivility Scale (WIS); 4) the Collective Efficacy Beliefs Scale; 5) the Practice Environment subscale of the Nursing Work Index; and 6) a demographic information form. In all, surveys comprised 117 items.

**Findings:** The total sample ( $N$ ) was 212. There were small to moderate inverse relationships between: 1.) *nurse manager leadership* and *coworker incivility* ( $r = -.38, N = 212, p < 0.01$ ), 2.) *staffing* and *coworker incivility* ( $r = -.28, N = 212, p < 0.01$ ), and 3.) *coworker incivility* and

*patient safety culture* ( $r = -.19, n = 212, p < 0.01$ ). There was a moderate positive relationship between *nurse manager leadership* and *patient safety culture* ( $r = .36, n = 212, p < 0.01$ ). There was a moderate relationship between *staffing* and *patient safety culture* ( $r = .30, n = 212, p < 0.01$ ). There was a small inverse correlation between the level of *staffing* and *missed nursing care* ( $r = -.15, n = 212, p < .05$ ). The relationship between missed nursing care and the structure and process variables was not influenced by the mediator variable, *coworker incivility*. *Missed nursing care* was not significant as an outcome variable with or without *coworker incivility* as a mediator. *Patient safety culture* was not significant as an outcome variable with *coworker incivility* as a mediator or with *collective efficacy* as a moderator. Inspection of hierarchical regression indicated that *nurse manager leadership*, *staffing*, and *coworker incivility* predicted 15% of the variance for *patient safety culture*, with nurse manager leadership explaining most of the variance.

**Implications:** Results support the important role nurse manager leadership can play in relation to patient safety outcomes at hospital patient care units. Collective efficacy among registered nurse peers and hospital staff should be further studied through research to better understand its direct effect on improving patient safety cultures.

**Limitations:** Results may be limited to Magnet hospitals. Response rate was low (7.8%) with a potential for sample bias.

**Recommendations:** Further instrumental development of the Missed Nursing Care Survey is needed. More advanced methodological approaches to studying missed nursing care may improve the validity for measuring this phenomenon.

## DEDICATION

To Mom and Dad: Thank you for protection, guidance, love, and presence,  
To David Smith, my brother, my best friend,  
To my major professor, Dr. Karen Morin, for keeping me aligned with the purpose of this  
dissertation; thank you for challenging my thinking,  
And last, but not least,  
In loving memory of my grandmother, Thelma Smith,  
For the precious time we spent together.

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## Chapter One

### Introduction

Inspection of evidence suggests that the nurse work environment in hospitals around the world (i.e. United States, North Korea, China, Saudi Arabia, and Switzerland) has both a direct and indirect influence on patient outcomes (Aboshaiqah, 2015; Cho, Chin, Kim, & Hong, 2016; Desmedt et al., 2012; Shin & Hyoun, 2016; Bai, 2016; Ma, Olds, & Dunton, 2015; Shin & Hyun, 2016). Poor outcomes influenced by the nurse work environment include patient adverse events such as pressure ulcers, medication errors, and falls with injury (Cho, Chin, Kim, & Hong, 2016; Shin & Hyoun, 2016). The cost of poor outcomes in health care associated with hospital structures and processes are widespread and remain a significant threat to public health in the United States (Agency for Healthcare Research and Quality [AHRQ], 2013). It is estimated that between 44,000 and 98,000 people in the United States die in hospitals each year from medical errors (Institute of Medicine [IOM], 1999, as cited in AHRQ, 2013). The prevalence of preventable adverse events in non-obstetric hospital settings among adult patients in the United States is estimated to be about 3,023,000 (Jha et al., 2009; AHRQ, 2013). Total cost per error in United States hospitals is estimated in 2013 to be approximately \$15,000 (AHRQ, 2013).

The Agency for Healthcare Research and Quality (AHRQ) references patient safety infrastructures within hospitals as necessary to improve health care climates that can shape the future of healthcare (AHRQ, 2013). Examples of patient safety infrastructures are increased support of non-punitive error reporting, collaboration across disciplines, and adequate resources for the prevention of adverse events (AHRQ, 2013). Specific hospital structures, such as *nurse manager ability, leadership, and support of nurses* and *staffing and resource adequacy*, may contribute to negative *patient safety cultures* (Friese, Earle, Siber, & Aiken, 2010; Kalisch &



Lee, 2009). *Peer-to-peer registered nurse workplace incivility*, a hospital process, is an established threat to nurse and hospital outcomes; for example, Lewis and Malecha (2011) found that *peer-to-peer registered nurse workplace incivility* was associated with \$11,581 per nurse per year of lost productivity. However, the negative influence of hospital processes involving registered nurses on patient safety cultures remains problematic despite growing evidence about causes of adverse patient outcomes in hospitals (AHRQ, 2013).

The purpose of this dissertation was to investigate the influence of hospital structures, hospital processes, and hospital outcomes. Hospital structures were registered nurse perceptions of *nurse manager ability, leadership, and support of nurses* and *staffing and resource adequacy*. Hospital processes were *peer-to-peer registered nurse workplace incivility* and *collective efficacy* among the registered nurse work group. Hospital outcomes were registered nurse perceptions of *missed nursing care* and *patient safety culture*. Donabedian's (2003) Structure-Process-Outcome conceptual framework was the overarching model with which study variables are aligned. The purpose of this chapter is to present the statement of the problem, the conceptual framework for the problem, purpose and hypotheses, definition of relevant terms, and significance of this dissertation.

### **Statement of Problem**

The absence of a clear, middle-range model about how hospital structures, hospital processes, and hospital outcomes interact from the perspective of registered nurses is a serious problem for hospitals as organizations that aim for positive patient outcomes. Hospital structures include registered nurse perceptions of *nurse manager ability, leadership, and support of nurses*, as well as registered nurse perceptions of *staffing and resource adequacy*. Hospital processes include the presence of *peer-to-peer registered nurse workplace incivility* and *collective efficacy*

among the nurse work group. Hospital outcomes include nurse perceptions of *patient safety cultures* and *missed nursing care* in the hospital. Together, hospital structures, hospital processes, and hospital outcomes intersect and shape the nurse work environment for thousands of registered nurses working in hospitals across the United States. It is unknown how much the culture of the nurse work environment has the potential to positively or negatively influence patient care. This study was one investigation toward understanding how hospital structures, hospital processes, and hospital outcomes interact empirically through a mediation-moderation conditional process analysis from the broader Donabedian (1980) framework. The problem is explicated in the following paragraphs.

It is projected that population changes within the United States are a current and future threat to health care delivery quality and safety. Examples of changes among the United States population that demand attention to health care provision include (1) an increase in chronic diseases requiring effective management, (2) an aging population, (3) an aging, retiring nursing work force, and (4) an increased awareness of demographic changes (i.e. composition of race majorities and minorities) (AHRQ, 2013; Clipper, 2014; IOM, 2011a). As the general population ages, health care consumers will require more health care services for longer periods to assist with chronic disease management as a result of longer life expectancies from technological advancements. In addition, there are more than 2.8 million RNs; however, according to the U.S. Bureau of Labor Statistics, approximately 20 percent will retire by 2022 (Clipper, 2014). In the future, the United States population, and workforce, will continue to age.

These anticipated United States population changes, along with the technological advances for more cost-intensive care, have fueled national political discussions about the need to address these burgeoning problems. The anticipation of population changes has added impetus

to criticism about the United States health care system as one that offers health services as a privilege for those who can afford care and not as a basic human right (Maruthappu, Ologunde, & Gunarajasingam, 2013). Despite continual changes in health care coverage through Medicare, Medicaid, and the State Children's Health Insurance Program (SCHIP) over the course of the last century, the demand has continued for more affordable care (Maruthappu, Ologunde, & Gunarajasingam, 2013). Congress passed the Patient Protection and Affordable Care Act (PPACA) in part as a response to growing concerns about lack of minimum essential health care insurance coverage to enable access to health care (Supreme Court of the United States, 2011). Since October 2013, 9.3 million Americans have become eligible to access health care due to a new provision of the Patient Protection and Affordable Care Act (PPACA) allowing for open enrollment in federal and state health insurance exchanges. It is estimated that this number is expected to increase to 30 to 34 million in the next few years (Clipper, 2014).

Stakeholders affected by changes in health care access improvement include health care professionals (i.e. medical doctors, registered nurses, nurse practitioners, and pharmacists), patients, and those within other systems connected with health care such as the sectors of education and government. One collective that has not been consulted enough is the nursing profession. Registered nurses comprise the largest health care profession in the United States with more than 3.1 million registered nurses (American Association of Colleges of Nursing, 2011). According to the United States Bureau of Labor Statistics (2013), approximately 67% of registered nurses work in hospital settings including general medical surgical hospitals (29.46%), specialty hospitals (22.84%), and psychiatric and substance abuse hospitals (15.13%). The high percentage of registered nurses involved in hospital patient care is one good reason to focus on the role of the registered nurse in creating healthy work environments in hospital settings in the

interest of sustaining and cultivating a culture of safe patient care. Registered nurses, in addition to their well-represented presence in hospital settings, provide hours of direct bedside patient care in hospitals and are known to the public as trusted patient advocates in ensuring positive patient outcomes (American Nurses Association, 2015).

Despite the large representation of registered nurses in hospital settings, and the potential for positive influence registered nurses have in serving as ethical, trusted health care professionals, it is concerning that the goal to improve of hospital health care quality is not of equal importance to ensuring minimum essential health care access. An absence of measures to ensure health care quality remains a clear threat to patients, providers, and the health care system at large; this problem will not self-resolve without careful analysis and intervention. Perceptions of registered nurses about health care culture can be valuable to inform interventions to improve hospital outcomes, or health care quality, for patients.

Problems inherent within a changing population, along with shifting needs and expectations for health care, are not easily or readily changeable without close attention to the nursing processes involved in affecting hospital structures and outcomes for patient care. Hospital structures, processes, and outcomes that the nurse influences warrant continuing investigation given the large presence nurses have in providing direct bedside patient care in hospitals (U.S. Bureau of Labor Statistics, 2013). In the following paragraphs, theoretical relationships between hospital structures, processes, and outcomes that nurses influence are discussed to demonstrate a need for empirical investigation about the role of registered nurse perceptions.

One hospital structure critical for investigation is the registered nurse perception of *nurse manager ability, leadership, and support of nurses*. Measuring perceptions of nurse management

using the Practice Environment Scale of the Nursing Work Index (PES-NWI) will give one indication of perceptions of hospital structure. Empirical evidence indicating positive or negative perceptions of nurse management may inform the use of specific leadership principles. For example, one leadership technique discussed in nursing literature is “authentic leadership” (Vollers et al., 2009). The unit nurse manager may employ authentic leadership by encouraging registered nurse staff members to use honest communication to promote healthy working conditions for nurses and safer care for patients (Vollers et al., 2009). The American Association of Critical Care Nurses considers authentic leadership one of six standards for establishing and maintaining a healthy work environment for nurses essential to promote optimal patient outcomes (Vollers et al., 2009). Perceptions of *nurse manager ability, leadership, and support of nurses* should be investigated to generate knowledge to support the investigation and use of different leadership styles among nurse managers.

The second hospital structure needing investigation is *staffing and resource adequacy*. One example of *staffing and resource adequacy* is nurse staffing practice perceptions as one potential explanation of hospital patient outcomes (Doran & Pringle, 2011). Progress has been made in the United States regarding policy to promote safe registered nurse working conditions. For example, *The Registered Nurse Safe Staffing Act of 2014 (S. 2353)*, sponsored by Senator Jeff Merkely of Oregon, will enable registered nurses to have greater support for decision-making to ensure safe nurse staffing in hospitals for optimal patient outcomes (American Nurses Association, 2014). The translation of this legislation in individual hospitals, however, is not published at this time. In addition, examining registered nurse perceptions of hospital unit working conditions may explain the prevalence of negative hospital processes cultivated by registered nurses.

In addition to hospital structures, hospital processes involved in health care delivery by registered nurses is also critical in mediating the influence of the health care system structure on safe patient care and nursing care missed in hospitals. One such hospital process is *peer-to-peer registered nurse workplace incivility*. Evidence exists to suggest that *peer-to-peer registered nurse workplace incivility* is influenced in part by organizational structures such as leadership behaviors and policies (Crampton & Hodge, 2008; Laschinger, Wong, Cummings, & Grau, 2014; Leiter, Laschinger, Day, & Oore, 2011). Preliminary evidence also exists to suggest a relationship between *peer-to-peer registered nurse workplace incivility* and patient outcomes (Laschinger, 2014). Specific consequences of workplace incivility related to organization and employee outcomes increased turnover intent (Felblinger, 2009; Giumetti et al., 2012; Laschinger, Finegan, & Wilk, 2009b; Leiter, Price, & Laschinger, 2010; Wilson, Diedrich, Phelps, & Choi, 2011), increased absenteeism (Giumetti et al., 2012; Wilson et al., 2011), mental health strain (Clark, 2008a; Lim, Cortina, & Magley, 2008; Gilin Oore et al., 2010; Sliter et al., 2010; Wilson et al., 2011), physical health strain (Lim, Cortina, & Magley, 2008), burnout (Laschinger, Finegan, & Wilk, 2009a), and patient safety concerns (Clark, Olender, Cardoni, & Kenski, 2011; Felblinger, 2009; Porto & Lauve, 2006).

Not only is it possible for perceptions of *nurse manager ability, leadership, and support of nurses* and perceptions of *staffing and resource adequacy* to influence perceptions of *peer-to-peer registered nurse workplace incivility*, but such registered nurse perceptions may also influence *collective efficacy* of the hospital unit work group. Therefore, *collective efficacy* is the second hospital process critical to investigate in the hospital unit work group. *Collective efficacy*, a concept from social psychology, refers to the belief of the group (e.g. registered nurse work group) that, as a unit, the group is capable of performing care with the desired outcome (Lee &

Ko, 2010; Riggs & Knight, 1994). Lee and Ko (2012) found *collective efficacy* to be a significant group-level phenomenon appropriate to investigate to understand nursing performance. In addition, Jensen, Holten, Karpatschhof, and Albertsen (2011) found *collective efficacy* to be a moderator in the relationship between high physical workload and intention to leave in the healthcare sector. It is possible the concept of *collective efficacy*, often operationalized as teamwork climate in nursing, could be an import mediating role in influencing outcomes such as *missed nursing care* and registered nurse perceptions of *patient safety culture*. While the investigation of teamwork climate among nurses shows promise in providing additional insight to understanding the influence of relationships among registered nurses on *patient safety cultures*, to date, the specific role of *collective efficacy* in these outcomes has not been adequately investigated among the registered nurse work group. In addition, the influence of *peer-to-peer registered nurse workplace incivility* has not been observed concurrently with *collective efficacy* of the hospital unit work group.

Given the theoretical influences of hospital structures and processes on hospital outcomes, it is important to measure nurses' perceptions of *patient safety cultures* in hospitals during a time of inevitable change in the United States health care system. Data that suggest a relationship between hospital structures and suboptimal nurse perceptions of patient safety may help in the creation of a plan to improve nurse perceptions to encourage support of *patient safety cultures* in the hospital. According to the Agency for Healthcare Research and Quality (AHRQ), health care workers drawn from 1,128 hospitals across the United States indicate concern about the perception of healthcare workers about hospital *patient safety cultures*. For example, only 44% respond in the affirmative that there is non-punitive treatment in response to errors from

management (AHRQ, 2013). This sample consisted of 567,703 healthcare workers of which one-third were nurses (AHRQ, 2013).

In addition to understanding nurse perceptions of *patient safety cultures*, it is also critical to investigate the phenomenon of *missed nursing care*, or planned care not provided for in the hospital setting. Investigation of *missed nursing care* was a specific approach to understanding nurses' impact on patient outcomes; for example, nurse researchers can suggest specific nursing interventions to improve patient outcomes based on self-reported *missed nursing care* representative of nursing care that supports patient-centered outcomes such as falls (i.e. ambulation) and ventilator associated pneumonia (i.e. oral care) (Sherwood & Barnsteiner, 2012). *Missed nursing care* is a phenomenon of recent empirical investigation and is still considered underexplored in the analysis of health care quality (Kalisch, Landstrom, & Williams, 2009). Inspection of results from a large-scale prevalence study about *missed nursing care* among a sample of Midwest and Western United States hospitals suggests that *missed nursing care* is similar and frequent across the U.S.; for example, ambulation was reported as the most frequent missed component of nursing care, at 32.7% (Kalisch, Tschannen, Lee, & Friese, 2011; Kalisch & Xie, 2014). Other forms of nursing care missed include attendance at care conferences (31.8%), mouth care (25.5%), and timely administration of medications (17.6%) (Kalisch, Tschannen, Lee, & Friese, 2011; Kalisch & Xie, 2014).

Current registered nurse perceptions of frequent *missed nursing care* and unfavorable registered nurse perceptions of the hospital *patient safety culture* call into question the completeness of nursing knowledge about antecedents contributing to hospital outcomes. Such knowledge is necessary before appropriate nursing interventions can be developed for addressing and preventing potentially detrimental consequences of poor patient safety cultures and missed



nursing care. Phenomena such as *nurse manager ability, leadership, and support of nurses* (e.g. structure), *staffing and resource adequacy* (e.g. structure), *peer-to-peer registered nurse workplace incivility* (e.g. process), and *collective efficacy* of the hospital unit work group (e.g. process) may be negative forces in the work environment that threaten organizational outcomes for employees, employers, and consumers (Clark & Kenaley, 2011; Clark, Olender, Cardoni, & Kenski, 2011; Felblinger, 2009; Porto & Lauve, 2006). Therefore, this dissertation is one effort to address a gap of knowledge about how hospital structures (e.g. registered nurse perceptions of *nurse manager ability, leadership, and support of nurses* and registered nurse perceptions of *staffing and resource adequacy*) and hospital processes (e.g. *peer-to-peer registered nurse workplace incivility* and *collective efficacy* of the hospital unit work group) that influence hospital outcomes. Specific study variables are perceptions of (1) *nurse manager ability, leadership, and support of nurses*, (2) *staffing and resource adequacy*, (3) *peer-to-peer registered nurse workplace incivility*, (4) *collective efficacy*, (5) *missed nursing care*, and (6) *patient safety cultures*.

### **Purpose of Study**

This purpose of this dissertation was to describe relationships between hospital structures (i.e. registered nurse perceptions of *nurse manager ability, leadership, and support of nurses* and registered nurse perceptions of *staffing and resource adequacy*), processes (i.e. *peer-to-peer registered nurse workplace incivility* and *collective efficacy* of the hospital unit work group), and outcomes reflective of patient care quality and safety such as *missed nursing care* and registered nurse perceptions of *patient safety culture*. Investigating the mediating influence of *peer-to-peer registered nurse workplace incivility* on the relationship between hospital structures and outcomes was one crucial aim of this dissertation. The moderating influence of *collective*

*efficacy* was investigated to understand how perceptions of *collective efficacy*, whether positive or negative, altered registered nurse perceptions of hospital structures, processes, and outcomes. Study questions were guided by a middle-range model based upon Donabedian's (1980) conceptual framework specific to hospital structures, processes, and outcomes relevant to understanding patient quality assurance principles. Correlational relationships between hospital processes such as *peer-to-peer registered nurse workplace incivility* and *collective efficacy* were investigated in relation to hospital structures such as *nurse manager ability, leadership, and support of nurses* and *staffing and resource adequacy*. Hospital structures were investigated in relation to outcomes for the hospital such as *missed nursing care* and registered nurse perceptions of hospital *patient safety culture*.

### **Conceptual Framework**

Careful consideration was given to middle-range conceptual models suggested in the literature to explain the antecedents and outcomes of *peer-to-peer registered nurse workplace incivility* (Andersson & Pearson, 1999; Leiter, 2013) and the presence of *collective efficacy* of the hospital unit work group (Kanter, 1993; Leiter, 2013; Clark, Landrum, & Nguyen, 2013). Donabedian's (1980) Structure-Process-Outcomes conceptual framework was the most specific to studying the antecedents and outcomes of *peer-to-peer registered nurse workplace incivility* and *collective efficacy* of the hospital unit work group from a hospital and patient safety frame of reference; therefore, it is for this reason that this conceptual framework guided this dissertation. The Structure-Process-Outcome framework was appropriate for this dissertation because it is in direct reference to health care system quality assurance and, unlike assumptions set forth by other organization-level theorists such as Kanter (1993), this broad systems model does not propose assumptions about power gradients that may exist between the male and female gender

in business corporations (Donabedian, 2003). Inspection of conceptual and empirical literature suggests that hospital structures (e.g. material and human resources) serve as constants and influence hospital processes as performed by health care providers in the overarching hospital system (Donabedian, 1980). Hospital processes are defined as work performed for patients in health care settings and are conceptually and empirically influential to hospital outcomes related to patients (Donabedian, 1980). Processes within the hospital setting may mediate and moderate the relationship between hospital structure and hospital outcomes (Donabedian, 1980; Donabedian, 2003).

Relationships between study variables and larger nursing concepts within the broad conceptual framework of Donabedian (2003) are presented in the following sections. Hospital structures include hospital and human resources, hospital processes include professional employee relations, and hospital outcomes include employee outcomes and hospital outcomes. Further narrowing of these overarching concepts to middle-range categories, and ultimately to variables, was necessary to conduct a dissertation to test the conceptual framework. Specific human resource concepts measured will be registered nurse perceptions of *nurse manager ability, leadership, and support of nurses* and registered nurse perceptions *staffing and resource adequacy*. *Nurse manager ability, leadership, and support of nurses* and *staffing and resource adequacy* are both human resource structures that may influence staff nurse relations in a hospital environment. Professional relations measured, as part of hospital systems processes, are specific nurse work behavior phenomena such as *peer-to-peer registered nurse workplace incivility* and *collective efficacy* of the hospital unit work group. Hospital outcomes measured by the registered nurse perceptions of *patient care cultures* and employee outcomes are measured

by *missed nursing care*. Refer to Figures 1.1, 1.2, and 1.3 to see these concepts depicted in visuals.

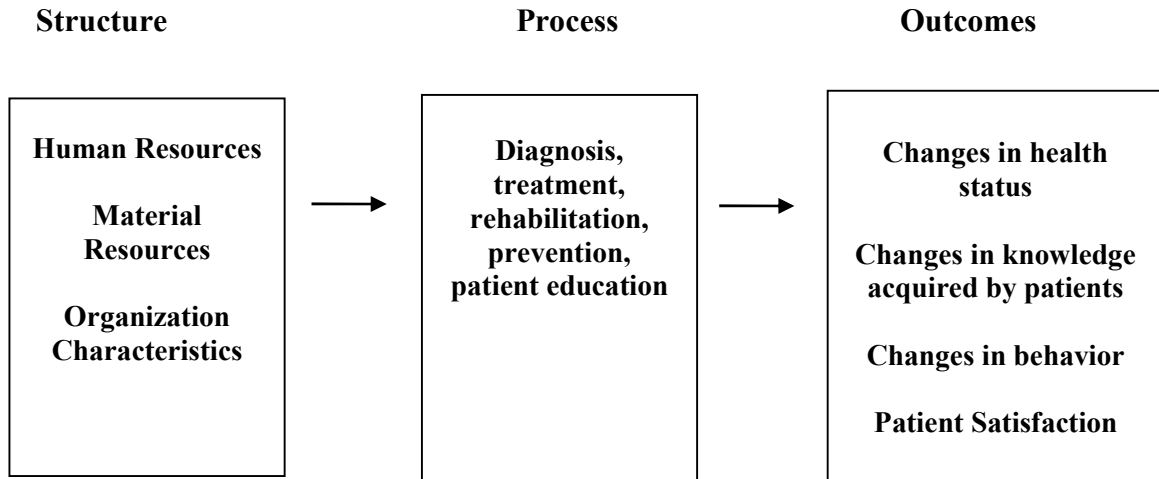


Figure 1.1. Donabedian (1980) structures—processes—outcomes conceptual framework.

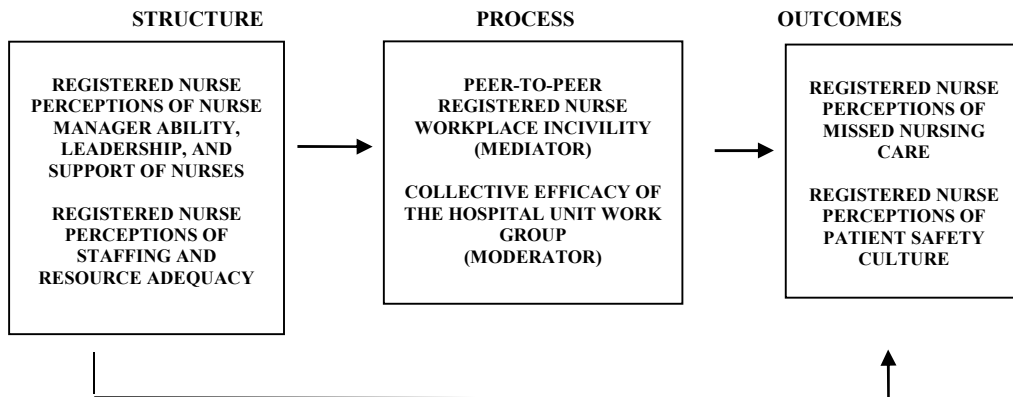


Figure 1.2. Middle-range conceptual model for empirical investigation.

# STRUCTURES & PROCESSES

# OUTCOMES

14

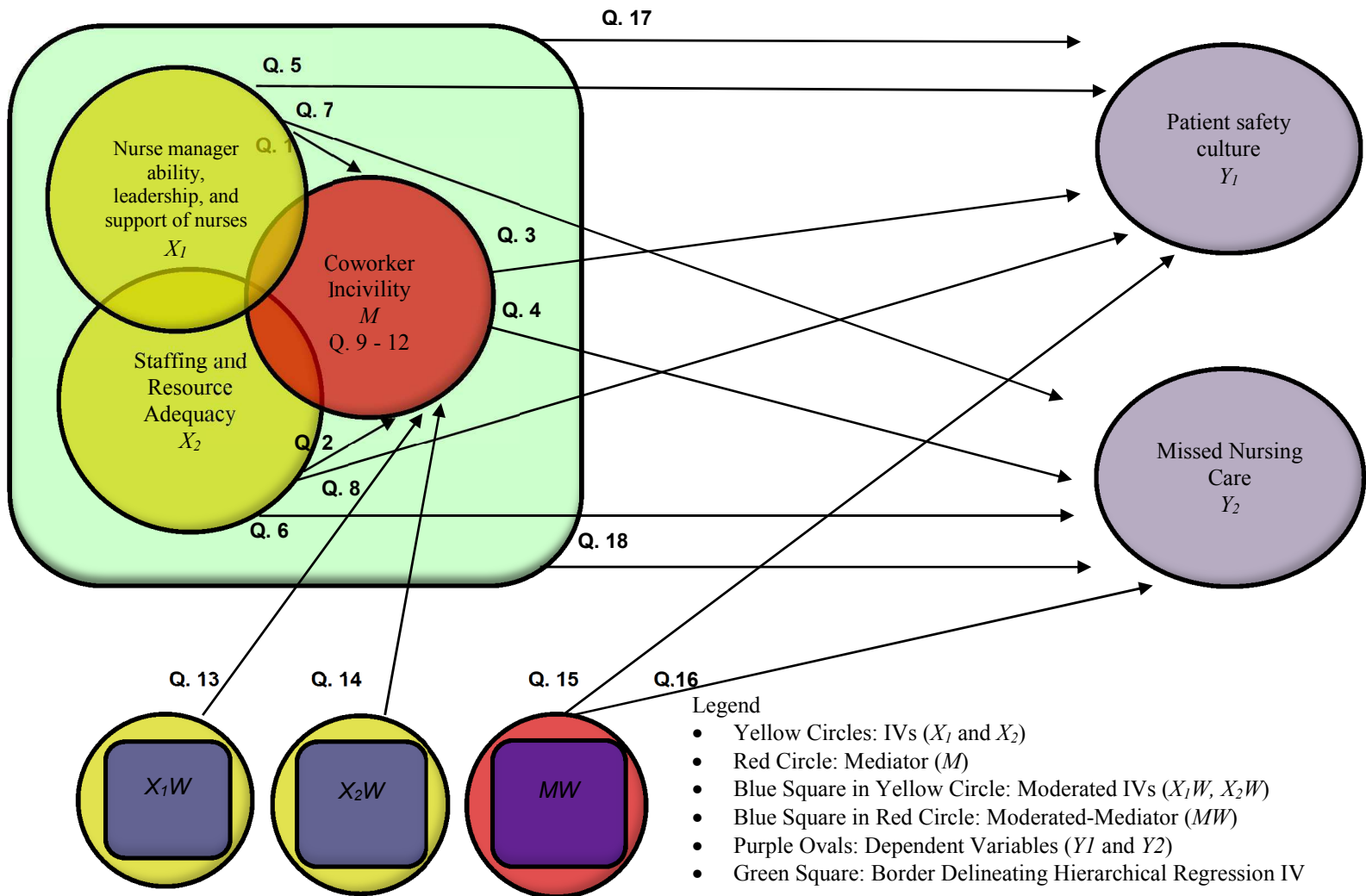


Figure 1.3. Study variables and relationships within Donabedian's (1980) conceptual framework (Q. 1-18).

Descriptions of these conceptual relationships are provided because current literature does not exist about a current integration of the proposed study variables (i.e. registered nurse perceptions of *nurse manager ability leadership and support of nurses, staffing and resource adequacy, peer-to-peer registered nurse workplace incivility, collective efficacy, missed nursing care, and of patient safety culture*) as consistent with the Donabedian (2003) Structure-Process-Outcomes conceptual framework. The overarching concepts encompassing the study variables were consistent with the classic Donabedian (1980; 2003) Structure-Process-Outcome Model. Donabedian's (1980) model in health care inquiry allows researchers to investigate the level of health care quality present in a system of health care delivery through the following: (1) hospital structures as understood through registered nurse perceptions, (2) hospital processes in the form of both dyadic employee relations and work group processes, and (3) hospital outcomes that influence patient outcomes.

## **Structures**

Donabedian (1980) envisioned "structure" as "...the relatively stable characteristics of the providers of care, of the tools and resources they have at their disposal, and of the physical and organizational settings in which they work" (p. 81). Thus, the overarching premise of hospital "structure" in the original Structure-Process-Outcome Model of Health Care Quality Assurance was in reference to stable conditions under which work is performed in a health system (Donabedian, 2003). Such conditions may include organization resources or programs, material resources, and *nurse manager ability leadership and support of nurses* as present within the health care system (Donabedian, 2003). The concept of "structure" provided an umbrella for smaller sub-concepts of interest within this dissertation such as (1) human resources in the form of registered staff nurses of equal organizational standing (2) human resources responsible for

registered nurse staff members such as nurse managers. In this dissertation, registered nurse perceptions of *nurse manager ability leadership and support of nurses* and registered nurse perceptions of *staffing and resource adequacy* will serve as independent variables. Material resources, although part of the conceptual underpinnings of the original Structure-Process-Outcome Model for Health Care Quality Assurance, were not studied in this dissertation.

### **Processes**

The definition of “process” in the Structure-Process-Outcome conceptual framework is consistent with “activities that constitute health care” as supported by practitioners (Donabedian, 2003, p. 46). Processes within health care systems include the technical process of care delivery as well as the “...set of norms [that] govern interpersonal processes” (Donabedian, 1980, p. 80). Donabedian (2003) notes that such process events that occur in the health care environment are in reference to direct patient care; however, the use of processes was used in this case to refer to the manner in which employees relate to one another an indirect influence to the quality of direct bedside patient care provided in hospitals. Such employee interactions may occur during shift report in person or by telephone. Operationalization of processes is twofold and was in reference to registered nurse work behavior as influential directly and indirectly. The first process studied was *peer-to-peer registered nurse workplace incivility* as a direct mediator. The second process, *collective efficacy*, was investigated as an indirect moderator. Definitions for *peer-to-peer registered nurse incivility* and *collective efficacy* are described and discussed as processes in the nurse work environment that influence outcomes.

*Peer-to-peer registered nurse workplace incivility* is a specific form of disruptive employee behavior that occurs among registered nurses possessing the same job description and responsibilities within a hospital organization (Clark, Landrum, & Nguyen, 2013; Leiter, 2013).

Workplace incivility is unique from other forms of workplace mistreatment in that it is characterized by an ambiguous intent to harm (Andersson & Pearson, 1999). It is reciprocal in nature among employees of the same level in the organization and creates a negative climate with which others learn ineffective behaviors and coping mechanisms for stress (Andersson & Pearson, 1999). The frequency of *peer-to-peer registered nurse workplace incivility* within hospital organizations is a measurable phenomenon of interest for nurse researchers and is discussed in previous theoretical publications as resultant from reciprocal instances of workplace incivility (Andersson & Pearson, 1999; Clark, Landrum, & Nguyen, 2013). Initial instances of workplace incivility are theoretically and empirically correlated with an increased frequency of incivility within an organizational context (Andersson & Pearson, 1999; Pearson, Andersson, & Wegner, 2001).

*Collective efficacy* was considered within this conceptual framework as another nurse group-level process, in addition to *peer-to-peer registered nurse workplace incivility*, as influential to hospital patient safety outcomes. *Collective efficacy* is a term derived from behavioral psychology in reference to a group-level belief that the group, as an entity, as the ability to succeed in reaching a given objective (Riggs & Knight, 1994). Such norms within work groups are considered indirect processes among registered nurses that may influence direct patient care outcomes.

## **Outcomes**

Donabedian (2003) maintained that “outcomes” refer to changes, either desirable or undesirable, that occur in individuals or populations resulting from health care system functioning (p. 46). The particular outcomes measured in this dissertation were registered nurse work performance through *missed nursing care* and registered nurses’ perceptions of the *patient*



*safety culture* in the hospital setting. This was not a direct measure of the patient population served by the hospital units under study; however, such a direct measure would not have been sound given the vast number of confounding variables that affect patient outcomes in the hospital setting beyond the variables proposed in this dissertation.

*Missed nursing care* was studied as a theoretical outcome resultant from frequent *peer-to-peer registered nurse workplace incivility* as well as decreased *collective efficacy*. Measurement of *missed nursing care* as a covert phenomenon different than overt quality of care phenomena (i.e. patient falls and nosocomial infections) was viewed as potentially helpful in informing an additional facet of *patient safety culture* perceptions. It is important to understand that *missed nursing care* is a not a well understood part of the quality of care continuum and thus needs isolation in order to understand its specific impact on patient outcomes to advance nursing science. *Missed nursing care* was proposed as one of two hospital outcomes that may result from hospital structures and processes (Figure 3). It is important to note that *missed nursing care* was not a patient outcome; rather, the author views missed nursing care as a hospital outcome related to employee effectiveness.

The concept of a *patient safety culture* embodies a health care environment staffed with care providers who are aware of and work to prevent conditions and factors that could cause patient harm (e.g. medication errors) (AHRQ, 2014). Concerns about patient safety in the United States health care system increased after the seminal publication, *To Err is Human*, released by the Institute of Medicine (IOM). The Agency for Health Care Research and Quality continues to support work to investigate ways to improve hospital patient safety cultures and publishes information for the use of hospitals (AHRQ, 2014). *Patient safety cultures* are theoretically a

result of interactions and processes between all individuals involved within the organization, which include employees, employers, and patients served by the organization.

### **Summary of Conceptual Framework Relationships**

The manner in which study variables were classified within the Structure-Process-Outcomes model in health care system quality assurance has been described to provide the reader with a greater understanding of the conceptual linkages that will be under investigation. Hospital structures such as *nurse manager ability leadership and support of nurses* and *staffing and resource adequacy* within hospitals may theoretically impact outcomes such as the frequency of *missed nursing care* and a hospital *patient safety culture* when mediated by additional processes such as *peer-to-peer registered nurse workplace incivility* and *collective efficacy* (Figure 3). The concept *peer-to-peer registered nurse workplace incivility* was measured and studied as a mediator. *Collective efficacy* among the registered nurse work group was studied as a moderating variable. Such differentiations in mediation and moderation can fill a gap in scientific understanding about the role of nurse processes as both direct and indirect within a theory-guided model specific to health care delivered in hospitals. According to Bennett (2000), a mediator variable is required to be present for the independent variable to impact the dependent variable (Bennett, 2000). Preacher, Rucker, and Hayes (2007) suggest investigating indirect variables (i.e. moderators) that alter a relationship between independent variables and mediator variables on outcome variables. In-depth discussion about data analysis plans will be provided in Chapter 3.

### **Overarching Research Question**

The overarching research question for this dissertation was: How do perceptions of hospital processes (i.e. *coworker incivility* and *collective efficacy*) influence perceptions of hospital structures (i.e. *nurse manager ability leadership and support of nurses* and *staffing and*

*resource adequacy*) and outcomes (i.e. *missed nursing care* and *patient safety culture*) among staff registered nurses on in-patient hospital units considering data from the previous month?

Therefore, the corresponding overarching research hypothesis was that coworker incivility has a direct mediating effect in the relationship between hospital structures and outcomes depending on the indirect moderating effect of collective efficacy perceptions. Path analysis questions are briefly stated below. For additional information about steps taken in path analysis, refer to descriptions in Chapter 3.

### **Path Analysis Questions**

1. What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *coworker incivility* ( $Y_1$ )?
2. What is the relationship between *staffing and resource adequacy* ( $X_2$ ) and *coworker incivility* ( $Y_1$ )?
3. What is the relationship between *coworker incivility* ( $X_3$ ) and *patient safety culture* ( $Y_2$ )?
4. What is the relationship between *coworker incivility* ( $X_3$ ) and *missed nursing care* ( $Y_3$ )?
5. What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *patient safety culture* ( $Y_2$ )?
6. What is the relationship between *staffing and resource adequacy* ( $X_2$ ) and *patient safety culture* ( $Y_2$ )?
7. What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *missed nursing care* ( $Y_3$ )?
8. What is the relationship between *staffing and resource adequacy* ( $X_2$ ) and *missed nursing care* ( $Y_3$ )?

9. Does *coworker incivility (M)* mediate a relationship between *nurse manager ability leadership and support of nurses (X<sub>1</sub>)* and *patient safety culture (Y<sub>1</sub>)*?
10. Does *coworker incivility (M)* mediate a relationship between *staffing and resource adequacy (X<sub>2</sub>)* and *patient safety culture (Y<sub>1</sub>)*?
11. Does *coworker incivility (M)* mediate a relationship between *nurse manager ability leadership and support of nurses (X<sub>1</sub>)* and *missed nursing care (Y<sub>2</sub>)*?
12. Does *coworker incivility (M)* mediate a relationship between *staffing and resource adequacy (X<sub>2</sub>)* and *missed nursing care (Y<sub>2</sub>)*?
13. Does *coworker incivility (M)* mediate a relationship between *nurse manager ability leadership and support of nurses (X<sub>1</sub>)* and *patient safety culture (Y<sub>1</sub>)* when moderated by *collective efficacy (W)*?
14. Does *coworker incivility (M)* mediate a relationship between *staffing and resource adequacy (X<sub>2</sub>)* and *patient safety culture (Y<sub>1</sub>)* when moderated by *collective efficacy (W)*?
15. Does *coworker incivility (M)* mediate a relationship between *nurse manager ability leadership and support of nurses (X<sub>1</sub>)* and *missed nursing care (Y<sub>2</sub>)* when moderated by *collective efficacy (W)*?
16. Does *coworker incivility (M)* mediate a relationship between *staffing and resource adequacy (X<sub>2</sub>)* and *missed nursing care (Y<sub>2</sub>)*?
17. What is the relationship between *nurse manager ability leadership and support of nurses (X<sub>1</sub>)*, *staffing and resource adequacy (X<sub>2</sub>)*, and *coworker incivility (X<sub>3</sub>)* on *patient safety culture (Y<sub>1</sub>)*?

18. What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ), *staffing and resource adequacy* ( $X_2$ ), and *coworker incivility* ( $X_3$ ) on *missed nursing care* ( $Y_2$ )?

### **Conceptual Definitions of Variables**

#### **Perceptions of Collective Efficacy**

*Collective efficacy* is defined as one's individual belief that a work group can successfully perform shared work objectives (Riggs & Knight, 1994). Perceptions of *collective efficacy* was measured with the total score on Collective Efficacy Beliefs Scale (Riggs & Knight, 1994) (Appendix A).

#### **Perceptions of Hospital Patient Safety Culture**

The *patient safety culture* within hospital environments is defined as care providers' perception of an environment that upholds standards to maintain adequate patient safety (AHRQ, 2013; AHRQ, 2014). The *patient safety culture* was measured with the total score of the Hospital Patient Survey on Patient Safety Culture (AHRQ, 2004) (Appendix A).

#### **Perceptions of Missed Nursing Care**

*Missed nursing care* is defined as any care activity omitted or significantly delayed and deemed necessary for the wellbeing of the patient (Kalisch, Landstrom, & Hinshaw, 2009). Examples of *missed nursing care* may include delayed medications, ambulation, and hygiene (Kalisch, 2006; Kalisch & Williams, 2009). The total score of the Missed Nursing Care Survey Part A (MISSCARE Part A) were used to measure the frequency of *missed nursing care* (Kalisch & Williams, 2009; Appendix A).

### **Perceptions of Peer-to-Peer Registered Nurse Workplace Incivility**

*Peer-to-peer registered nurse workplace incivility* is the occurrence of low intensity behavior exhibiting an ambiguous intent to harm another and is only demonstrated between registered nurses within a hospital of the same organizational position (Andersson & Pearson, 1999; Leiter, 2013). The total score of the Workplace Incivility Scale (WIS) was used to measure the frequency of *peer-to-peer registered nurse workplace incivility* as phenomenon that is experienced by the participant (Cortina et al., 2001; Laschinger, Leiter, Day, & Gilin, 2009; Laschinger, Leiter, Day, Gilin-Oore, & Mackinnon, 2012) (Appendix A).

### **Perceptions of Nurse manager ability leadership and support of nurses**

The registered nurse perception of *nurse manager ability leadership and support of nurses* is in reference to registered nurses' beliefs about managerial support, leadership, and management offered by the unit nurse manager (Lake, 2002). Perceptions of *nurse manager ability leadership and support of nurses*, as a measure of the nursing work environment, was measured with the total of scores from the *nurse manager ability, leadership, and support of nurses* subscale of the Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2002) (Appendix A).

### **Perceptions of Staffing and Resource Adequacy**

Registered nurse perceptions of hospital unit *staffing and resource adequacy* are defined as the perception of the quality of a work environment through logistical support such as staffing and equipment (Lake, 2002). Registered nurse perceptions of hospital unit *staffing and resource adequacy* were determined from the total score of the *staffing and resource adequacy* subscale of the PES-NWI (Lake, 2002; Appendix A).

### **Assumptions**

1. Outcomes that occur in hospital systems are dependent upon the hospital structures as well as processes that mediate the influence of hospital structure on outcomes (Donabedian, 1980; Donabedian, 2003).
2. Climates exist and shape behavior within hospital organizations (Clark, Landrum, & Nguyen, 2013).
3. Results of this study are contingent upon accurate and truthful subject reporting.

### **Delimitations**

This study was limited to the investigation of workplace incivility among registered nurse coworkers at the bedside in one hospital system. Only nurses working within hospital settings were considered for inclusion into this study. Workplace incivility among other non-nurse hospital employees was not measured or integrated into analysis. This was to ensure that the results of this study could be interpreted in relation to the clinical significance of problems in nursing such as the existence of a suboptimal patient safety culture in hospitals among registered nurses.

The design of this study included consideration of a reasonable number of variables for a feasible dissertation. The results of this study must be taken into consideration with the caveat that further studies and evidence need to be considered with the results of this study to understand the contribution of additional hospital-level problems that may contribute to negative patient safety environments such as workplace incivility directed at registered nurses from other licensed health care providers or patients and families at the bedside. Other mechanisms in organizations through leadership behaviors to promote employee effectiveness, in addition to *nurse manager ability leadership and support of nurses and staffing and resource adequacy*,

although not addressed in this dissertation, may be confounding factors to investigate in the future that may be involved in influencing patient-level outcomes within hospital organizations.

### **Significance of Study**

#### **Nursing Practice**

Results of this dissertation were intended to contribute to a growing body of knowledge to improve nurse work environments as supported by large agencies such as the Agency for Healthcare Research and Quality committed to providing guidance for patient care in hospitals (AHRQ, 2004a; AHRQ, 2004b; AHRQ, 2014). Quality assurance in United States health care delivery is uncertain in the midst of changing demographics and subsequent changes to future projected needs anticipated for nursing staff (AHRQ, 2004b). Such widespread hospital structure and process problems may contribute to inherent instability and compound the focal concern of this dissertation, which is the state of patient care safety climates in hospitals. Simple correlation and mediation as posed in questions 1 through 12 was critical to investigate to understand the influence of both hospital structures and processes in predicting patient care safety climates.

Understanding the influence of *nurse manager ability leadership and support of nurses* as a hospital structure may guide future interventions to sustain a high-quality nursing workforce through sufficient hospital support to provide safe patient care. The purpose of research questions 1 and 2 was to investigate the influence *nurse manager ability leadership and support of nurses* and *staffing and resource adequacy* on *peer-to-peer registered nurse workplace incivility*. Data to suggest a positive relationship between nurse manager ability leadership and support of nurses and *peer-to-peer registered nurse workplace incivility* might provide evidence to base nurse leadership training and guidelines within hospitals. The purpose of research questions 3 and 4 was to determine the correlation between *peer-to-peer registered nurse*



*workplace incivility* and hospital outcome indicators (i.e. *patient safety culture* and *missed nursing care*). The answers to questions 3 and 4 could potentially add support for the implementation of civility training for staff nurses in hospitals to promote safe patient care.

Correlations between hospital structures and hospital outcomes may support interventions to address sub-optimal nurse management and leadership. Such relationships between hospital structures and outcomes were investigated in questions 5 through 8. Nurse leaders in hospitals need current empirical evidence found through theory-based quantitative research to address negative influences of nursing management on missed nursing care and a negative climate of patient safety within hospitals. This evidence is critical in developing and implementing evidence-based interventions to address ineffective nurse unit leadership and the impact of this phenomenon on the climate of patient safety in hospitals.

Results from questions 9 through 18 are to inform managerial and administrative employees in hospital organizations of evidence to support future pilot interventions to address the phenomena of *peer-to-peer registered nurse workplace incivility*. It is critical to understand if evidence exists to suggest that an environment tolerant of *peer-to-peer registered nurse workplace incivility* mediates relationships between hospital structures and outcomes. This theoretical knowledge, if found empirically sound, may help guide nurse investigators and hospital administration members in designing hospital unit-based interventions to address *peer-to-peer registered nurse workplace incivility* and use a *collective efficacy* intervention to moderate the mediating effect of workplace incivility on hospital structures and outcomes.

Relationships between hospital processes and outcomes were examined with attention to the overarching hospital structure in terms of cultural norms and expectations among registered nursing staff participating in direct patient care. These relationships were explored through

mediated-moderation in questions 13 through 16 and may inform a more focused approach to address nurse work environment problems through interventions to change a negative work culture. For example, nurse managers with leadership positions in the hospital system may have more evidence to support a *collective efficacy* intervention to address disruptive behaviors such as *peer-to-peer registered nurse workplace incivility* if correlated with *missed nursing care* and *poor patient safety cultures*.

Therefore, the investigation of a mediation-moderation model was important to differentiate the role of different hospital processes (i.e. *collective efficacy* and *peer-to-peer registered nurse workplace incivility*) on hospital structures and outcomes to generate support for interventions to mitigate negative work behaviors. Although organization science-based research in the nursing discipline has expanded in the past twenty years in divergent directions about phenomena such as *peer-to-peer registered nurse workplace incivility*, *collective efficacy*, and *missed nursing care*, a lack of cohesion among these concepts in literature still remains. There is a logical basis present in guiding future research to address negative work climate environment problems that contribute to the major problem of poor patient care delivery despite this problem existing in workplace behavior literature. The lack of understanding about relationships between *coworker incivility*, *collective efficacy*, *missed nursing care*, and *patient safety cultures* is problematic for nurse leaders in organizations to be aware of the dynamics of negative *patient safety cultures*.

## **Nursing Theory**

Results from this dissertation provide current quantitative evidence about specific work environment phenomena in the health care system (i.e. *nurse manager ability leadership and support of nurses*, *staffing and resource adequacy*, *coworker incivility*, *collective efficacy*,

*patient safety culture, and missed nursing care*) within a larger, well-established systems-level conceptual framework (Donabedian, 1980). There is no other evidence to suggest that the concepts of *nurse manager ability leadership and support of nurses, staffing and resource adequacy, coworker incivility, collective efficacy, patient safety culture, and missed nursing care* are explicitly operationalized in systems-level thinking relevant to hospital based work environments. These concepts were variables within the Donabedian Structure-Process-Outcomes Model of Health Care Quality Assurance for empirical testing of research questions as guided by the conceptual framework (Donabedian, 1980).

The investigation of a framework linking related concepts in nursing science to advance knowledge about health care working conditions for nurses, with an emphasis on the impact of such factors on *patient safety cultures*, was important to provide evidence in support of theoretical development in nursing science in the hospital nurse work environment. Currently, empirical evidence is lacking relevant to relationships between antecedents and outcomes between *peer-to-peer registered nurse workplace incivility* and *collective efficacy* using the Donabedian Structure-Process-Outcomes conceptual framework. Results from this dissertation may provide a basis to establish the utility of this aforementioned conceptual framework in the science of nursing to understand the connection between nurse work environment problems.

Results of this study may provide nurse scientists with evidence to evaluate the utility of a conceptual framework established in previous systems literature. The inclusion of *missed nursing care* as a variable with which to view as an outcome to nurse behavior such as *peer-to-peer registered nurse workplace incivility* draws attention to the importance of high quality and consistent nursing care is in achieving a safe patient environment in hospitals. In addition, *missed nursing care* was included within a different conceptual framework and context specific to

hospital organization systems through the work of an investigator outside of the numerous research studies conducted by Kalisch and colleagues (Kalisch, Landstrom, & Williams, 2009; Kalisch & Lee, 2012a; Kalisch, McLaughlin, & Dabney, 2012; Kalsich, Tscannen, & Lee, 2011; Kalisch, Tschannen, & Lee, 2012).

### **Nursing Research**

Results of this study may contribute to the science of nursing by providing nursing health care researchers with quantitative data from descriptive and multivariate analyses to determine if future interventions, or additional descriptive studies, need to be conducted to further explore the impact of the organizational climate on *missed nursing care* and *patient safety cultures* in organizations across the United States. Continued nursing research to improve work conditions for registered nurses involved with bedside patient care is critical to providing registered nurses with an environment conducive to the delivery of safe and high quality patient care (Laschinger, Wong, Cummings, & Grau, 2014). This dissertation can draw increased attention to the potential for future intervention studies in addressing the need for increased *collective efficacy* and an increased organization-level climate of civility. Use of Donabedian's (1980) conceptual framework for empirical testing in the study of *peer-to-peer registered nurse workplace incivility* may generate increased interest among nursing workforce researchers already engaged in important work about nurse staffing and the impact of such factors on patient care quality in hospitals (Aiken, 2002).

Research interventions for workplace incivility as a nursing phenomenon have been conducted from a psychological lens to address organization-level tolerance of negative patient care safety climates; however, it is problematic that nurse researchers may not have sufficient evidence with which to address how another hospital process (i.e. *collective efficacy*) may

moderate the effect of *coworker incivility* on patient care safety environments (Leiter, Day, Oore, & Laschinger, 2012; Laschinger, Leiter, Day, Gilin-Oore, & Mackinnon, 2012). The trend of intervention studies correlates with calls from regulatory bodies to address the potential impact of workplace incivility (Joint Commission, 2008; Leiter, Day, Oore, & Laschinger, 2012; Laschinger, Leiter, Day, Gilin-Oore, & Mackinnon, 2012). Limited data exist outside of a single study to suggest the degree of influence that *peer-to-peer registered nurse workplace incivility* has on the *patient care culture* among a sample of bedside registered nurses in hospitals. Laschinger (2014) reported data to suggest that workplace mistreatment experienced by registered nurses in the form of workplace incivility and workplace bullying has a negative influence on the nurse perception of patient care safety.

Calls to address the problem of peer-to-peer registered nurse workplace incivility as a hospital process are devoid of explanations about the role missed nursing care has as a theoretical hospital outcome. *Missed nursing care* research evidence is growing to suggest that the concept of *missed nursing care* is a negative process in hospital settings through multiple research studies (Kalisch, Tschannen, Lee, & Friese, 2011; Kalisch, McLaughlin, & Dabney, 2012; Kalisch, Tschannen, & Lee, 2011; Kalisch, Tschannen, & Lee, 2012). Data exist to suggest that factors such as nurse staffing impact the frequency of *missed nursing care* as a process (Kalsich, Tschannen, & Lee, 2011). One gap in nursing science is the extent that *peer-to-peer registered nurse workplace incivility* has on *missed nursing care* as an outcome rather than a process. *Missed nursing care* is still not established in empirical descriptive literature as an outcome even though it is acknowledged as a detrimental process (Kalisch, 2014). Empirical evidence does not exist to establish how additional concepts emerging in organization science

research (e.g. *collective efficacy*) may contribute to the omission of nursing care and negative *patient safety cultures* (Figure 3). This study is one effort to address this gap.

Understanding relationships that exist between human resource hospital structures (i.e. *nurse manager ability leadership and support of nurses*) and *patient safety cultures*, in relation to the mediating effect of *peer-to-peer registered nurse workplace incivility* and moderating effect of *collective efficacy*, may be important for the protection of patients receiving in-hospital health care within the United States. This dissertation has significance in adding to a body of knowledge to suggest that it is critical to address patient safety cultures in hospitals, from the perspectives of hospital employees and registered nurses, that has a negative influence the quality of patient care received in the United States (Clark, Landrum, & Nguyen, 2013). *Peer-to-peer registered nurse workplace incivility* frequency, which has a theoretical role in influencing safe patient care environments, is not adequately linked in existing conceptual frameworks with the role of *missed nursing care* and *collective efficacy*. Such a lack of conceptual frameworks to investigate these phenomena limit research that may advance the generation of data to support interventions to address negative *patient safety cultures* in hospital organizations. Current empirical evidence that may be critical to effective interventions does not exist to describe how registered nurse work relationships between hospital employees such as *peer-to-peer registered nurse workplace incivility* and *collective efficacy* mediate the hospital structure in the form of nurse manager leadership behavior and hospital outcomes in the form of *missed nursing care* and *patient safety cultures*.

### **Nursing Policy**

Results of this study are to be taken into consideration with a growing body of knowledge to serve as a basis for United States policy implementation at the state and national level to

address the potential harmful impact of *peer-to-peer registered nurse workplace incivility* on *patient safety cultures*. Clinically significant results may support policy implementation to require hospital organizations to monitor, intervene, and work towards prevention of *peer-to-peer registered nurse workplace incivility* and its potential harmful impact on *patient safety cultures*. For example, further evidence to suggest that insufficient nurse staffing practices are correlated with negative outcomes could serve as support for national and state level policies in the United States to regulate safe nursing staffing practices in hospitals (Sovie & Jawad, 2002 as cited by Doran & Pringle, 2011). Therefore, investigating nurse perceptions of adequate nurse staffing is an important variable, as a hospital structure, that is influential to hospital outcomes. Questions 1 through 18 provided insight about the influence of hospital structures on hospital outcomes and may serve to support continuing policy development for nurse staffing regulations and leadership mandates to protect nurses practicing in hospitals.

Changes emergent in the United States health care system related to implications of the Patient Protection and Affordable Care Act require leaders in the nursing discipline to consider cost-effective research approaches to address the continuing concern of patient outcomes and quality of care (IOM, 2011a). Results of this quantitative descriptive nursing study may inform important revisions to existing Joint Commission guidelines to most effectively address disruptive and intimidating behavior. The Joint Commission, a regulatory body in health care, has published guidelines for hospitals to address disruptive and intimidating behaviors in the health care environment associated with negative safety and quality outcomes for patients such as medical errors, poor patient care, preventable adverse events, and increase costs of care (Joint Commission, 2008). The Joint Commission guidelines, at the time of this dissertation, are broad and may lack necessary specific information to design effective interventions. It is problematic

that basic descriptive knowledge with which to guide nurse leaders about the negative influence of *peer-to-peer registered nurse workplace incivility* on *patient safety cultures* in health care is not supported with empirical evidence (Joint Commission, 2008).

### **Nursing Education**

Results from this study can add to increasing evidence to suggest that nurse work environment problems need to be addressed to prepare nursing students for the realities of practice. Nurse educators may apply results from this study to educational practices and inform students of empirical evidence to describe workplace environment problems affecting patients and nurses. Anthony et al. (2011) conducted a qualitative study about nursing students' perceptions of workplace incivility and found that behaviors fell into themes such as "exclusionary," "hostile or rude," and "dismissive" (p. 140). It is critical for nursing students who may be experiencing workplace incivility in clinical settings to have a clear understanding of the state of workplace environment problems in the nursing profession to address the potential increasing problems of nurse retention and burnout.

Nursing educators may also have an impact on the future rates of newly licensed registered nurse burnout and retention that may be resultant from *peer-to-peer registered nurse workplace incivility*. Existing nursing research evidence suggests that newly licensed registered nurses as a group experience workplace incivility in hospital environments (Laschinger, Grau, Finegan, & Wilk, 2010; Laschinger & Grau, 2012). Research about the perceptions of newly licensed registered nurses indicates that negative nurse behaviors such as *peer-to-peer registered nurse workplace incivility* are correlated to negative nurse employee health outcomes among samples of nurses (Laschinger et al., 2010; Laschinger et al., 2012). This author's study will contribute to literature suggesting that *peer-to-peer registered nurse workplace incivility* is (1) a



problem for registered nurses in general, (2) is not solely a nursing student problem, and (3) needs to be addressed in nursing education to prepare students to be resilient in practice.

### **Chapter Summary**

This chapter provided an introduction on the research problem and significance of studying an empirical model to suggest relationships (i.e. *peer-to-peer registered nurse workplace incivility* as a mediator and *collective efficacy* as a moderator) influential to hospital structures and outcomes such as *missed nursing care* and *patient safety cultures*. Chapter two will provide an in-depth state-of-the-science review of these concepts encompassed within hospital organizations. In chapter three, the author will explain in greater detail the methodological considerations used for this study.

## Chapter Two

### Review of the Literature

The purpose of this study is to describe relationships between perceptions of *nurse manager ability leadership and support of nurses, staffing and resource adequacy, peer-to-peer registered nurse workplace incivility, collective efficacy, missed nursing care*, and hospital *patient safety culture*. This study is framed within Donabedian's (1980) conceptual framework in relation to the way hospital structures and processes are hypothesized to influence outcomes in the hospital unit setting. A review of the literature about hospital processes, structures, and outcomes to substantiate the need for a dissertation to investigate relationships within Donabedian's conceptual framework is presented in this chapter.

Before discussing the importance of hospital outcomes, such as health care quality and safety assurance, it is essential to discuss seminal organization systems paradigms that serve to guide the evolution of health care systems research. In the beginning of this chapter, major paradigms that guide organization science are compared. Critical commentary about existing major paradigms and associated theories will be provided to support the use of Donabedian's conceptual framework to structure this dissertation. Careful theory analysis and attention to the philosophical underpinnings within science is critical to determining the usefulness of theoretical frameworks in generating new knowledge. Theoretical models provide scientists with a pathway to investigate for empirical evidence (Walker & Avant, 2011). This quantitative dissertation proposal is crafted from a post-positivist worldview to investigate if observable, empirical data are a good fit for a theoretical model. Therefore, the author will conclude with an argument to support the selected post-positivist conceptual framework as described by Donabedian (1980) to investigate hospital structures, processes, and outcomes as relevant to nursing practice.

Following the theoretical, philosophical discussion about paradigms in organization science, research about nurse leadership and nurse staffing practices will be discussed as representative of hospital structures. In addition, research about hospital processes enacted through nursing, such as peer-to-peer registered nurse workplace incivility and collective efficacy, will be discussed. Research about hospital outcomes (e.g. safe patient care climates and missed nursing care) will also be discussed as relevant to how these outcomes may influence the future quality and safety of patient care.

### **Major Philosophical Paradigms of Organization Science**

#### **Constructivism**

Though this dissertation is designed from the post-positivist paradigm, it is necessary to discuss the validity of other paradigms in shaping organizational science and why such competing paradigms are not suitable for this dissertation. Paradigms are shared points of reference accepted in a scientific community for the purpose of generating knowledge (Kuhn, 1996). Thus, “constructivism” is considered a paradigm in that is accepted within the scientific community, especially in sociology, as a lens to investigate the meanings that exist in realities as perceived by study participants (Ritchie & Lewis, 2011). Proponents of constructivism believe that the organization environment is an emergent, evolving point of view and that meaning is created and understood by the participants. Constructivism leaves little room to argue for the influence of clear structures, and processes present in these structures, that contribute to outcomes. One such example of a constructivist point of view is the sociological idea of “symbolic interactionism” (Ritchie & Lewis, 2011). The major problem with a symbolic interactionism perspective is that an exchange-based paradigm is difficult to predict. Supporters of symbolic interactionism would have difficulty arguing that this perspective allows for

investigations of directional leader-follower relationships and the fundamental nature that leadership has on members of an organization. Symbolic interactionism lacks essential clarity needed to explore the theoretically predictable nature of problems within the hospital nurse work environment regarding leadership influences and outcomes for patients.

Despite these criticisms, some support the investigation of hospital processes as phenomena that may have a reciprocal relationship, though problems still exist about directional causation. For example, Andersson and Pearson (1999) developed the idea of the “spiral” of workplace incivility, which is in essence a translation of symbolic interactionism principles to explain organizational behavior. Some validity exists in the exploration of workplace incivility as an exchange process; however, constructivism does not acknowledge the structure of the organization and its critical role in shaping processes. The role of leadership is unclear in this theoretical framework and concepts contributing to workplace incivility are not well defined. This particular theoretical framework, under the paradigm of symbolic interactionism, does not provide a clear method to investigate relationships between nurses and hospital outcomes.

Some would still argue, however, that the constructivist approach is well suited to investigate how peer-to-peer registered nurse workplace incivility mediates hospital structures and outcomes. For example, Kanter (1993) used a sociological lens that has been modified and investigated in hospital organizations to understand the influence of empowerment, as a hospital structure, on workplace incivility from a nursing perspective (Almost & Laschinger, 2002; Laschinger, 1996; Laschinger & Finegan, 2005; Laschinger, Gilbert, Smith, & Leslie, 2010; Patrick & Laschinger, 2006; Smith, Andrusyszyn, & Laschinger, 2010). Kanter’s (1993) original model was first presented in 1977 to investigate if empowerment mechanisms, such as power and opportunity within the organization, influence employee outcomes. The use of a power-

gradient framework is inappropriate for this dissertation because the focus is on peer-to-peer nursing relationships and close relationships within the discipline of nursing and hospital organization (i.e. unit nurse managers and staff nurses).

Other constructivist models from the discipline of sociology suggest investigating the impacts of power gradients between people of different genders, races, and social roles (e.g. being a mother and an employee of an organization) as factors influencing counterproductive work behaviors and workplace incivility (Gonzalez-Mule et al., 2013; Kern & Grandey, 2009; Miner et al., 2014; Miner-Rubino & Cortina, 2007; and Montgomery, Kane, & Vance, 2004). DeSouza (2011) integrated a sociological perspective into higher education research through the investigation of gender differences regarding perceptions of academic contra-power harassment, incivility, and sexual harassment; however, this model was not adequately supported by data in an empirical study (DeSouza, 2011). One major limitation of these sociological models is the lack of consideration of other organizational climate factors independent from social issues that exist within the entire society. In addition, there is much less conceptual clarity within the selected sociological frameworks through the use of multiple terms without clear indication of distinctions (e.g. workplace incivility, contra-power harassment, and sexual harassment). The role of leadership is not well defined in this perspective; thus, it is too narrow to explain relationships between the work place problems in nursing that might be contributing to poor hospital outcomes.

Other power gradient theories are well represented in the literature and have been chosen to frame scientific studies. Critical social theory (Freire, 2000) from the discipline of education has been translated to nursing science, as well, in an attempt to understand the influence of social constructs on work performance and relationships. Purpora and Blegen (2012) provide a

theoretical model to suggest that horizontal violence in nursing, as a form of peer-to-peer mistreatment, has an impact on safe care and impacts care quality. This model suggests that a climate of oppression within a group or individuals serve as critical antecedent to peer-to-peer mistreatment (e.g. horizontal violence). Purpora and Blegen (2012), as well as other proponents of the impact of oppression on peer-to-peer mistreatment (Roberts, 1983; Roberts, 2009), do not acknowledge how other aspects within organizational climates may impact the perpetuation of peer-to-peer workplace mistreatment. This is problematic because the majority of literature addressing peer-to-peer registered nurse workplace incivility is categorized under the term “horizontal violence.” Disregard for the impact of other organizational climate factors on peer-to-peer registered nurse workplace incivility distinct from the antecedent of “oppression” is a significant gap within literature describing the specific phenomenon of peer-to-peer registered nurse workplace incivility. Similar to other theories based upon human interactions, problems about concrete leadership behaviors are not addressed.

### **Positivism**

At the turn of the 20<sup>th</sup> century, organizations were undergoing change due to developments in thinking spurred through research in a post-industrialized society. The major focus of improvement was on employee effectiveness and work output in a raw sense rather than satisfaction of the customer and wellbeing of the employee (Mensik, 2014). For example, Frederick Taylor (1911) used theoretical ideas involving time and motion to investigate employee effectiveness during the industrial revolution. This became known as “Taylorism” and purported that employee effectiveness could be improved by having physical equipment and supplies readily available for immediate use (Mensik, 2014). Major problems of Taylorism include the complete absence of consideration for the human element, such as customer

satisfaction and employee well being, as well as ethical leadership, to keep work group morale stable.

In the 1920s and early 1930s (1924-1932), investigators involved in a series of scientific studies, known as the “Hawthorne Studies,” found that employee effectiveness increased regardless of intervention if employees perceived management was present and making physical changes in the work environment such as lighting (Mensik, 2014). The effect of employee output improving, regardless of intervention content, is known as the observer or experimenter effect. The observer effect is cited as a threat to the external validity of a research study and could subsequently affect generalizability of results (Mensik, 2014).

In the 1960s, German sociologist Max Weber argued in favor of bureaucratic organization structure processes as a positive solution to asserting control and order among people in organizations (Mensik, 2014). Some of Weber’s seminal ideas, such as “chains of command,” still remain in place today in many organizations; however, the idea of “bureaucracies” is generally looked upon as negative, rigid, and inefficient (Mensik, 2014). Opposing theoretical ideas toward a more constructivist approach have developed, such as “radical management,” which proposes to shift from an internal to an external focus through striving for customer satisfaction, partnership, open communication, and establishing organization-level values (Denning, 2010, as cited by Mensik, 2014).

### **Post-Positivism as Cross Paradigmatic**

Scientists have discussed the possible application of complexity science (Phelan, 2001) to the study of organizations (Anderson, 1999; Phelan, 2001). Four main tenets comprise complexity theory as defined by organizational science: (1.) self-organization among sub-systems, (2.) predetermined behavior based upon an existing deterministic system, (3.)

interchange of interactions among sub-systems indicative of borderline chaos, and (4.) the adaptation of complex adaptive systems over time (Anderson, 1999). Systems are evolutionary over time based upon inputs by members of the larger health care system. The interchange of interactions among members within the system may hypothetically cause chaos, or confusion, within the larger hospital system in the form of work absenteeism, nurse attrition, and psychological distress. The assumptions of complexity theory suggest that a deterministic hospital system is offset by the unpredictable and dynamic human-driven element of horizontal violence. From this lens, hospital processes through human behaviors, such as workplace incivility, may not be premeditated; instead, such actions may occur spontaneously in the deterministic system therefore causing a form of chaos. The complexity theory lens has been tested in nursing science (Oyeleye, Hanson, O'Connor, & Dunn, 2013); however, a major critique of this attempt is the confusion regarding the suggested causal direction of variables in the study. It is difficult to measure, and replicate, positive or negative results if the investigator chooses to use complexity theory as a lens to study organizational behavior. In addition, use of complexity theory may not guide researchers to investigate the influential role of leadership and management on employee behaviors. The complexity theory is a merged perspective that states human behavior, or constructivism, in organizations is inherently harmful to a functioning, positivistic system, unless appropriate adaptation is achieved. Complexity theory crosses the paradigm barrier of constructivism and positivism; however, it is unstable in an argument for investigating correlational relationships and replicating these findings.

**Post-positivist perspectives in health care models.**

*AACN synergy model.* The AACN Synergy Model is based upon nine guiding assumptions; five of these assumptions were initially presented in 2000. These assumptions



include the following: (1) nurses must consider the developmental stage of the individual from a biological, social, and spiritual perspective, (2) the patient, family, and community inform the context for the nurse-patient relationship, (3) patient characteristics cannot be viewed in isolation, (4) nurses are described on a number of interrelated dimensions, (5) it is assumed that the ultimate goal of nursing is to either restore a patient to an optimal level of wellness or assist in achieving a peaceful death in accordance with the patient's wishes, (6) the nurse shapes the context of the situation between the patient and nurse, (7) impact areas are related and may change depending on differences regarding the nurse's experience, situation, and setting, (8) nurses strive to optimize outcomes on a broad level for patients, families, health care providers, and ultimately, the entire health care organization, and finally (9) nurses approach each situation based on his or her background, which includes prior education and experience (Hardin and Kaplow, 2005, p. 7-8). It is suggested within the model that patient characteristics and nurse characteristics be appropriately matched to ensure that patients receive appropriate care based upon care needs.

One major problem of the AACN Synergy Model is that it demonstrates a positive behavior bias specific to critical care nursing as a highly specialized area of nursing practice. There is no acknowledgement of negative workplace behaviors in the critical care nursing work environment as part of the assumptions or concepts presented. In addition, this model is not parsimonious. There are many assumptions and many variables within this model; variables include eight nurse characteristics (e.g. clinical judgment, advocacy, caring practices, collaboration, systems thinking, response to diversity, clinical inquiry, and facilitation of learning) and eight patient characteristics (e.g. resiliency, vulnerability, stability, complexity, resource availability, participation in care, participation in decision making, and predictability).

Despite these problems, the AACN Synergy Model has recently been tested in the areas of critical care nursing and general nursing (Brewer et al., 2007; Kohr, Hickey, Curley, 2012); empirical evidence has been found to support use of the AACN Synergy Model as a concrete manner to measure nursing productivity as based on patient and family indicator needs (Kohr, Hickey, Curley, 2012). Brewer et al. (2007) found the AACN Synergy Model's representation of patient characteristics as reliable and valid; exploratory factor analysis supported a 2-factor solution (i.e. intrapersonal interaction factor and interpersonal interaction factor).

***Clark and Olender's civility model.*** Clark, Olender, Cardoni, and Kenski (2011) collaborated to modify an existing conceptual model created by Clark and Davis Kenaley (2011) intended for investigation of incivility in both nursing education and practice. This model suggests that stress from nursing practice and nursing education combine at a "high-stress intersect." This high-stress intersect theoretically contributes to repeated occurrences of practice and or academic incivility, which if unmitigated, ultimately result in a climate of incivility. Conversely, the model also suggests that, if high stress is well managed, then it results in a climate of civility. This theory originates from nursing education research evidence chiefly by C. M. Clark (Clark, 2008a; Clark, 2008b). One of the most concerning limitations of this model is the absence of a theoretical relationship between an organization's climate (e.g. climate of the organization) and patient outcomes. However, it is important to acknowledge that this model was not originally created with the intention of directly addressing this problem.

Logical adequacy of this theory is questionable; for example, it is unclear how stress experienced in practice and education are overlapping phenomena in the observable world. Clark and Oldender (2011) do not explain how relationships between interactions in nursing practice and nursing education would be operationalized into measurable variables; therefore, it is unclear

how generalizable the theory is to nursing education or practice. It is therefore unclear how Clark and Olender's (2011) model applies to registered nurses who function within both education and practice environments. Parties engaging in workplace incivility (e.g. peer-to-peer workplace incivility or manager-to-nurse workplace incivility) are not explicitly stated. Clark and Olender (2011) do, however, make reference to the role of management or leadership in intervening to decrease workplace incivility and ultimately contribute to a climate of civility. Scientists using this model may operationalize the concepts of management and leadership as civility resources. The model suggests that a climate of stress in the organizations of nursing education and practice may impact the overall organizational climate and contribute to a "climate of incivility." This theoretical framework suggests many relationships; therefore, it is difficult to state whether it is parsimonious and would require many variables for empirical testing. Oyeleye et al. (2013) combined Clark and Olender's (2011) framework with a complexity science lens; however, the variables investigated do not reflect the concepts presented in the original framework (Clark & Olender, 2011). For example, the core variable "workplace incivility" is not included as a variable within the study (Oyeleye et al., 2013) despite being suggested in the original model (Clark & Oldender, 2011).

***Donabedian's (1980) Conceptual Framework.*** Donabedian's (1980) conceptual framework of health care quality assurance provides a post-positivist approach with which to view the hospital structures and processes that influence patient outcomes. It is broad enough to explain relationships between hospital structures such as labor and material resources and behavior-related, or constructed, interactions between hospital employees (e.g. registered nurses). This post-positivist conceptual framework is most appropriate to investigate the influencing role of organization structures and constructed interactions between registered nurses

on hospital outcomes. Donabedian's (1980) conceptual framework is broader than the AACN model and does not have limiting assumptions applicable to only nursing practice; it does not have a positive or negative behavior biases that may limit interpretations about empirical data collected.

## **Hospital Structures**

**Nurse Leadership and Nurse manager ability leadership and support of nurses.** The Joint Commission calls for hospitals to adopt leadership standards to address and mitigate conflict in the work environment (Joint Commission, 2008; Joint Commission, 2009 as cited by Scott & Gerardi, 2011; Rosenstein & O'Daniel, 2008). Authentic leadership is an appropriate method for nurse managers in hospital units because the respectful representation of authentic leadership promotes an open communication style that might help mitigate the spiral of workplace incivility (Andersson & Pearson, 1999; Northouse, 2013). Such an authentic leadership method requires genuine, open communication indicating a high degree of emotional intelligence to promote positive patient outcomes (AACN, 2005). Hutchinson et al. (2012) support the use of leadership methods with an emphasis on emotional intelligence to mitigate workplace bullying experienced by registered nurses in the workplace. Other leadership styles have been employed to address problems in the nurse work environment, such as transactional leadership, congruent leadership, and resonant leadership (Hutchinson et al., 2012); however, authentic leadership is most appropriate to mitigate the negative impact of workplace bullying, as a specific form of targeted, repeated workplace violence, on nurse outcomes (i.e. job satisfaction and emotional exhaustion) associated with registered nurse workplace (Laschinger, Wong, & Grau, 2012).

The theoretical foundations of leadership have evolved considerably from the early thinking of leaders as “born” with certain traits. Mentors create leaders by teaching potential leaders replicable skills and guiding others through situations and experiences that inform decision-making (Northouse, 2013). The perception of leadership qualities as contingent upon major inborn “traits” overlooks the notion that leaders make decisions based upon the situation; in addition, the “trait” perspective results in a “highly subjective interpretation of the most important leadership traits” (Northouse, 2013). There are numerous perspectives to define the meaning of leadership in organizations. From these perspectives, research has emerged about authentic leadership, transformational leadership, servant leadership, skill-based leadership, team leadership, and leader-member exchange (Northouse, 2013). Scientific findings about authentic leadership in nursing give promise to continuing to investigate the influence of authentic leadership on registered nurses serving as bedside providers of care in hospitals.

**Research.** Authentic leadership is useful for health care systems research from the nursing perspective in particular because investigating the influence of authentic leadership has the potential to provide new information about how to intervene in work environments with a high frequency of coworker incivility. Wong and Giallonardo (2013) found data to suggest that the presence of perceived authentic leadership from a nursing manager was associated with a lower frequency of staff nurse perceptions of adverse patient outcomes. Authentic leadership is endorsed by the AACN as a strategy for creating a healthy work environment for nurses (AACN, 2005). Walumbwa et al. (2008) found authentic leadership to be positively associated with outcomes such as organizational citizenship, organizational commitment, and satisfaction with supervisor and performance. In order to measure authentic leadership, Walumbwa et al. (2008) developed a 16-item Authentic Leadership Questionnaire (ALQ) that has been found to be valid

in four dimensions: (1) self-awareness, (2) internalized moral perspective, (3) balanced processing, and (4) relational transparency.

**Summary.** In conclusion, nurse manager ability leadership and support of nurses is the most appropriate concept to investigate due to the critical need to provide clear, clinical direction about management through nurse leadership on patient care units. Authentic leadership, although a concept found as empirical, will not be the sole facet to view nurse manager ability leadership and support of nurses as a phenomenon for the purpose of this dissertation. It is most defensible, for the purpose of this dissertation, to measure nurse manager ability leadership and support of nurses as a concept that may support the use of authentic leadership as a facet of nurse manager ability leadership and support of nurses.

#### **Nurse Working Conditions.**

**Research.** Repeated investigations to create and sustain better work environments for employees across disciplines are present in the literature (Laschinger, Leiter, Day, Gilin Oore, & Mackinnon, 2012; Leiter, Laschinger, Day, & Oore, 2011; Leiter, Day, Oore, & Laschinger, 2012). The National Center of Organization Development within the United States Veterans Health Administration (VHA) developed a model called, “Civility, Respect, and Engagement in the Workplace” (CREW), to actively intervene in workplaces to decrease workplace incivility (Leiter, 2013). This model conveys intent to address workplace incivility in the organizational context while still acknowledging the individual employee impact on workplace incivility (Leiter, 2013). Organizational support for civility, an intervention proposed by the CREW model, suggests that it is essential to address lack of organizational support as an antecedent to workplace incivility (Leiter, 2013). It is described as a “customized, initiative-based approach” to address workplace incivility in organizations since it is amenable to modification depending

on the organization type and specific employee characteristics within the organization (Leiter, 2013, p. 58). Research scientists in the disciplines of nursing and psychology have tested the CREW model in empirical studies. Inspection of data supports the intervention resulted in reduced employee sick leave and turnover (Laschinger, Leiter, Day, Gilin Oore, & Mackinnon, 2012; Leiter, 2011; Leiter, Day, Oore, & Laschinger, 2012).

Other investigations from disciplines outside of nursing substantiate problems inherent among working conditions for employees of organizations. Browning (2008) conducted a qualitative analysis of interview data collected from 35 service managers and front-line employees as well as 22 management students and staff from a School of Business at a New Zealand university. Browning (2008) also included 133 examples of employee deviant behavior as reported by customers. Their data suggest that the following cultural and structural organizational factors contribute to front-line employee deviant behavior: (1) no explicit service values, (2) deviant management behavior, (3) insufficient organizational support, (4) inflexible customer policies, (5) ineffective human resource management system, and (6) no authority to make decisions (Browning, 2008).

Data from qualitative research across disciplines suggest that characteristics of the organizational climate are potential antecedents to workplace incivility and similar concepts. Clark, Olender, Cardoni, and Kenski (2011) conducted a qualitative content analysis of narrative data from 68 nurse executives and 106 nurse managers to investigate workplace incivility antecedents in nursing practice and education. Lack of adequate resources (human and financial) was a major theme. In addition, “highly stressed work environments” and behaviors indicating a climate of incivility comprised a major theme.

Qualitative data from studies exploring similar concepts within the construct of workplace mistreatment (e.g. workplace bullying) also suggest that factors within the organization's climate serve as antecedents of workplace bullying. Workplace bullying has been defined as psychological abuse from an instigator to a target that is seemingly systematic, persistent, and continually repeated over time (Georgakopoulos et al., 2011). In a qualitative study ( $N=112$ ), Georgakopoulos, Wilkin, and Kent (2011) found data to suggest that elements of the organizational climate, such as management lack of understanding and dismissal of workplace bullying, are antecedents to workplace bullying. The major category of "organizational climate/environment" as an antecedent to workplace bullying included the following subcategories: (1) organizational hierarchy, (2) organizational performance, (3) differences in values and expectations, (4) poor management, and (5) external environment constraints. Similarly, Hutchinson et al. (2006) conducted a qualitative study among 26 nurses from two health care organizations and found data to suggest that informal political climate with the organization is a possible antecedent to workplace bullying. In this study, this informal political climate is comprised of "informal organization networks" in which employees engaged in predatory behavior characteristic of workplace bullying occurring repeatedly and over time (Hutchinson et al., 2006).

**Summary.** The investigation of nurse working conditions has been approached from numerous angles, as previously discussed, such as organizational support, organizational constraints, informal political climates, and working conditions. In this dissertation, the perceptions of nurse staffing will be measured through "working conditions" as an operationalization of nurse staffing perceptions based upon an analysis of the Safety Attitudes Questionnaire.



## **Hospital Processes**

### **Workplace incivility.**

*Theoretical literature.* Andersson and Pearson (1999) published a broad conceptual definition of workplace incivility as a organization-level problem and proposed a theoretical framework to describe its potential antecedents and outcomes. Workplace incivility is defined as “low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms and respect” (Andersson & Pearson, 1999, p. 457). Incivility, according to Andersson and Pearson (1999), overlaps with the concept of deviance, aggression, and violence, and antisocial behavior; however, it is differentiated from these by it occurs at a low-intensity and it is often difficult to discern if it is intentional. Organization climate factors (e.g. “climate of informality”) contribute to the theoretical spiral of workplace incivility that has the potential to escalate into overt violence if not addressed. Since its publication, this seminal conceptual and theoretical article by Andersson and Pearson (1999) has been cited in 604 publications according to ABI/INFORM Complete as of this date. Other distinct forms of workplace mistreatment have also been defined through conceptual analysis such as horizontal violence, lateral violence, workplace violence, and workplace bullying; however, some researchers use the terms comparatively in studies. Laschinger, Wong, Regan, Young-Ritchie, and Bushell (2013), for example, studied workplace incivility and bullying as similar but distinct concepts to compare which phenomenon was more harmful among nurses in organizations.

Since the time of Andersson and Pearson’s publication in 1999, much literature has been published to substantiate that workplace incivility is ambiguous (Caza & Cortina, 2007; Cortina & Magley, 2009; Felblinger, 2009; Holloway & Kusy, 2011; Hutton, 2006; Lim, Cortina, & Magley, 2008; Sakurai & Jex, 2012; Turdel & Reio, 2011), subtle (Felblinger, 2009; King et al.,

2011; Sakurai & Jex, 2012), overlooked (Montgomery et al., 2004; Swinney et al., 2010; Trudel & Reio, 2011), pervasive (Phillips & Smith, 2003; Phillips, 2006), and indicative of norm violation (Feldmann, 2001; King et al., 2011; Montgomery et al., 2004). Scientists within the area of workplace incivility argue that these attributes are key to defining and investigating the phenomenon of workplace incivility.

Four major theoretical antecedents to workplace incivility include the presence of a sender and recipient (Clark & Carnosso, 2008; Clark, 2008c), specific instigator traits characteristic of those described as temperamental, rebellious, easily offended, rude to peers, and disrespectful to subordinates (Andersson & Pearson, 1999), the lack of team-based health care approaches (Porto & Lauve, 2006), and large classroom settings (Alkandari, 2011). In addition to characteristics and antecedents, theoretical literature has also provided much information about the consequences of workplace incivility in the disciplines of nursing, psychology, education, and sociology. Consequences within the hospital organization include turnover intent (Felblinger, 2009; Giumetti et al., 2012; Laschinger et al., 2009; Leiter et al., 2010; Leiter et al., 2011; Wilson et al., 2011), absenteeism (Giumetti et al., 2012; Wilson et al., 2011), patient safety concerns (Clark & Davis Kenaley, 2011; Clark, Olender, Cardoni, & Kenski, 2011; Felblinger, 2009; Porto & Lauve, 2006), mental health strain (Clark et al., 2010; Lim, Cortina, & Magley, 2008; Gilin Oore et al., 2010; Sliter, Jex, & McInerney 2010; Wilson et al, 2011), physical health strain (Lim, Cortina, & Magley, 2008), and burnout (Giumetti et al., 2012). Consequences of workplace incivility in nursing education as a work environment include decreased learning (Clark & Springer, 2010; Clark & Davis Kenaley, 2011; Feldmann, 2001), faculty attrition (Luparell, 2007), student dissatisfaction (Marchiondo et al., 2010), and potential transference to bedside care (Supplee et al., 2008).

**Research.** Several measurement scales exist to investigate the concept of workplace incivility (Clark, Landrum, & Nguyen, 2013; Cortina et al. 2001; Coombs & Holladay, 2004; Einarsen, Hoel, & Notelaers, 2009). There are, however, notable flaws to address in relation to conceptual ambiguity within some of these scales. Cortina et al. (2001) developed a seven-item Workplace Incivility Scale to measure the frequency of workplace incivility experiences from supervisors and coworkers in the previous five years. One notable limitation is that this scale considers supervisor and coworker workplace incivility as one unit rather than measuring the sources of workplace incivility as separate phenomena. Cortina et al. (2001) ask questions of participants within this instrument regarding the frequency of rude verbal remarks, attempts to invade another person's privacy, and rude non-verbal behaviors (e.g. ignoring or excluding someone from professional camaraderie). Scientists investigating workplace incivility have used this scale within the disciplines of nursing, psychology and organizational science (Cortina & Magley, 2009; Griffin, 2010; Haines et al., 2007). Other notable measurement scales include The Workplace Aggression Tolerance Questionnaire (WATQ) (Coombs & Holladay, 2004), The Uncivil Workplace Behavior Questionnaire (UWBC) (Martin & Hine, 2005), and the Negative Acts Questionnaire-Revised (NAQ-R) (Einarsen, Hoel, & Notelaers, 2009). There is a lack of agreement and consistency among these measurement scales in regard to specific forms of workplace incivility (e.g. peer-to-peer workplace incivility) and which concept is being measured.

Clark, Landrum, and Nguyen (2013) developed the Organizational Civility Scale to provide scientists investigating the impact organizations have on employees. Scientists can use the OCS to collect self-reported data about the frequency of peer-to-peer workplace incivility, overall stress and coping, organizational climate, civility resources (existence and importance),

and employee satisfaction. One limitation of the OCS is that it is designed solely for investigating phenomena at the organization level rather than the individual level.

Cortina and Magley (2009) used the workplace incivility scale (Cortina et al., 2001) to conduct a large quantitative study from three separate sampling pools including university employees ( $n = 1,711$ ), attorneys ( $n = 4,605$ ) and employees within a federal judicial circuit ( $n = 1,167$ ) to investigate how those experiencing workplace incivility appraise and cope with this phenomenon. Data suggest that employees appraised uncivil encounters more negatively when the incivility is more varied ( $\beta = .28, p < .001$ ), the incivility is more frequent ( $\beta = .23, p < .001$ ), and the instigator has more formal power in the organization ( $\beta = .26, p < .001$ ). Coping profiles for employees experiencing workplace incivility were categorized into five clusters: (1) support seekers, (2) detachers, (3) minimizers, (4) prosocial conflict avoiders, and (5) assertive conflict avoiders (Cortina & Magley, 2009). Cortina and Magley (2009) recommend organizations, as an implication of these study findings, provide more support mechanisms to address workplace incivility so as to prevent negative outcomes on employee health.

Griffin (2010), in a large quantitative study ( $N = 34,209$ ), collected data from 179 organizations across Australia and New Zealand to measure the impact of organizational-level incivility, interactional justice climate, and individual experience of incivility on the intention to remain in the organization. Data from this study suggest that interactional justice may mediate the relationship between organizational incivility and intention to remain. Interactional justice is a concept in reference to support mechanisms available in the organization to support employees as valued members to be treated with respect (Griffin, 2010).

Studies have been conducted to indicate an influence of workplace incivility between employees (e.g. workplace incivility, workplace bullying, or horizontal violence) in relation to

patient outcomes. Haines, Stringer, and Duku (2007) conducted a study among 87 operating room nurses in British Columbia and Ontario to investigate nurse perception of workplace safety climate and incivility. Data suggested that 82% had a negative perception of safety climate and 49% reported managerial incivility. There was a correlation between a decreased safety climate and the communication/conflict (Haines et al., 2007). One significant limitation of this study is that Haines et al. (2007) do not investigate organizational antecedents to the problems of workplace incivility and a poor safety climate within the operating room.

Laschinger, Wong, Regan, Young, and Ritchie (2013) found data among 272 new graduate nurses to suggest that three different forms of workplace civility (e.g. coworker-to-coworker incivility, physician-nurse incivility, and supervisor-staff nurse incivility) are all related to poor mental health outcomes. Similar to Cortina & Magley (2009), Laschinger et al. (2013) suggest that the ability for employees to cope (e.g. resiliency) may be protective for employees experiencing workplace incivility.

One considerable methodological challenge, also related to the conceptual confusion within the broader workplace mistreatment literature, is deciding upon a measurement scale that addresses the correct concept and is also developed in a way that is appropriate to use within a study on a specific sample. This challenge is addressed in this study by using the Workplace Incivility Scale (Cortina et al., 2001) as revised by Laschinger, Leiter, Day, and Gilin Oore (2009). This scale is most appropriate because it measures the specific concept of workplace incivility and will allow for collection of data about peer-to-peer workplace incivility.

Clark (2009) defined the broad concept of “incivility” as being classified as behaviors that, although begin as low-intensity, have the potential to become more threatening if left unaddressed (Clark, 2009). In the years following 2009, Clark (2013a) demonstrated through

publications that she views workplace incivility as a specific concern within, and perpetuated by, organizational factors in both nursing practice and education (Clark, 2013a; Clark, Landrum, & Nguyen, 2013; Clark, Olender, Cardoni, & Kenski, 2011). This is apparent after reviewing her numerous publications, which feature an emphasis on the influence organizational factors have on workplace incivility (Clark, 2013; Clark, Landrum, & Nguyen, 2013; Clark & Olender, 2011).

The temporal issue of determining the timeframe for which participants must report experiencing workplace incivility is also problematic when designing research to study the phenomenon of workplace incivility. Cortina et al. (2001) measure instances of workplace incivility over a 5-year span; however, this data is only relevant if the other variables within a study are measured over an appropriate time span. It is logical to consider that people may have different coping skills, and different tolerance levels for psychological harm, making it difficult to determine an appropriate time frame to consider when surveying a sample on the impact workplace incivility may have on performance and intention to leave the organization. Some measurement scales are not clear on the timeframe (Clark, Landrum, & Nguyen, 2013); this requires the researcher to explicitly define a time line for reporting workplace incivility as part of the study design and guidelines for participants.

One primary conceptual challenge researchers and scholars have in investigating the concept of workplace incivility is to determine how to continue to define the concept in consideration of existing knowledge across discipline. Many scientists approach the concept of workplace incivility with a specific lens, such as a psychological or sociological lens, which affects the way to define and integrate “workplace incivility” into theoretical models (Leiter, Laschinger, Day, & Oore, 2011; Leiter, Day, Oore, & Laschinger, 2012; Miner-Rubino &

Cortina, 2007; Miner, Pesonen, Smittick, Seigel, & Clark, 2014; Montgomery, Kane, & Vance, 2004). Disagreement on the definition of workplace incivility as related to other distinctions in the workplace mistreatment literature is problematic because it is important to maintain consistency and conceptual clarity in a substantive area of knowledge to generate meaningful study results that other researchers can synthesize and consider for determining the direction for further investigation. Over a decade ago, Cortina et al. (2001) discussed the problem of conceptual confusion as part of the challenges of studying the concept of workplace incivility. For example, Cortina et al. (2001) acknowledged that a review of published literature prior to 2001 discussing phenomena such as “injustice, harassment, and bullying” demonstrated overlap with the concept of workplace incivility; however, workplace incivility was not considered to be synonymous with other forms of workplace violence such as “workplace bullying.” Several years later, investigators of workplace incivility are still actively debating about the classification of workplace behaviors in journal articles published to demonstrate points and counterpoints to conceptual issues in organizational behavior research (Herschovis, 2011; Tepper & Henley, 2011; Spector, 2011).

Scientists have dealt with the conceptual disagreement and confusion of workplace mistreatment distinctions by adhering to a conceptual orientation of either “workplace violence,” “workplace incivility,” “workplace bullying,” or another distinction within the body of workplace mistreatment literature throughout a program of research to investigate the impact of these concepts on outcomes at the individual and organizational level. For example, H. K. S. Laschinger, M. Hutchinson, and C. M. Clark have created distinct programs of research in the discipline of nursing with different conceptual views of what constitutes workplace mistreatment and how to define and investigate the problem of workplace mistreatment (Clark, 2008a; Clark,

2008b, Clark, 2013a; Clark, 2013b; Clark & Kenaley, 2011; Clark, Olender, Cardoni, & Kenski, 2011; Hutchinson & Hurley, 2012; Hutchinson, Jackson, Wilkes, & Vickers, 2008; Hutchinson, Wilkes, Jackson, & Vickers, 2010; Laschinger, Finegan, & Wilk, 2009a; Laschinger, Finegan, & Wilk, 2009b; Laschinger, Finegan, & Wilk, 2011; Laschinger, Grau, Finegan, & Wilk, 2010; Laschinger, Leiter, Day, & Gilin, 2009; Laschinger, Wong, Regan, Young-Ritchie, & Bushell, 2013). Further isolation and disagreement on the conceptual problems within workplace mistreatment as a large construct creates pockets of knowledge that may be relevant to consider, yet easily overlooked, due to being unrecognized by investigators due to obscure, underused, and unfamiliar terminology to reference concepts within workplace mistreatment science. It is unclear if scientists are attempting to advance science, or individual programs of research, based upon the divisions existing throughout the workplace mistreatment literature.

**Summary.** The challenge of determining the most appropriate way to investigate workplace incivility, and advance science, is formidable due to the continuing presence of conceptual disagreement (Herschovis, 2011; Tepper & Henley, 2011; Spector, 2011). Disagreement among researchers regarding how to consolidate concepts within workplace mistreatment seems to threaten the science of workplace incivility and prevent forward progress in investigating the consequences of specific peer-to-peer registered nurse workplace incivility (Herschovis, 2011; Tepper & Henley, 2011; Spector, 2011). However, it is an unrealistic expectation that agreement will be reached in the near future among scientists given the rapid development in this area. Publications from researchers across the world, in reference to differing interpretations of workplace mistreatment, have proliferated in the past ten years and continue to appear in the literature. It is important to advance the specific science of peer-to-peer registered nurse workplace incivility to investigate the potential influence it might have on



clinical patient outcomes in hospitals. Researchers investigating workplace incivility need to advance this science in terms of its clinical significance, in addition to philosophical significance, for it to be a relevant concept to investigate in hospitals. Therefore, the author of this paper plans to consider peer-to-peer registered nurse workplace incivility as a distinct form of workplace incivility. The plan is to propose a study on the impact of peer-to-peer registered nurse workplace incivility to move forward with contributing a better understanding to the impact of this phenomenon on outcomes for patients receiving care in health care organizations.

**Collective efficacy.**

**Research.** Collective efficacy is often represented through the concept of teamwork climate in nursing research investigations about missed nursing care. For example, the occurrence of missed nursing care has been studied in relation to how perceptions of registered nurses and nursing assistants differ and how these perceptions affect teamwork and has implications on how we conceptualize the outcomes of missed nursing care. Kalisch (2009) found that the difference between reports of missed nursing care among registered nurses and nursing assistants in clinical environments indicates a lack of teamwork such as closed-loop communication, leadership, team orientation, trust, and shared mental models. This empirical investigation has provided insight into teamwork as being a hospital structure that correlates with missed nursing care processes as proposed by Kalisch (2009). In addition, Kalisch and Lee (2010) found data to suggest that higher teamwork scores were correlated with lower instances of reported missed nursing care.

**Summary.** The concept of “teamwork climate” differs depending upon the specific group sampled and target population of interest. Clearly, registered nurses and nursing assistants have different teamwork climate expectations that affect perceptions. It will be important to control

for sampling of registered nurses only, as distinct from nurses of other licensure levels (i.e. licensed practical nurses), in order to have an accurate measurement of the phenomenon of “teamwork climate” among the registered nurse work group.

## **Hospital Outcomes**

### **Missed nursing care.**

*Research.* Although related concepts to missed nursing care have been present in the literature (e.g. rationed nursing care and unfinished care) (Schubert et al., 2008; Sochalski, 2004), missed nursing care was empirically investigated by Kalisch (2006) in a qualitative study including 107 registered nurses, 15 licensed practical nurses, and 51 nursing assistants working in medical-surgical patient care units. The nine elements of missed nursing care included (1) ambulation, (2) turning, (3) delayed or missed feedings, (4) patient teaching, (5) discharge planning, (6) emotional support, (7) hygiene, (8) intake and output documentation, and (9) surveillance. Seven themes to explain missed nursing care included (1) too few staff members; (2) time required for a nursing intervention, (3) poor use of existing staff resources, (4) lack of willingness to perform duties not believed to be under one’s job description, (5) ineffective delegation, (6) habit, and (7) denial (Kalisch, 2006).

Kalisch, Landstrom, and Hinshaw (2009) solidified the importance of the missed nursing care concept within the nursing literature by conducting a concept analysis on missed nursing care after studying its occurrences qualitatively in the clinical environment. As a result of this concept analysis, she developed the missed nursing care model from her study of the antecedents and outcomes delineating missed nursing care. This model has been used in numerous recent studies regarding missed nursing care (Kalisch, Tschannen, & Lee, 2011; Kalisch & Lee, 2012a; Tschannen, Kalisch, & Lee, 2010; Kalisch & Lee, 2010; Friese, Kalisch, & Lee, 2013). Kalisch

(2010) has also published her personal experiences as a hospital patient aware of the implications of missed nursing care. In this anecdotal account, Kalisch (2010) discussed her personal difficulty in regaining strength post being non-ambulatory as a hospital patient due to missed nursing care.

Kalisch and colleagues continued to build upon a program of research on missed nursing care by conducting multiple research studies to establish knowledge regarding antecedents and outcomes of this phenomenon. Kalisch, Landstrom and Williams (2009) developed and tested the MISSCARE Survey, which represents the only known quantitative measurement tool to quantify instances of missed nursing care. Using the MISSCARE Survey, Kalisch, Landstrom, and Williams (2009) found the following nursing responsibilities most frequently missed among a sample of 459 nurses in 3 hospitals in Michigan: (1) ambulation (84%), (2) medication effectiveness assessment (83%), (3) turning (82%), (4) mouth care (82%), (5) patient teaching (80%), and (6) the timeliness of administration of as needed medications (80%). Reasons for this missed care, in this study, were found to be labor resources (85%), material resources (56%) and communication (38%). This measurement tool was found to be valid within the sample populations in which it was tested. Since its initial development, the MISSCARE Survey has been translated to Icelandic (Bragadottir, Kalisch, Smaradottir, & Jonsdottir, 2014), Turkish (Kalisch, Terzioglu, & Duygulu, 2012) and Portuguese (Siqueira, Caliri, Kalisch & Dantas, 2013). Wegmann (2011) compared the self-report measurement tool (e.g. MISSCARE Survey) and medical record audits and found no significant difference in these two measurement methods.

Kalisch and Lee (2012b) compared Magnet and non-Magnet status, as part of a hospital's structure, to understand if there is a difference regarding missed nursing care within hospitals

with different care philosophies. In this descriptive quantitative study, Kalisch and Lee (2012b) demonstrated a significant difference in missed nursing care depending upon Magnet status; therefore, Kalisch and Lee (2012b) consider these findings evidence to promote hospitals to strive toward achieving Magnet status.

Unit and staff characteristics are described within The Missed Nursing Care Model as being the case mix index, nurse staffing characteristics such as skill mix, number of patients cared for, use of overtime, hours per patient day, and staff credentials (e.g. role, education, and experience) (Friese, Kalisch, & Lee, 2013). Kalisch, Tschannen, Lee, and Friese (2011) reported unit characteristics such as the unit type, shift worked, and patient load for each nurse within hospitals as associated with missed nursing care. Relative to unit characteristics, Kalisch, Tschannen, Lee, and Friese (2011) found that night shift workers reported less missed care than day shift workers. In addition, nursing staff caring for more patients in the previous shift reported more missed care in comparison to nursing staff who perceived their staffing as appropriate (Kalisch, Tschannen, Lee, & Friese, 2011). Unit type was not found to be significantly associated with missed nursing care within one research study (Kalisch, Tschannen, Lee, & Friese, 2011). However, in another study, Friese, Kalisch, and Lee (2013) found evidence to suggest that oncology units had significantly lower rates of missed nursing care as compared to non-oncology units; however, there is not a large body of literature to support that differences in unit type significantly contribute to missed nursing care.

Case mix index, another example of a unit characteristic that may have an effect on missed nursing care (Friese, Kalisch, & Lee, 2013), has been used as a control in quantitative nursing research as a variable that may be related to the occurrence of missed nursing care. Friese, Kalisch, & Lee (2013) found that controlling for case mix index, or nurse staff

characteristics (i.e. age, job title, education, years of experience, and overtime hours) generated evidence to suggest a significant difference in total unit staffing practices on missed nursing care. Kalisch, Tschannen, Lee, and Friese (2011) also studied the effect of staff characteristics (e.g. skill mix, gender, age, job title) on missed nursing care and found that staff members who were female, older, RNs, or more experienced reported more instances of missed nursing care. Education level was not significantly associated with the occurrences of missed nursing care (Kalisch, Tschannen, Lee, & Friese, 2011). Multiple studies have suggested that a tendency toward absenteeism is associated with missed nursing care (Kalisch, Tschannen, Lee, & Friese, 2011; Kalisch, Tschannen, & Lee, 2011).

Kalisch and Lee (2010) found that unit nurse staff members who reported a higher perception of teamwork also reported a lower frequency of missed nursing care. Kalisch, Tschannen, Lee, and Friese (2011) suggest that encouragement of team work among nursing staff may improve the work environment by limiting instances of missed nursing care. Staffing levels have also been studied in relation to missed nursing care and evidence has been found to suggest that the effect of unit staffing on missed nursing care may be a contributing factor in explanation of poor patient outcomes (Kalisch, Tschannen, & Lee, 2011).

Kalisch and Lee (2012a) designed a quantitative descriptive study with the leader member exchange theory (LMX) as the conceptual framework and established that there is evidence to support a lack of congruency between leaders and subordinates regarding what type of nursing care is missed and the reason for such occurrences. This was a large study across 124 medical-surgical, intermediate, intensive care, and rehabilitation units and included 4,411 nursing staff and 104 nursing leaders. Reasons for missed nursing care among such as having insufficient labor resources and material resources were more frequent among nursing staff as

compared to nursing leaders. Six of twenty-four types of missed nursing care were identified as missed significantly less according to nursing staff as compared to reports from nursing leaders. These six types of missed nursing care included complete documentation, patient teaching, emotional support, hand washing, patient discharge planning, and medication effectiveness assessment. Overall, nurse leaders indicated higher levels of teamwork than nursing staff but this difference was not statistically significant.

Staff outcomes are described within the missed nursing care model as job satisfaction, turnover, and intent to leave the organization. Intention to leave and nurse turnover was indicated more often in units with higher rates of missed nursing care and absenteeism (Tschannen, Kalisch, & Lee, 2010). Tschannen, Kalisch, and Lee (2010) found in a study that a regression model indicates that missed nursing care, age, overtime, and perceived absenteeism were significantly associated with the intention to leave the organization while controlling for patient acuity. There is also evidence to support that a higher level of missed nursing care may predict job satisfaction of nursing personnel (Kalisch, Tschannen, & Lee, 2011). The phenomena of intention to leave and job satisfaction are not mutually exclusive and may therefore need to be linked within the nursing care model in order to depict how these concepts are related.

Patient outcomes such as clinical complications, mortality, and satisfaction with care received are thought to be outcomes of missed nursing care in accordance with the missed nursing care model (Friese, Kalisch, & Lee, 2013). This is still an underexplored area within the missed nursing care model. Patient falls have been studied as an outcome (Kalisch, Tschannen, & Lee, 2012); however, the effect on missed nursing care has not been empirically studied in regard to its relationship with other types of poor patient outcomes such as pressure ulcers, incidence of hospital acquired diseases such as catheter associated urinary tract infections, and

average length of stay. The association of missed nursing care to patient mortality has also not been explored, as there is no evidence of this as reported in the scientific literature. Though the missed nursing care model only gives two examples of patient outcomes (e.g. falls and pressure ulcers) (Kalisch, Tschannen, & Lee, 2011), it is important for researchers to broaden further inquiry to determine if missed nursing care is associated with other types of patient outcomes.

**Summary.** One notable gap within the missed nursing care literature is the relationship of workplace incivility, and other negative affective characteristics, that might occur in the work environment as antecedents to missed nursing care. There is a current bias toward the investigation of positive nursing characteristics, such as teamwork, as previously explored by Kalisch and Lee (2010) as a mediator to missed nursing care. In addition, the influence of the nursing climate in the hospital structure on missed nursing care is not studied in empirical research. Examples of factors that may comprise the nursing climate include the perpetuation of an uncivil work environment as evidenced by coworker incivility among nurses. The omission of the impact of interpersonal relations beyond the concept of teamwork may prevent the development of testable hypotheses regarding the effect of incivility on missed nursing care, and, subsequently, negative patient outcomes (e.g. falls and pressure ulcers).

**Patient care quality and safety.**

**Research.** Investigating the prevalence of errors of commission (e.g. medication errors) by nurses in the hospital organization is one avenue with which to measure patient care quality and safety. Errors of commission are a concern for all stakeholders involved in the health care delivery system. The Institute of Medicine (2000) reported that up to 98,000 people die from medical errors each year (IOM, 2011). Since 2000, researchers continued to investigate nurse-sensitive indicators for patient outcomes (IOM, 2011). Safe nursing practice is important in the

effort to prevent medical errors (e.g. errors of commission) in the process of patient care delivery (IOM, 2011). The Institute of Medicine (2004) released a follow-up report to the initial report *To Err is Human: Building a Safer Health System* (1999). In this follow-up report, *Keeping Patients Safe: Transforming the Work Environment of Nurses*, the IOM committee presented evidence to support threats to patient safety in the nurses' work environment, including organization management practices, workforce deployment practices, work design, and organizational culture (IOM, 2004).

**Summary.** The measurement of patient outcomes can be conducted through review of nurse and physician documentation and incident report records. This may be flawed because it is probable that documentation in the patient chart or within incident reports by health care professionals is sometimes missed or incomplete. Magnet hospitals collect patient outcome data every four years as part of recertification requirements; however, this data might not be relevant for scientists investigating clinical problems if the data is not recent enough to be considered for inclusion into a study. Therefore, for these reasons, patient safety outcomes will be measured as registered nurse perceptions of the patient safety culture.

### **Literature Summary**

**Major Strengths.** Major strengths of literature concerning hospital structures, processes, and outcomes are its broad scope and relevance to health care system changes that are of current concern from a global point of view. The breadth demonstrated across the literature in different countries outside the United States provides support to suggest that factors influencing patient safety are a worldwide concern across health systems. For example, literature has been published from Australia (Hutchinson & Hurley, 2013; Hutchinson, Jackson, Wilkes, & Vickers, 2008), Canada (Laschinger, Wong, Regan, Young-Ritchie, & Bushell, 2013), Turkey (Kalisch,



Terzioglu, & Duygullu, 2012), and Brazil (Siqueira, Caliri, Kalisch, & Dantas, 2013) about hospital processes problems such as workplace incivility, workplace bullying, and missed nursing care. It is clear that nursing science to improve hospital structures, processes, and outcomes is in current demand and remains important in the continual improvement of hospital environments around the world.

**Major Weaknesses.** One major limitation across literature concerning hospital structures, processes, and outcomes relative to the nurses' work environment is the reliance on self-perception data to make inferences to a more general population of hospital staff nurses in the United States. However, the use of self-perception data is appropriate for investigating nurses' work environments due to the suggested influence of staff perceptions of civility on creating and sustaining cultures in hospital environments as demonstrated in the literature (Clark, 2013). Self-perception data of nursing leadership, nurse staffing, workplace incivility, teamwork climate, patient safety culture, and missed nursing care can provide valuable insights to the creation of work cultures despite the limitations inherent in the collection of self-perception data.

The use of self-perception data is most problematic in the workplace incivility literature, because construct validity is threatened by inconsistent use of terms (i.e. workplace bullying and workplace violence) to describe workplace incivility in scientific studies. For example, there is often not adequate justification to explain the use of different terms in different studies by the same group of researchers (Laschinger, Wong, Grau, 2012; Laschinger, Leiter, Day, Gilin 2009). In addition, most data collected to substantiate the existence of missed nursing care is from self-perception questionnaires with one notable exception that features a comparison of chart reviews and self-perception questionnaires (Wegmann, 2011).

It is also a major limitation that there is not sufficient evidence to suggest workplace incivility as a mediator and teamwork climate as a moderator in the hospital environment as potential direct and indirect variables influencing the relationships between hospital structures and outcomes. This gap will be addressed in this dissertation through the investigation of workplace incivility as a direct mediator and teamwork climate as an indirect moderator as influential to hospital structures and outcomes.

**Summary.** This state of the science review about hospital structures, processes, and outcomes supports an investigation within nursing science framed with Donabedian's structure-process-outcomes model of health care quality assurance (Donabedian, 1980). Clearly, hospital structures such as hospital conditions and leadership may influence hospital processes (e.g. peer-to-peer registered nurse workplace incivility and collective efficacy) as influential to hospital outcomes (e.g. missed nursing care and patient safety cultures). There is not sufficient evidence to suggest that the impact of hospital conditions and authentic leadership influence processes (e.g. *peer-to-peer registered nurse workplace incivility* and *collective efficacy*); in addition, insufficient evidence exists to connect these relationships to nurse patient safety culture perceptions. Evidence continues to grow about clinical problems in the nursing work environment, such as *missed nursing care*, and there is continuing concern about the future of the United States health care system in terms of cost, quality, and outcomes (IOM, 2011). The author plans to bridge a gap in nursing literature by conducting a dissertation designed to determine relationships between factors underexplored hospital structures, processes, and outcomes that are relevant to nursing practice.

## **Chapter Three**

### **Methods**

The purpose of this dissertation was to investigate relationships among hospital structures, hospital processes, and hospital outcomes using Donabedian's (1980) conceptual framework relative to hospital patient quality outcomes. Hospital structures investigated included registered nurse perceptions of *nurse manager ability, leadership, and support of nurses*, as well as registered nurse perceptions of *staffing and resource adequacy*. Hospital processes included the presence of *peer-to-peer registered nurse workplace incivility* and *collective efficacy* among the nurse work group. Hospital outcomes included nurse perceptions of *patient safety cultures* and *missed nursing care* in the hospital. Specific methodological considerations to address inherent concerns about investigating such aspects of the hospital nurse work environment will be discussed in this chapter. The sampling method, setting of investigation, instrumentation, data analysis plan, and intention to maintain rigorous ethical research standards will be described in relation to the unique challenges of research in health care systems.

### **Design**

The study design was cross-sectional, descriptive, and correlational for investigation of a conditional process model using combined mediation and moderation through regression (Hayes, 2013; Knapp, 1998; Pedhazur, 1982; Mueller, 1996; Munro, 2005). The purpose of using quantitative methods was to determine if data from a sample of hospital nurses supported meaningful, significant relationships about how hospital structures predict hospital processes and outcomes.

Shadish, Cook, and Campbell (2002) provide a critical discussion about using a non-experimental, theory-based quantitative methodology as opposed to using quasi-experimental

and experimental methods with control groups and randomization. Supporters suggest that non-experimental investigations might reveal possible predictive relationships to inform future research questions for more targeted investigations (Weiss, 1998, as cited by Shadish, Cook, & Campbell, 2002). Shadish, Cook, and Campbell (2002) emphasize that theory-based, non-experimental investigations are not an adequate replacement for quasi- and experimental research; therefore, if enough evidence exists to suggest the need for a quasi-experiment, then such an investigation would be more helpful to advance nursing science. Relationships between variables in this dissertation (i.e. *nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, missed nursing care, coworker incivility, collective efficacy, and patient safety culture*) were not established well enough to warrant a quasi-experimental design.

Several threats to internal and external validity existed for a path analysis. For example, there could have been ambiguous temporal precedence; it may have been unclear whether variable A (e.g. *coworker incivility*) predicted variable B (e.g. *patient safety culture*), or vice versa (Shadish, Cook, & Campbell, 2002). In addition, registered nurses dissatisfied with the organization may have been more apt to participate in the study resulting in a selection bias (Shadish, Cook, & Campbell, 2002). One notable threat to external validity was that results can only be generalized to certain hospitals based upon the specific type of hospital in which this study was conducted (Shadish, Cook, & Campbell, 2002). Thus, it was likely not possible to generalize finding from a magnet hospital organization to non-magnet hospital organizations due to differences in management philosophy and available for nurses.

### **Setting**

The setting for data collection was a large not-for profit health care system in North Texas. This not-for-profit health care system, Baylor Scott & White Health, is the product of a

merger conducted between Baylor Health Care System and Scott & White Health Care (Baylor Scott & White Health, 2015). Baylor Scott & White Health is the largest not-for-profit health care system in Texas and one of the largest in the United States; the system includes 43 hospitals, more than 500 patient care sites, more than 6,000 affiliated physicians, and 34,000 employees (Baylor Scott & White Health, 2015). There are about 6,000 registered nurses in the north division of Baylor Scott & White Health (S. Houston, personal communication, April 29<sup>th</sup>, 2015). The Baylor Scott & White Health parent company is in Dallas, Texas, and the service company is in Temple, Texas. The rationale for choosing to sample bedside hospital staff nurses at a large health care system was to ensure that adequate data were obtainable from a sample of nurses within one major health care system. Collection and analysis of data from hospitals within one health care system reflected staff registered nurse perceptions within one unified system guided by a specific mission, vision, and values that reflect patient care practice goals.

### **Sample**

The target population from which a sample was obtained included registered nurses actively working as bedside clinicians in hospital units providing patient care. One inclusion criterion was that participants needed to hold a staff registered nurse position in a hospital wherein the participant was providing direct patient care. Staff registered nurses included in the sample were prepared at all levels of education. Nurse unit managers were excluded because the focus was on staff nurse peer perceptions. Licensed vocational or practical nurses (i.e. LVNs or LPNs) were excluded from this study to ensure participants within the sample were held to the same regulations according to state licensure guidelines. Nurses who reported working in outpatient clinics, observation areas, education, lactation, wound care, float pool, and administration were excluded due to having work environments allowing for more autonomous

care not influenced as much by group behaviors, as a result of the mobility the nurse is afforded through a consultant, administrator, or educator role. It was important to collect data from staff registered nurses providing direct patient care in hospital units as peers within the organization because such data may provide insight to the influence of nurse manager leadership and staffing practices on hospital processes (i.e. *peer-to-peer registered nurse workplace incivility* and *collective efficacy*) and outcomes (i.e. *missed nursing care* and *patient safety culture*). Investigation of processes such as *collective efficacy* and *peer-to-peer registered nurse workplace incivility* in patient care units within hospitals adds to a growing knowledge base on the impact of the nurse on *patient safety cultures*.

The primary unit of analysis was the individual nurse with consideration of the larger setting comprised of individual patient care units as functioning within large hospital structures, processes, and outcomes. Individual registered nurse perceptions were represented through self-reported data collected through questionnaires. Such individual perceptions were reflective of *peer-to-peer registered nurse workplace incivility* as a phenomenon among colleagues and *collective efficacy* as a phenomenon among all staff on a hospital unit. Additional data were not collected for hospital-to-hospital comparisons because of time constraints and cost.

### **Calculation of Sample Size**

Sample size was determined with power analysis (Hully et al., 2007). The anticipated effect size, statistical power level, number of predictors, and probability level were considered in estimating the sample size (Cohen, 1988). For this dissertation, the anticipated effect size of *missed nursing care* and *peer-to-peer registered nurse workplace incivility* as perceived by individual nurses within the hospital organization was small to medium (i.e. 0.07). The rationale for an effect size between the smallest effect and a medium effect was in acknowledgment that

the proportion for these variables is smaller in departments with a lower patient acuity level. The a-priori sample size for multiple regression for an anticipated effect size of 0.07, statistical power of 0.8, six predictors (i.e. *nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, coworker incivility, collective efficacy, nurse manager ability, leadership, and support of nurses* moderated by *collective efficacy*, and *staffing and resource adequacy* moderated by *collective efficacy*), and probability level of 0.05 was  $n = 200$  (Soper, 2015). In addition to such power analysis calculations, Nunnally and Bernstein (1994) note that, for path analysis, the researcher may calculate an estimated sample size by multiplying the number of variables in the model by 30 (Wade, 2000). Using this method, the estimated sample size would be  $n = 180$ . In order to account for potential missing data, an additional 20 more subjects were added; therefore, the total target sample size was  $N = 220$ .

### **Instrumentation**

Five instruments were used to collect data for this dissertation, including the Collective Efficacy Beliefs Scale, Hospital Survey on Patient Safety Culture (AHRQ, 2014), MISSCARE Scale, Practice Environment Scale developed from the Nurse Work Index (PES-NWI) and Workplace Incivility Scale (WIS). Each measurement scale was placed in the survey in accordance with the following order to minimize respondent bias: (1) Hospital Survey on Patient Safety, (2) MISSCARE Survey (Part A), (3) Workplace Incivility Scale (WIS), (4) Collective Efficacy Beliefs Scale, (5) Practice Environment Scale, and (6) Demographic Questions. Respondents will answer questions about the nurse work environment (e.g. *nurse manager ability leadership and support of nurses* and *staffing and resource adequacy*) prior to questions about *coworker incivility* and *missed nursing care* in order to avoid suggesting a causal relationship between *coworker incivility* behaviors and *missed nursing care* to perceptions of

*patient safety culture*. Permissions to use all instruments can be found in Appendix B. Each instrument within the survey is discussed below.

### **Hospital Survey on Patient Safety Culture**

**Description.** The 42-item Hospital Survey on Patient Safety Culture includes 12 dimensions to measure facets of *patient safety culture* perceptions in hospitals. Outcome dimensions of the safety culture include (1) overall perceptions of safety (4 items) and (2) frequency of event reporting (3 items). Safety culture dimensions include (1) supervisor/manager expectations and actions promoting patient safety (4 items), (2) organizational learning—Continuous improvement (3 items), (3) teamwork within hospital units (4 items), (4) communication openness (3 items), (5) feedback and communication about error (3 items), (7) staffing (4 items), (8) hospital management support for patient safety (3 items), (9) teamwork across hospital units (4 items), and (10) hospital handoffs and transition (4 items). In this study, the frequency of event reporting subscale was used as a parameter for patient safety culture.

**Validity.** Using exploratory analysis, it was found that patient safety culture is a multi-dimensional concept that loads into 14 distinct factors. Using confirmatory analysis, it was found that there are 12 dimensions in the model after determining items that were problematic. Inter-correlations of the 12 dimensions, or subscales, within the Hospital Survey on Patient Safety Culture are between .23 and .60. These values are between an expected moderate to high range indicating each subscale as a measurement of a distinct construct (AHRQ, 2004).

**Reliability.** Each of the 12 dimensions of the Hospital Survey on Patient Safety Culture has an acceptable level of reliability indicated by a Cronbach's alpha equal to or greater than .60 (AHRQ, 2004). Reliabilities for outcome dimensions of the safety culture include (1) overall perceptions of safety (.74) and (2) frequency of event reporting (.84). Reliabilities for safety



culture dimensions include (1) supervisor/manager expectations and actions promoting patient safety (.75), (2) organizational learning—Continuous improvement (.76), (3) teamwork within hospital units (.83), (4) communication openness (.72), (5) feedback and communication about error (.78), (7) staffing (.63), (8) hospital management support for patient safety (.83), (9) teamwork across hospital units (.80), and (10) hospital handoffs and transition (.80). In this study, the pooled Chronbach's alpha for frequency of event reporting was .83. Refer to Table 3.1 for a comparison among established and current scale reliabilities for frequency of event reporting.

**Scoring.** Composite scores for each of the 12 *patient safety culture* dimensions can be obtained by calculating the mean of the responses to items in each dimension after adjusting for reverse coded items (AHRQ, 2004). Questions 1-28 and 32-42 are measured on the following scale indicating level of agreement: (1) strongly agree, (2) disagree, (3) neither, (4) agree, or (5) strongly agree (AHRQ, 2004). Questions 29-31 are measured on the following scale indicating level of frequency: (1) never, (2) rarely, (3) sometimes, (4) most of the time, (5) always (AHRQ, 2004). Low scores indicate negative perceptions of safety culture and high scores indicate more positive perceptions of safety culture. To measure the perception of *patient safety culture*, the composite score for the *frequency of event reporting* was calculated. Higher scores for the frequency of event reporting as appropriate indicate more positive perceptions of *patient safety culture*.

### **MISSCARE Survey Part A: Acute Care Missed Nursing Care Subscale**

**Description.** The MISSCARE Survey measures the frequency of *missed nursing care* (e.g. Part A) as well as the reasons for *missed nursing care* (e.g. Part B) (Kalisch & Williams, 2009). In Part A, participants are asked about the degree to which each agrees in regard to

content presented in each item about *missed nursing care* frequency by all nursing staff using the scale: (1) rarely, (2) occasionally, (3) frequently, (4) always, or (0) non-applicable. In this study, a subscale of the MISSCARE Survey Part A (i.e. Acute Care Missed Nursing Care subscale) was used to target care applicable to the registered nurse participants who answered the survey; the Acute Care Missed Nursing Care Scale was developed by Castner and Dean-Baar (2014) to ensure that examining missed nursing care is relevant when sampling across a hospital system. This subscale is comprised of 15 of the original 22 questions in the MISSCARE Survey Part A.

In MISSCARE Survey Part B, participants are asked to rate each item using the following options: (1) significant factor, (2) moderate factor, (3) minor factor, or (4) not a reason for unmet nursing care. Part B was not used in this study for data collection and analysis because the reasons for *missed nursing care*, as proposed conceptually by Kalisch and Williams (2009), are not consistent with the conceptual framework guiding this study. Refer to Appendix B to see verification of permission granted to use the MISSCARE Survey.

**Validity.** The MISSCARE Survey in totality was tested for content validity through a review of staff nurse experts comprising three panels in separate hospitals (Kalisch & Williams, 2009). Revisions were made to the tool based upon input from these panels. Kalisch and Williams (2009) reported a content validity index of 0.89. In addition, input was requested from 95 nurses through interviews to evaluate the elements of nursing care most critical to include as part of the MISSCARE survey (Kalisch & Williams, 2009). Construct validity analysis among a sample of 459 staff nurses indicates that items on Section A of the MISSCARE scale load on four factors: assessment, interventions (individual needs), interventions (basic care), and planning (Kalisch, Landstrum, & Williams, 2009).

Using principal component analysis, Castner and Dean-Baar (2014) found that items within the MISSCARE Survey (Part A) were found to be in two distinct subscales after consideration of missing data patterns based on item contents and reporting unit. Use of factor analysis revealed two subscales for missed nursing care: Acute Care Missed Nursing Scale (15 items) and Activities of Daily Living (ADL) Omissions (6 items). Items pertaining to ADLs not applicable across units were also removed, including those regarding feeding, meal setup, turning, ambulation, mouth care, and call light response (Castner & Dean-Baar, 2014). These six ADL items were excluded from this study for analysis.

**Reliability.** Test-retest reliability of Part A of the MISSCARE Survey was 0.87 and 0.86 (Kalisch & Williams, 2009). Test-retest reliability was determined by administering identical forms of the MISSCARE Survey to the same sample of nurses at two different time periods in a span of two weeks (Kalisch & Williams, 2009). Internal consistency reliability for the Acute Care Missed Nursing Care subscale is 0.89 (Castner & Dean-Baar, 2014). In this study, the Chronbach's alpha for the Acute Care Missed Nursing Care subscale, for five was .94. Refer to table 3.1 for a comparison among established and current scale reliabilities for Acute Care Missed Nursing Care.

**Scoring.** The 15 items comprising the Acute Care Missed Nursing Subscale are scored using the following scale: (1) rarely, (2) occasionally, (3) frequently, (4) always, or (0) non-applicable (Kalisch & Williams, 2009). Higher scores indicate higher frequencies of *missed nursing care* as perceived by individual staff registered nurses.

### **Workplace Incivility Scale (WIS)**

**Description.** The Workplace Incivility Scale (WIS) is a 7-item measurement scale designed to determine the frequency of experiencing “disrespectful, rude, or condescending

behaviors from superiors and coworkers within the previous 5 years (Cortina et al., 2001, p. 59).” Respondents were required to indicate the frequency of workplace incivility experienced from nurse coworkers of equal status in the organization in the previous month. Laschinger (2014) has used the WIS to measure nurse coworker questions by making this specification in the stem of the measurement tool. Changes to actual items within the instrument will not occur; therefore, the original instrument content and validity will remain intact. Refer to Appendix B to see verification of permission granted to use this measurement tool.

**Validity.** Cortina et al. (2001) note that item content in the WIS is consistent with workplace negative behavior as described by other workplace incivility researchers (Einarsen & Skogstad, 1996 as cited by Cortina et al., 2001). Content included for each item was created from responses from employee participants in focus groups to represent all levels of an organization (Cortina et al., 2001). Confirmatory factor analysis was conducted on the seven items within the WIS; all items loaded significantly onto a single-factor model (Cortina et al., 2001).

**Reliability.** The WIS has previously been reliable and cohesive with an alpha coefficient of .89 among a total sample of 833 women, 325 men, and 9 individuals who declined to indicate their gender (Cortina et al., 2001). In the current study, the reliability for the WIS was 0.84. Refer to table 3.1 for a comparison among established and current scale reliabilities for the WIS.

**Scoring.** The frequency response scale of coworker incivility experiences allows seven responses ranging from (0) never (1) sporadically, (2) now and then, (3) regularly, (4) often, (5) very often, and (6) daily (Cortina et al., 2001; Leiter, Laschinger, Day, & Oore, 2011). Higher scores indicate stronger perceptions of workplace incivility (Cortina et al., 2001). The workplace incivility scale has been modified for use in several studies; for example, each item in the Workplace Incivility Scale as used by Laschinger et al., 2009 reflects two subscales for coworker

and supervisor workplace incivility; however, only the coworker subscale contributes to a total score to determine the frequency of workplace incivility among registered nurse peers. For this dissertation, the original seven-point Likert-type response scale was used to capture workplace incivility on the most time-sensitive response scale (Cortina et al., 2001; Leiter, Laschinger, Day, & Oore, 2011). Though researchers from other disciplines measure workplace incivility as a scale to measure the level of agreement for each participant (i.e. strongly disagree to strongly agree) (Cortina et al.), this study used the frequency format answers as tested by others (Laschinger, 2014; Leiter, Laschinger, Day, & Oore) because it was a more time-sensitive way to measure the occurrence of coworker incivility in the last one month timeframe.

### **Collective Efficacy Beliefs Scale**

**Description.** The Collective Efficacy Beliefs Scale was used to measure the participant's belief regarding the ability of the group in which he or she works to effectively carry out tasks or complete a project (Riggs & Knight, 1994). This scale measured collective efficacy as an individual-level belief about the ability of the work group to collectively accomplish an objective. Riggs and Knight (1994) defined a work group in this sense as a "unit of employees with a common identity and some level of dependence on each other for the achievement of common goals" (p. 759). The Collective Efficacy Beliefs Scale consists of 7 items.

**Validity.** Riggs and Knight (1994) determined using factor analysis of the Collective Efficacy Beliefs Scale that *collective efficacy* is distinguishable from other similar scales to measure similar concepts about efficacy such as personal efficacy. Factor analyses of distinct efficacy measurement scales for personal and *collective efficacy* demonstrate that these concepts are measurable with distinct scales (Riggs & Knight, 1994).

**Reliability.** The Collective Efficacy Beliefs Scale is reliable as indicated by a Cronbach's alpha coefficient score of 0.84 (Riggs & Knight, 1994). In this study, the Cronbach's alpha for the total Collective Efficacy Beliefs Scale was 0.81. Refer to table 3.1 for a comparison among established and current scale reliabilities for Collective Efficacy Beliefs Scale.

**Scoring.** The scoring for the Collective Efficacy Beliefs Scale is on a 6-point scale: (1) strongly disagree, (2) disagree, (3) disagree somewhat, (4) agree somewhat, (5) agree, and (6) strongly agree (Riggs & Knight, 1994). Items 2, 3, 5, 6, and 7 are intended to be reverse scored (Riggs & Knight, 1994). The total score for the scale indicates an individual respondent's perception of collective efficacy among a work group. Greater scores indicate increased perceptions of collective efficacy and lesser scores indicate decreased perceptions of collective efficacy.

### **Practice Environment Scale (PES-NWI)**

**Description.** The 31-item Practice Environment Scale (PES-NWI) was developed by Lake (2002) from the 65-item Nursing Work Index. The purpose of the PES-NWI is to measure dimensions of nursing work environments based upon magnet hospital philosophies. It measures nurse perceptions of the quality of the practice environment that may influence patient outcomes (Lake, 2002). Five subscales comprise the 31-item tool, including (1) nurse participation in hospital affairs, (2) nursing foundations for quality of care, (3) *nurse manager ability, leadership, and support of nurses*, (4) *staffing resource adequacy*, and (5) collegial nurse-physician relations.

**Validity.** The PES-NWI is sufficient for the calculation of distinct subscales to describe the practice environment for nurses in different dimensions. Lake (2002) found sufficient independence between most subscale pairs; the most inter-subscale correlation was between

nurse participation in hospital affairs and nursing foundations for quality of care. Construct validity is supported in that higher scores were obtained from nurses in magnet hospitals versus non-magnet hospitals (Lake, 2002).

**Reliability.** Lake (2002) found the individual-level Cronbach's alphas to be high (.80) with the exception of the moderate score for the Collegial Nurse-Physician Relations subscale (.71). Reliability of the PES-NWI subscales as a hospital-level measure has been found to be good with an average inter-item correlation of .64-.91 (Lake, 2002). In this study, the *staffing and resource adequacy* subscale pooled Chronbach's alpha was 0.82. For *nurse manager ability, leadership, and support of nurses*, the Chronbach's was 0.82 in the current study. Refer to table 3.1 for a comparison among established and current scale reliabilities for *staffing and resource adequacy* and *nurse manager ability, leadership, and support of nurses*.

**Scoring.** The PES-NWI is scored using the following scale: (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree. The total score for the *nurse manager ability, leadership, and support of nurses* subscale served as the measurement for *nurse manager ability leadership and support of nurses* as a variable. The total score for the *staffing resource adequacy* subscale will serve as the measurement for *staffing resource adequacy* as a variable.

### **Demographic Questionnaire**

Participants were asked to provide information about age, gender, number of years of experience as a practicing bedside nurse, licensure designation, and education level. Questions were also asked about the unit characteristics for each participant in this hospital system, including type of unit and length of employment in this unit. Data about licensure designation and education level were obtained to ensure that only respondents who are registered nurses with at least a baccalaureate degree would be included in this dissertation. Information about

participant age, gender, and number of years of experience as a practicing bedside nurse were important to collect to provide an explanation of the population characteristics and determine the generalizability of data to a larger population of registered nurses practicing in similar United States hospitals. Participant age and years of experience on the unit were obtained using a fill in the blank format on the survey; however, for data analysis, age and experience categories were created to further analyze relationships between participant age, experience, and hospital perceptions. Categories for age ranges were in five year increments from 20 -25 to 51 – 55. Participants who were 56 – 75 years of age were in one single category. Categories for years of experience on the unit included 1 - 2, 3 - 5, 6 - 10, 11 - 15, 16 - 20, and 21 or greater.

Table 3.1

*Reliabilities of Scales and Subscales*

|   | Number of Items | Previoulsy Established Chronbach's Alpha | Chronbach's Alpha in Current Study |
|---|-----------------|--|------------------------------------|
| CEBS  | 7               | 0.84 (Riggs & Knight, 1994)              | 0.81                               |
| HPOPSC subscale for frequency of event reporting as a measure of patient safety climate | 3               | 0.84 (AHRQ, 2004)                        | 0.83                               |
| MISSCARE Acute Missed Care  | 15              | 0.89 (Castner & Dean-Baar, 2014)         | 0.94                               |
| PES-NWI subscale for staffing   | 4               | 0.80 (Lake, 2002)                        | 0.82                               |
| PES-NWI subscale for nurse leadership   | 5               | 0.84 (Lake, 2002)                        | 0.82                               |
| WIS   | 7               | 0.89 (Cortina et al., 2001)              | 0.84                               |



### **Measurement Instrument Formatting in Online Survey**

Original instructions and exact item formatting was used in order to maintain measurement tool validity and reliability while also allowing participants to complete the questionnaire online. The survey was created with UWM Qualtrics, an online platform available to graduate students and faculty of UWM for survey creation and data collection (UWM Qualtrics, 2015). The survey was formatted so that users could back up and correct answers, if necessary, before final submission to increase the accuracy of intended responses. Participants were allowed to save unfinished survey answers and finish the remainder of the survey at a later date; however, users were not given longer than one week to submit a survey in progress. A progress meter indicating the percentage of the survey completed was displayed on the survey screen so that participants could track progress. Only participants who accessed the survey by invitation from the student principal investigator were recruited. In addition, an option was enabled in UWM Qualtrics to prevent online indexing of this information so that automatic online data gathering programs could not automatically generate responses that would be confused with actual data.

### **Procedures for Recruitment and Data Collection**

After receiving endorsement from chief nursing officers and IRB approvals from both the University of Wisconsin-Milwaukee and Baylor Scott & White Health, an online survey comprised of the measurement scales and subscales summarized in Table 3.1 was activated online for data collection. Data collection began on November 2<sup>nd</sup> and ended on December 13<sup>th</sup>, 2015. For each week of data collection, an email was sent to all staff registered nurses at Baylor Scott and White Health hospitals inviting them to participate in this research study. The secretarial assistant of Baylor Scott and White's director of nursing research sent the recruitment

email confidentially through a listserv; thus, the investigator did not access individual staff nurse names. Within the email, a description of informed consent was provided (Appendix C); completion of the survey served as their consent. A hyperlink for the online questionnaire was also included in the recruitment email. In addition to an email announcement, nurse research representatives for each of the 5 hospitals within Baylor Scott & White Health were asked for permission to post a flyer (Appendix D) in nurse staff break room areas and bulletin boards about the opportunity to participate in this study. The Baylor Scott and White IRB and UWM IRB approved four of the five research representatives as co-investigators as a way to enable this hospital system to include results into quality improvement measures (Appendix E). Co-investigators were not involved in research proposal development, data analysis, or interpretation of findings; the only responsibility of co-investigators was to assist the principal investigator in navigating each hospital during participant recruitment as needed.

The original plan was for the survey to be open for three weeks from November 2<sup>nd</sup> to November 23<sup>rd</sup>, 2015. At the end of week three, however, there were only 238 survey responses submitted. Based on a discussion with the dissertation chair, a decision was made to extend the study data collection for an additional 3 weeks. Following IRB approval from both UWM and Baylor Scott and White, data were collected for an additional 2 weeks and ended on December 13<sup>th</sup> with a total of 283 survey responses of approximately 3500 potential registered nurse participants. The response rate of 7.8% was low given that there were approximately 3500 potential staff registered nurses who were eligible to participate. Only two locations provided actual staff registered nurse numbers on request; the other three locations were estimated based on their size compared to other similar sized hospitals in the system.

## **Human Subjects Protection**

IRB approval from the University of Wisconsin-Milwaukee (Appendix E) and Baylor Scott and White (Appendix F) was obtained prior to beginning the study. In order to be eligible for this study, all participants had to be registered nurses working within hospitals and must have been actively working at the bedside. Participants received a description of the study, also reiterated in a brief summary before the online questionnaire began, to ensure that participants agree to informed consent before providing data. Completion of the online survey served as informed consent. Confidentiality was honored because the principal investigator sent out invitations to unit staff nurses through executive assistants for participant recruitment rather than the unit nurse manager to ensure that a power differential does not exist in the recruitment strategy. Registered nurses at Baylor Scott and White Health who filled out the survey and chose to include their mailing address received a \$20.00 amazon.com gift card as a token of appreciation.

Close attention to ethical codes and principles of scientific research were maintained such as (1) respect for persons (2) beneficence, and (3) justice. All potential participants within the hospital organization had the right to refuse to participate in the study if participation was not desired. Little risk of psychological upset is anticipated; the researcher advised participants to answer survey questions during a time that does not interfere with work obligations. Research findings and implications to provide continuing education for nurses will be shared with the hospital.

## **Data Management**

Data were kept secure and private on a personal computer hard drive. Back-up copies of the data were kept on a password protected external drive storage device to ensure that data

copies are kept intact in case of file corruption or internal computer hard drive failure. Data were entered in SPSS by the primary researcher and checked a second time for accuracy. All decisions made during the data cleaning and analysis process are explained in the following paragraphs. Consultation with a statistician was required to address concerns with data management. The rationale for keeping a detailed log was to not duplicate efforts during the dissertation process and keep an organized process in completing this project. The goal was to reduce the chances of missing data as much as possible by checking forms for completeness (Hulley et al., 2007). This is because missing data, even a small amount, can bias conclusions (Hulley et al., 2007).

Data were inputted into SPSS for cleaning before analyses to check for coding errors and for an initial screening of data missingness. The first step for inputting data was to download all data from Qualtrics into an SPSS file. This SPSS file required reformatting and relabeling to maintain accurate documentation of all steps taken during analysis. Each variable was renamed, and each participant was given a unique ID number. Each PDF survey, for each participant, was downloaded to double check against the SPSS output downloaded from Qualtrics. Each variable requiring reverse coding was transformed in SPSS to reflect an accurate total score for each variable calculated. Total scores for all variables were calculated for staffing and resource adequacy, nurse manager ability, leadership and support of nurses, coworker incivility, collective efficacy, missed nursing care, and frequency of adverse event reporting. The total scores missing within the 283 surveys was the first screening method for the need to screen data for inclusion, exclusion, case deletion, and possible data imputation.

## Data Cleaning

### Case Removal and Rationale

The subsequent methodical process of data screening and cleaning will be explicated in the paragraphs below. Though the number of the individuals who accessed the survey was 283, the total sample size ( $N$ ) used for this study was 212. The step-by-step elimination process of cases that were removed is also explained in Figure 3.1. Each of the five stages of data exclusion, as shown in the seven rows of Figure 3.1, will be described.

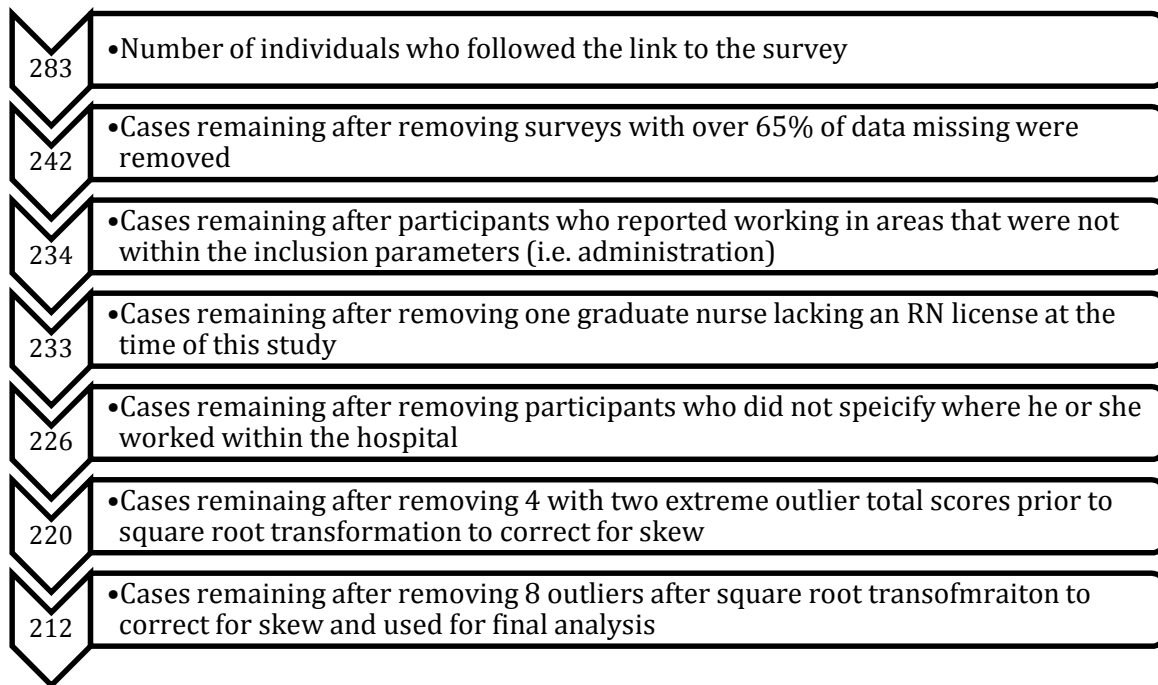


Figure 3.1. Data Cleaning and Missing Data

Of the 283 surveys submitted on Qualtrics, 41 had over 65% of the survey left unanswered; thus, the participant stop answering at least question 75 for the 117-question survey. Surveys with over 65% of data missing were excluded, which included 41 cases in this study. Of these 41 cases with over 65% of data missing, 11 were submitted without any data completed. It is likely that these surveys were from those who clicked on the link and decided not to participate after reading the informed consent. For the remainder of the 31 cases deleted, 26

answered questions up to the Hospital Survey on Patient Safety Culture, which was up to question 42. There were 2 potential participants that quit during the missed nursing care questions, three that quit during the Collective Efficacy Beliefs Scale, and 2 that quit during the Workplace Incivility Scale. It is interesting to note that 6 potential participants quit after last answering question 11, and that 3 potential participants quit after answering question 42. Question 11 was, “When one area in this unit gets really busy, others help out,” which was a question to gauge patient safety culture. Therefore, 242 remained after screening for missing data at this stage, as is shown in the second row of Figure 3.1.

Data were considered missing when the number of question responses for each variable was not equal to the number of respondents who participated in the study (Knapp, 1998). Large amounts of missing data were addressed because not doing so can pose a significant problem in the data analysis and interpretation of data for several reasons. For example, it was impossible to calculate a total score for all variables without addressing missing data to compute subscale scores for regression analyses (Knapp, 1998). Unaddressed missing data would limit data analysis to non-parametric methods. Therefore, as suggested by Knapp (1998), prevention and deletion of missing data were the first steps in addressing this problem.

Participants who reported working in administration (1), education (1), lactation (1), wound care (1), float pool (2), RN liaison for pre-op and perioperative (1), and an outpatient clinic (1) were excluded, decreasing the potential sample size to 234, as shown in the third row of Figure 3.1. These participants were excluded because perceptions would not be consistent with the work performed on one patient care unit. For example, a float pool nurse may work on several different units for an inconsistent amount of time on each to properly answer questions requiring the functioning of RNs, as a work group on one unit. One participant was excluded due

to reporting graduate nursing status and was therefore not yet a registered nurse. A graduate nurse is a temporary title given to a person who is expected to obtain RN licensure. The potential sample was therefore reduced to  $n = 233$ .

Of the 233 remaining after excluding the graduate nurse, as shown in the fourth row of Figure 3.1, an additional 7 were excluded, as these participants did not identify the unit worked. Removing these cases was necessary because, without knowing the unit type, RNs who worked in float positions could have been included in final analysis and skew results. The remaining potential sample included 226 staff registered nurses as shown in row five of Figure 3.1.

Generation of histograms within SPSS guided identification of outliers in the data set that could have been coding errors (Munro, 2005). In addition, data were checked for outliers using a calculation modified from Tukey's original method, using 1.5 as a multiplier in the outlier equation, to a method that aims to preserve more data in the sample by revealing only extreme outliers by using the multiplier 2.2 (Hoaglin & Iglewicz, 1987). Using this method, the upper and lower ranges for data not considered outliers were: workplace incivility (-6.2 – 26.2), collective efficacy (13.4 – 56.6), missed nursing care (-4 – 28), and nurse manager ability, leadership, and support for nurses (5.2 – 26.8). Using these ranges, two cases were categorized as outliers based on extreme high responses to missed nursing care and extreme high responses for coworker incivility. Box-plot graphs were used to determine additional outliers. Two additional participants were excluded as they had extreme outliers for coworker incivility. Missed nursing care was skewed, and was a dependent variable; therefore, two cases were systematically removed. The potential sample was reduced to 220, as shown in Figure 3.1.

After removal of extreme outliers, square root transforming all total score variables resulted in a correction in skew among all variables except for *nurse manager leadership, ability,*

*and support of nurses and coworker incivility*. One outlier for nurse manager leadership, ability, and support of nurses, was removed. There were seven cases for coworker incivility removed, as outliers, to achieve a more normal distribution. In all, a total of eight cases were removed after The total sample remaining was  $N = 212$  with an effect size of 0.08. Frequency distributions for all variables met normalcy for multivariate analysis after data cleaning.

### **Screening for Other Missing Data Patterns**

After addressing missing data among missed nursing care questions, applying inclusion and exclusion criteria, and removing extreme outliers, the remaining data were again screened for data missing not at random. Only the questions to be used for analysis were included in testing for missing data patterns. Questions used are referenced in the previous sections about instrumentation. For each of the questions containing missing data, the percentage of data missing was 1.9 or less (under 15%); therefore, this is one indication that data are missing at random and that multiple imputation (MI) could be performed (Kendall, 2015).

To further determine if multiple imputation would be appropriate, Little's MCAR test was calculated. According to Little's MCAR test, as calculated through expectation maximization (EM), data missing would be classified as missing completely at random (MCAR) ( $p = 0.62$ ). The  $p$  value for Little's MCAR test is above 0.05, or 0.62, which means we fail to reject the null hypothesis that data are missing not at random (MNAR). In other words, there is no relationship between the missing data correlating to a specific non-random pattern. Little's MCAR test was performed by calculating the EM mean from the missing data analysis function in SPSS 23. From this analysis, it was determined that data missing are at random or completely at random. It was therefore appropriate to use multiple imputation.



## Data Imputation

It was necessary to perform data imputation since the sample size was reduced from a larger number well within the target sample needed ( $n = 283$ ) to a smaller number ( $N = 212$ ) slightly below the target sample desired ( $n = 220$ ) after removal of incomplete response sets of over 65% of data missing and removal of outliers. Several participants were excluded due to not meeting inclusion criteria or for being outliers; however, it was possible to include a total of 212 participants, an adequate sample size, through the use of data imputation as illustrated in Figure 3.1. Data imputation was performed after screening data for outliers, statistical consultation, and investigating for a pattern of missed data. Multiple imputation (MI) was performed in SPSS 23 by generating 5 data sets from the original data set to impute missing values in consultation with a statistician. It was appropriate to use multiple imputation because data were missing at random (MAR) or missing completely at random (MCAR) (Enders, 2010).

## Data Analysis

Before the calculation of inferential statistics (e.g. hierarchical regression and correlational analyses), multicollinearity was assessed to ensure that different independent variables were interrelated (Munro, 2005). To test for multicollinearity using SPSS, collinearity statistics such as tolerance and VIF were generated within correlational matrices (Munro, 2005). Tolerance and VIF values for all independent variables were in an acceptable range (i.e. tolerance values were above .10 and VIF values were less than 10). Prior to analysis of research questions, a Pearson's correlation matrix between all variables in the study was computed. Refer to Table 4.6 for the Pearson's Product-Moment Correlations for each variable.

The *Statistical Package for the Social Sciences (SPSS) 23* for Mac OS was used for descriptive data analysis, bivariate correlations (questions 1 – 8), simple mediation (questions 9 –

12), mediation - moderation (questions 13 – 15), and hierarchical regression (questions 16 – 18). PROCESS macro for SPSS (Hayes, 2014) was used to fit data to mediation and moderation models, as programmed in the macro for initial data analysis, to address questions 9 - 15. Path analysis incorporating mediation and moderation was most appropriate for this dissertation because it served as an open, non-experimental method for investigating research questions, based on theoretical ideas, as part of proposed path models (Shadish, Cook, & Campbell, 2002). The use of path analysis was to contribute to scientific understanding about the influence of hospital structures and processes on hospital outcomes (Pedhazur, 1982).

Multiple regression analyses were used to make inferences about the data set to a more general staff registered nurse population. In order to investigate research questions requiring hierarchical regression, data were entered in three separate steps, as presented within the guiding theoretical framework, to understand if variables in step 2 (i.e. staffing) and step 3 (i.e. coworker incivility) predicted the outcomes above and beyond step 1 (i.e. nurse manager leadership) as a control. Thus, hierarchical regression was necessary because this method of analysis allowed the researcher to determine if the staffing and coworker incivility were predictive of hospital outcomes within the sample and to a larger extent than nurse leadership. In addition, path analysis was used to determine the strength of each pathway in the dissertation model and the impact of hospital predictor variables on hospital outcomes.

Path analysis was employed to determine if there was a relationship between hospital structures and hospital outcomes when mediated by *collective efficacy* and *peer-to-peer registered nurse workplace incivility* in hospital units (Hayes, 2013). Path analysis was well suited to examining the theoretical effect of independent variables, such as nurse manager ability leadership and support of nurses, on hospital outcomes such as patient safety cultures as

mediated by factors such as nurse-specific *coworker incivility* and *collective efficacy* because insufficient descriptive data were available to support an intervention to address these problems in the hospital (Hayes, 2013). The purpose of using path analyses was to help illuminate the role of mediating (i.e. *coworker incivility*) and moderating (i.e. *collective efficacy*) variables, among the independent variables within this study, on outcome variables to provide more guidance for future quantitative investigations to inform nurse interventions to improve hospital structures, processes, and outcomes (Shadish, Cook, & Campbell, 2002). Path analysis was most appropriate for this model because each variable is observable, as based on perception data measurement scales; therefore, these variables are not considered latent and appropriate for structural equation modeling (i.e. confirmatory analysis) (Hayes, 2013; W. Ke, personal communication, 2015).

Questions 9 - 12 required bootstrapping to assess for simple mediation. Bootstrapping is a resampling method in which the sample ( $N=212$ ) was conceptually a pseudo-population representing a broader population from which the sample was derived; given the large sample size resultant from this method, no assumptions about the shape of the sampling distribution of the statistic are necessary when using this technique to test for simple mediation (Preacher, Rucker, & Hayes, 2007). Questions 13 – 16 required determining a region of significance through the Johnson-Neyman technique to determine the degree to which the moderator variable moderates an indirect effect within in the model. The Johnson-Neyman (JN) technique is used when the moderator is continuous and is supported as having more merit than the pick-a-point approach as an alternative (Hayes, 2012).

## Description of Research Questions for Path Analysis

The following research questions for path analysis were based on the overarching question investigated within this dissertation: How do perceptions of hospital processes (i.e. *coworker incivility* and *collective efficacy*) influence perceptions of hospital structures (i.e. *nurse manager ability leadership and support of nurses* and *staffing and resource adequacy*) and outcomes (i.e. *missed nursing care* and *patient safety culture*) among staff registered nurses on in-patient hospital units considering data from the previous month? Therefore, the corresponding overarching research hypothesis was that *coworker incivility* has a direct mediating effect in the relationship between hospital structures and outcomes depending on the indirect moderating effect of *collective efficacy* perceptions.

**Research Question 1:** What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *coworker incivility* ( $Y_1$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_1' = a + bX_1$$

$Y_1'$  : Predicted value of *coworker incivility*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_1$ : Actual value of *nurse manager ability leadership and support of nurses*

**Research Question 2:** What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_2$ ) and *coworker incivility* ( $Y_1$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_1' = a + bX_2$$

$Y_1'$  : Predicted value of *coworker incivility*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_2$ : Actual value of *nurse manager ability leadership and support of nurses*

**Research Question 3:** What is the relationship between *coworker incivility* ( $X_3$ ) and *patient safety culture* ( $Y_2$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_2' = a + bX_3$$

$Y_2'$ : Predicted value of *patient safety culture*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_3$ : Actual value of *coworker incivility*

**Research Question 4:** What is the relationship between *coworker incivility* ( $X_3$ ) and *missed nursing care* ( $Y_3$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_3' = a + bX_3$$

$Y_3'$ : Predicted value of *missed nursing care*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_3$ : Actual value of *coworker incivility*

**Research Question 5:** What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *patient safety culture* ( $Y_2$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_2' = a + bX_1$$

$Y_2'$ : Predicted value of *patient safety culture*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_1$ : Actual value of *nurse manager ability leadership and support of nurses*

**Research Question 6:** What is the relationship between *staffing and resource adequacy* ( $X_2$ ) and *patient safety culture* ( $Y_2$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_2' = a + bX_2$$

$Y_2'$  : Predicted value of *patient safety culture*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_2$ : Actual value of *staffing and resource adequacy*

**Research Question 7:** What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *missed nursing care* ( $Y_3$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_3' = a + bX_1$$

$Y_3'$  : Predicted value of *missed nursing care*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_1$ : Actual value of *nurse manager ability leadership and support of nurses*

**Research Question 8:** What is the relationship between *staffing and resource adequacy* ( $X_2$ ) and *missed nursing care* ( $Y_3$ )? The answer to this non-directional research question was determined using simple linear regression.

$$Y_3' = a + bX_2$$

$Y_3'$  : Predicted value of *missed nursing care*

$a$ : Intercept constant

$b$ : Regression coefficient

$X_2$ : Actual value of *staffing and resource adequacy*

**Research Question 9:** Does *coworker incivility* ( $M$ ) mediate a relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *patient safety culture* ( $Y_1$ )? This question was answered by means of path analysis. This question is illustrated in Figure 3.2.

$$M = a_0 + a_1X_1 + r$$

$$Y_1' = b_0 + c'X_1 + b_1M + r$$

*M*: Coworker incivility as mediator  
*a*<sub>0</sub>: Intercept term  
*a*<sub>1</sub>: Unstandardized slope coefficient of *M* regressed on *X*<sub>1</sub>  
*b*<sub>0</sub>: Regression coefficient  
*b*<sub>1</sub>: Conditional coefficient of *Y* regressed on *M*  
*c*': Conditional coefficient of *Y* regressed on *X*  
*r*: Regression residual  
*X*<sub>1</sub>: Actual value of *nurse manager ability leadership and support of nurses*  
*Y*<sub>1</sub>': Predicted value of *patient safety culture*

The intercept terms *a*<sub>0</sub> and *b*<sub>0</sub> were included as well as the regression residual as expressed through *r*. Coefficients *a*<sub>1</sub> and *b*<sub>1</sub> are used to measure presence, strength, and significance of the indirect effect of *X*<sub>1</sub> on *Y*<sub>1</sub> through *M*. Bootstrapping was used to assess mediation (Preacher, Rucker, & Hayes, 2007).

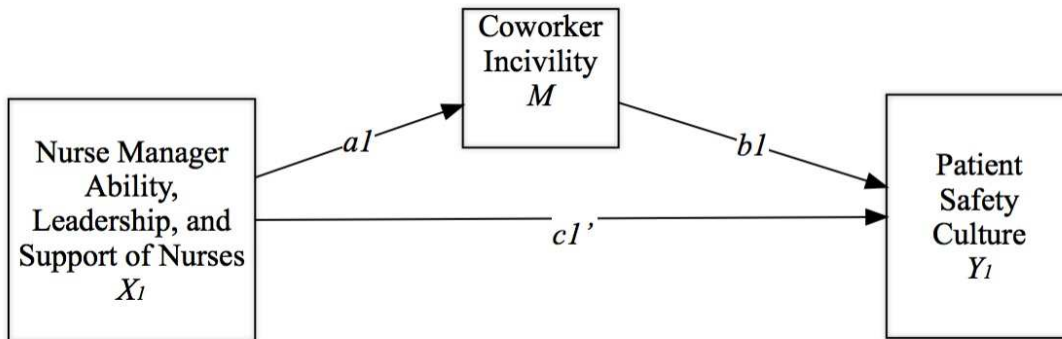


Figure 3.2. Simple mediation for question 9

**Research Question 10:** Does *coworker incivility (M)* mediate a relationship between *staffing and resource adequacy (X<sub>2</sub>)* and *patient safety culture (Y<sub>1</sub>)*? This question was answered by means of path analysis. This question is illustrated in Figure 3.3.

$$\begin{aligned}
 M &= a_0 + a_1X_2 + r \\
 Y_1' &= b_0 + c' X_2 + b_1M + r
 \end{aligned}$$

*M*: Coworker incivility as mediator  
*a*<sub>0</sub>: Intercept term  
*a*<sub>1</sub>: Unstandardized slope coefficient of *M* regressed on *X*<sub>1</sub>  
*b*<sub>0</sub>: Regression coefficient  
*b*<sub>1</sub>: Conditional coefficient of *Y* regressed on *M*  
*c*': Conditional coefficient of *Y* regressed on *X*  
*r*: Regression residual  
*X*<sub>2</sub>: Actual value of *staffing and resource adequacy*  
*Y*<sub>1</sub>': Predicted value of *patient safety culture*

The intercept terms *a*<sub>0</sub> and *b*<sub>0</sub> were included as well as the regression residual as expressed through *r*. Coefficients *a*<sub>2</sub> and *b*<sub>1</sub> were used to measure presence, strength, and significance of the indirect effect of *X*<sub>2</sub> on *Y*<sub>1</sub> through *M*. Bootstrapping was used to assess mediation (Preacher, Rucker, & Hayes, 2007).

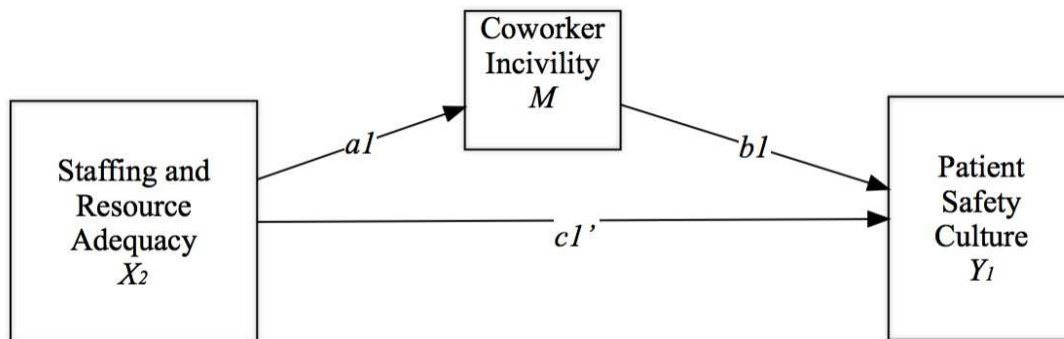


Figure 3.3. Simple mediation for question 10

**Research Question 11:** Does *coworker incivility (M)* mediate a relationship between *nurse manager ability, leadership, and support of nurses (X<sub>1</sub>)* and *missed nursing care (Y<sub>2</sub>)*? This question was answered by means of path analysis. This question is illustrated in Figure 3.4.

$$\begin{aligned}
 M &= a_0 + a_1X_1 + r \\
 Y_2' &= b_0 + c' X_1 + b_1M + r
 \end{aligned}$$



*M*: Coworker incivility as mediator  
*a*<sub>0</sub>: Intercept term  
*a*<sub>1</sub>: Unstandardized slope coefficient of *M* regressed on *X*<sub>1</sub>  
*b*<sub>0</sub>: Regression coefficient  
*b*<sub>1</sub>: Conditional coefficient of *Y* regressed on *M*  
*c*' : Conditional coefficient of *Y* regressed on *X*  
*r*: Regression residual  
*X*<sub>2</sub>: Actual value of *nurse manager ability, leadership, and support of nurses*  
*Y*<sub>2</sub>' : Predicted value of *missed nursing care*

The intercept terms *a*<sub>0</sub> and *b*<sub>0</sub> were included as well as the regression residual as expressed through *r*. Coefficients *a*<sub>1</sub> and *b*<sub>2</sub> were used to measure presence, strength, and significance of the indirect effect of *X* on *Y* through *M*. Bootstrapping was used to assess mediation (Preacher, Rucker, & Hayes, 2007).

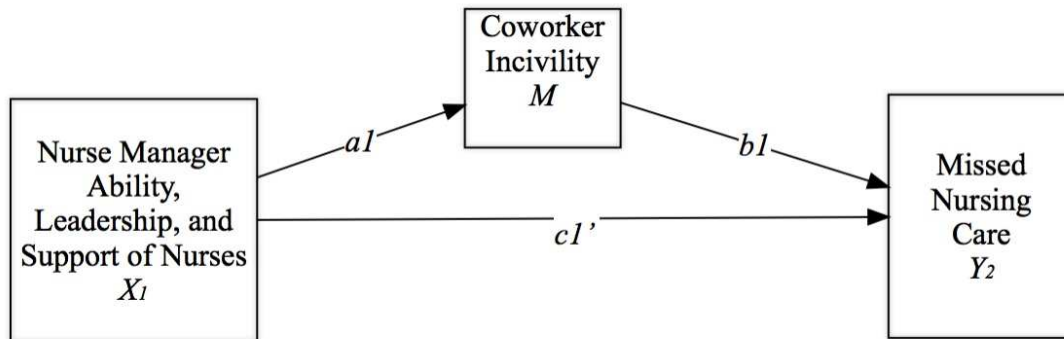


Figure 3.4. Simple mediation for question 11

**Research Question 12:** Does *coworker incivility (M)* mediate a relationship between *staffing and resource adequacy (X<sub>2</sub>)* and *missed nursing care (Y<sub>2</sub>)*? This question was answered by means of path analysis. This question is illustrated in Figure 3.2.

$$\begin{aligned}
 M &= a_0 + a_1 X_2 + r \\
 Y_2' &= b_0 + c' X_2 + b_1 M + r
 \end{aligned}$$

*M*: Coworker incivility as mediator  
*a*<sub>0</sub>: Intercept term  
*a*<sub>1</sub>: Unstandardized slope coefficient of *M* regressed on *X*<sub>1</sub>  
*b*<sub>0</sub>: Regression coefficient  
*b*<sub>1</sub>: Conditional coefficient of *Y* regressed on *M*  
*c*': Conditional coefficient of *Y* regressed on *X*  
*r*: Regression residual  
*X*<sub>2</sub>: Actual value of *staffing and resource adequacy*  
*Y*<sub>2</sub>': Predicted value of *missed nursing care*

The intercept terms *a*<sub>0</sub> and *b*<sub>0</sub> were included as well as the regression residual as expressed through *r*. Coefficients *a*<sub>2</sub> and *b*<sub>2</sub> were used to measure presence, strength, and significance of the indirect effect of *X* on *Y* through *M*. Bootstrapping was used to assess mediation (Preacher, Rucker, & Hayes, 2007).

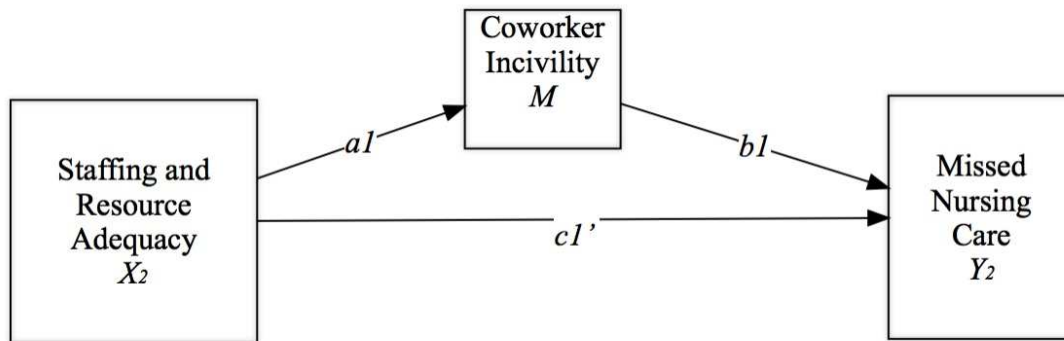


Figure 3.5. Simple mediation for question 12

**Research Question 13:** Does *coworker incivility (M)* mediate a relationship between *nurse manager ability, leadership, and support of nurses (X<sub>1</sub>)* and *patient safety culture (Y<sub>1</sub>)* as moderated by *collective efficacy (W)*? This question was answered by means of path analysis and is depicted in Figure 3.3.

$$f(\hat{\theta}|W) = (\hat{a}_1 + \hat{a}_3W)(\hat{b}_1 + \hat{b}_3W)$$

$f(\hat{\theta}|W)$ : Predicted effect of mediation-moderation equation  
 $\hat{a}_1$ : Predicted slope coefficient of  $M$  regressed on  $X_i$   
 $\hat{a}_3$ : Predicted slope coefficient of  $W$  regressed on  $X_i$   
 $W$ : *Collective efficacy* as moderator  
 $\hat{b}_1$ : Predicted correlational coefficient  
 $b_3$ : Predicted correlational coefficient of  $W$  regressed on  $Y_i$

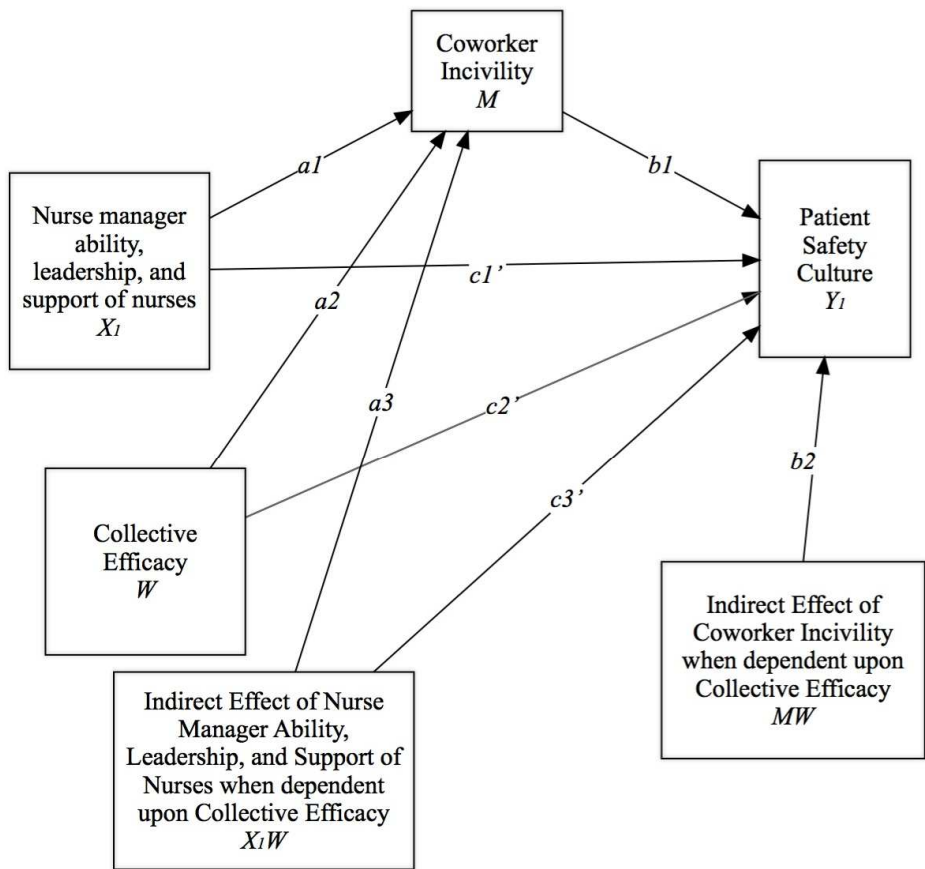


Figure 3.6. Mediation-Moderation for Question 13

**Research Question 14:** Does *coworker incivility* ( $M$ ) mediate a relationship between *staffing and resource adequacy* ( $X_2$ ) and *patient safety culture* ( $Y_1$ ) as moderated by *collective efficacy* ( $W$ )? This question was answered by means of path analysis and is depicted in Figure 3.3.

$$f(\hat{\theta}|W) = (\hat{a}_2 + \hat{a}_3W)(\hat{b}_1 + \hat{b}_3W)$$

$f(\hat{\theta}|W)$ : Predicted effect of mediation-moderation equation  
 $\hat{a}_2$ : Predicted slope coefficient of  $M$  regressed on  $X_2$   
 $\hat{a}_3$ : Predicted slope coefficient of  $W$  regressed on  $X_2$   
 $W$ : *Collective efficacy* as moderator  
 $\hat{b}_1$ : Predicted correlational coefficient  
 $b_3$ : Predicted correlational coefficient of  $W$  regressed on  $Y_1$

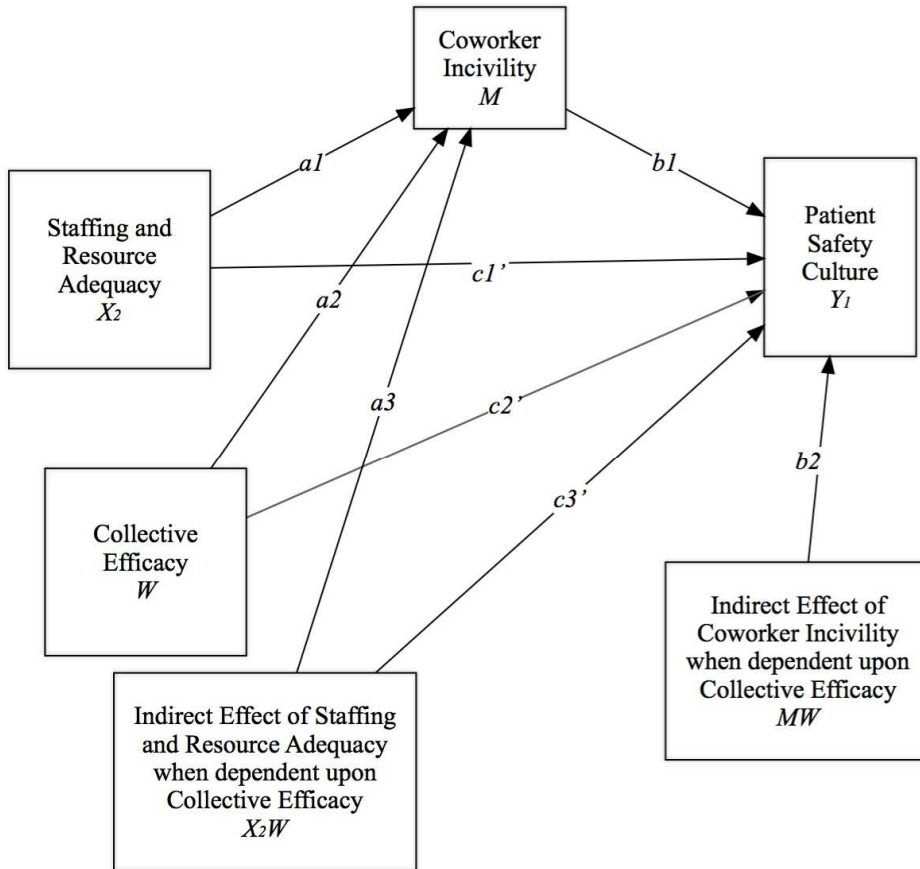


Figure 3.7. Mediation-Moderation for Question 14

**Research Question 15:** Does *coworker incivility* ( $M$ ) mediate a relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ) and *missed nursing care* ( $Y_2$ ) as moderated by *collective efficacy* ( $W$ )? This question was answered by means of path analysis and is depicted in Figure 3.3.

$$f(\hat{\theta}|W) = (\hat{a}_1 + \hat{a}_3W)(\hat{b}_2 + \hat{b}_4W)$$

$f(\hat{\theta}|W)$ : Predicted effect of mediation-moderation equation

$\hat{a}_1$ : Predicted slope coefficient

$\hat{a}_3$ : Predicted slope coefficient of  $W$  regressed on  $X_1$

$W$ : *Collective efficacy* as moderator

$\hat{b}_2$ : Predicted correlational coefficient

$b_4$ : Predicted correlational coefficient of  $W$  on  $Y_2$

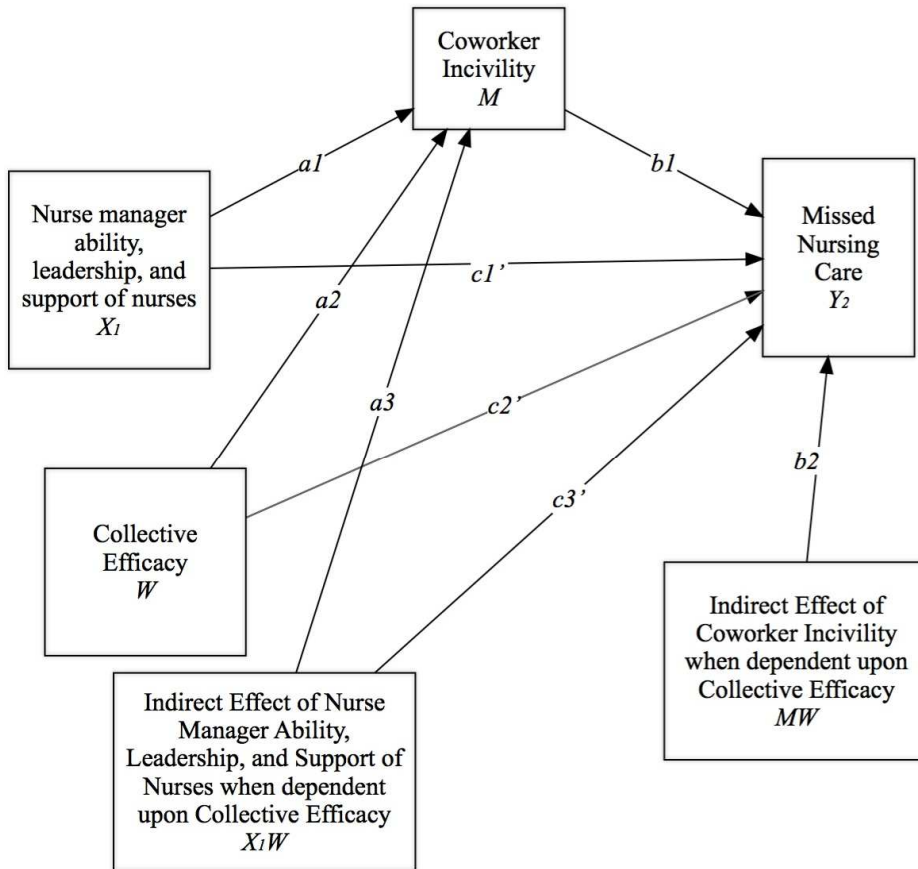


Figure 3.8. Mediation-moderation for question 15

**Research Question 16:** Does *coworker incivility* ( $M$ ) mediate a relationship between *staffing and resource adequacy* ( $X_2$ ) and *missed nursing care* ( $Y_2$ ) as moderated by *collective efficacy* ( $W$ )? This question was answered by means of path analysis and is depicted in Figure 3.3.

$$f(\hat{\theta}|W) = (\hat{a}_2 + \hat{a}_3W)(\hat{b}_2 + \hat{b}_4W)$$

$f(\hat{\theta}|W)$ : Predicted effect of mediation-moderation equation  
 $\hat{a}_2$ : Predicted slope coefficient  
 $\hat{a}_3$ : Predicted slope coefficient of  $W$  regressed on  $X_2$   
 $W$ : *Collective efficacy* as moderator  
 $\hat{b}_2$ : Predicted correlational coefficient  
 $b_4$ : Predicted correlational coefficient of  $W$  on  $Y_2$

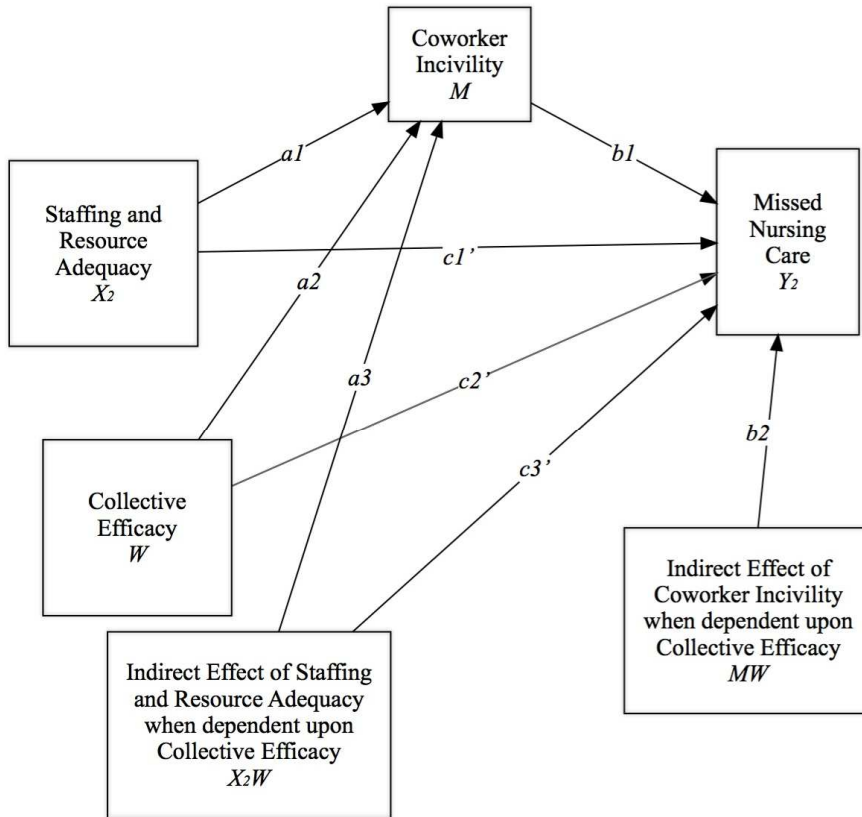


Figure 3.9. Mediation-moderation for question 16

**Research Question 17:** What is the relationship between *nurse manager ability leadership and support of nurses ( $X_1$ )*, *staffing and resource adequacy ( $X_2$ )*, and *coworker incivility ( $X_3$ )* on *patient safety culture ( $Y_1$ )*? This question was answered by using hierarchical regression and is depicted in Figure 3.10.

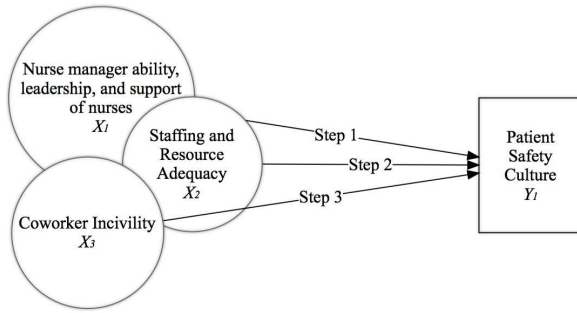


Figure 3.10. Hierarchical regression for question 17

**Research Question 18:** What is the relationship between *nurse manager ability leadership and support of nurses* ( $X_1$ ), *staffing and resource adequacy* ( $X_2$ ), and *coworker incivility* ( $X_3$ ) on *missed nursing care* ( $Y_2$ )? This question was answered by using hierarchical regression and is depicted in Figure 3.11.

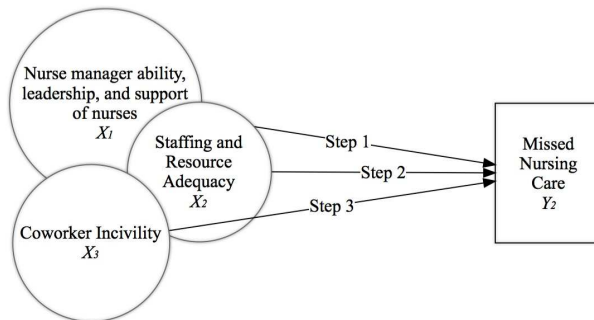


Figure 3.11. Hierarchical regression for question 18

### Limitations

One limitation of this study is that, since it required multiple variables to investigate hospital structures, processes, and outcomes, the survey used was lengthy at 117-questions. Participants were registered nurses active in a hospital organization who provide bedside care. Surveying participants at length may be perceived as a competing demand; thus, the temptation

to leave the survey unfinished was present and quite likely given potential circumstances. Therefore, efforts were made to clearly articulate the time required to complete the survey and encourage participants to choose a time when they may not be interrupted for 20-25 minutes to complete an online survey of 117 questions. Efforts included encouraging potential participants in person during recruitment at the 5 hospital locations as well as suggesting for participants to take the survey at home in the emailed informed consent.

Another critical limitation to this study was that all variables were registered nurse perceptions collected as self-reported questionnaire data (Sexton et al., 2006; Kalisch, 2009; Kelloway et al., 1999 as cited by Spence Laschinger et al., 2009). Results were contingent upon the subject reporting accurate and truthful information; therefore, there was an inherent concern about validity of the data due to the nature of self-report. Generalizability of data was limited to registered nurses in hospital organizations since the researcher did not measure data about registered nurse perceptions of other work environments outside the hospital.

In addition, a non-experimental descriptive research design offers much less support for causal inferences as compared to experimental methods (Polit & Beck, 2012). Groups are formed by self-selection rather than by randomization; therefore, preexisting differences may explain the results (Polit & Beck, 2012). Individuals who perceive hospital structures, processes, and outcomes as problematic to the nursing work environment may have volunteered to participate in disproportionate numbers in comparison to individuals who do not perceive such problems; thus, another potential for selection bias exists. This could be problematic in regard to external validity (e.g. interaction of selection and treatment). Other confounding variables in addition to nurse staffing were involved which the researcher is not controlling for and is a limitation of this study. It is acknowledged that all of the aforementioned limitations may threaten external and internal



validity; however, other methods of quantitative study design were not feasible to perform (e.g. random sampling or conducting an experiment). The risks to internal and external validity remain, however. The disclosure of all limitations in any future publications of this proposed research will be done in order to provide accurate, ethical data reporting in nursing science.

### **Summary of Chapter**

In conclusion, data were collected and analyzed using the measurement scales as described in this chapter with adherence to ethical scientific principles. Research study design, sampling, participant recruitment, data collection, data analysis, and research questions were also discussed. The next chapter will contain results for each of the research questions posed in this study.

## Chapter Four

### Results

The purpose of this dissertation was to investigate the relationships among hospital structures, hospital processes, and hospital outcomes using Donabedian's (1980) conceptual framework relative to hospital patient quality outcomes. Specifically, the aim of this study was to develop an understanding of registered nurse perceptions of hospital processes (i.e. *coworker incivility* and *collective efficacy*) and how these perceptions influence perceptions of hospital structures (i.e. *nurse manager ability leadership and support of nurses* and *staffing and resource adequacy*) and outcomes (i.e. *missed nursing care* and *patient safety culture*).

The first 8 questions were developed from this model to gain understanding of direct linear correlations between (1) *nurse manager ability, leadership, and support of nurses* and *coworker incivility*, (2) *staffing and resource adequacy* and *coworker incivility*, (3) *coworker incivility* and *patient safety culture*, (4) *coworker incivility* and *missed nursing care*, (5) *nurse manager ability, leadership, and support of nurses* and *patient safety culture*, (6) *staffing and resource adequacy* and *patient safety culture*, (7) *nurse manager ability, leadership, and support of nurses* and *missed nursing care*, (8) *staffing and resource adequacy* and *missed nursing care*.

Questions 9 through 12 were developed from the model to gain an understanding of the mediating influence of *coworker incivility* on (9) *nurse manager ability, leadership, and support of nurses* and *patient safety culture*, (10) *staffing and resource adequacy* and *patient safety culture*, (11) *nurse manager ability, leadership, and support of nurses* and *missed nursing care*, (12) *staffing and resource adequacy* and *missed nursing care*. Questions 13 through 16 were developed to gain understanding of how *coworker incivility* mediates the following variables when moderated by *collective efficacy* (13) *nurse manager ability, leadership, and support of*

*nurses and patient safety culture, (14) staffing and resource adequacy and patient safety culture, (15) nurse manager ability, leadership, and support of nurses and missed nursing care, (16) staffing and resource adequacy and missed nursing care.*

Questions 17 and 18 were developed to gain understanding of additive relationships among (17) *nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, and coworker incivility on patient safety culture*, and (18) *nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, and coworker incivility on missed nursing care*. Refer to Figure 4.1 for a depiction of each research question in a single model.

The results of this descriptive, correlational study are presented in this chapter. Sample characteristics are described as well as results of research questions.

### **Sample Characteristics**

The sample was limited to registered nurses currently employed at the bedside in the hospital setting whose primary role is that of a direct bedside care provider not in a nurse unit management position. Descriptive findings about continuous variables are presented in Table 4.1. Percentages and frequencies of participants by age range are presented in Figure 4.1 and Table 4.2. Percentages and frequencies of participants by years of experience are presented in Figure 4.2 and Table 4.3. The typical participant in this survey was a 26 year-old female working full time with 1-2 years of RN experience as a hospital staff nurse. There was a high percentage (i.e. 34.4%) of younger nurses at or under the age of 30 in this sample in that 34 percent of participants were 66 to 70 years of age, and one who was 74 to 75 years of age.

**STRUCTURES & PROCESSES**

**OUTCOMES**

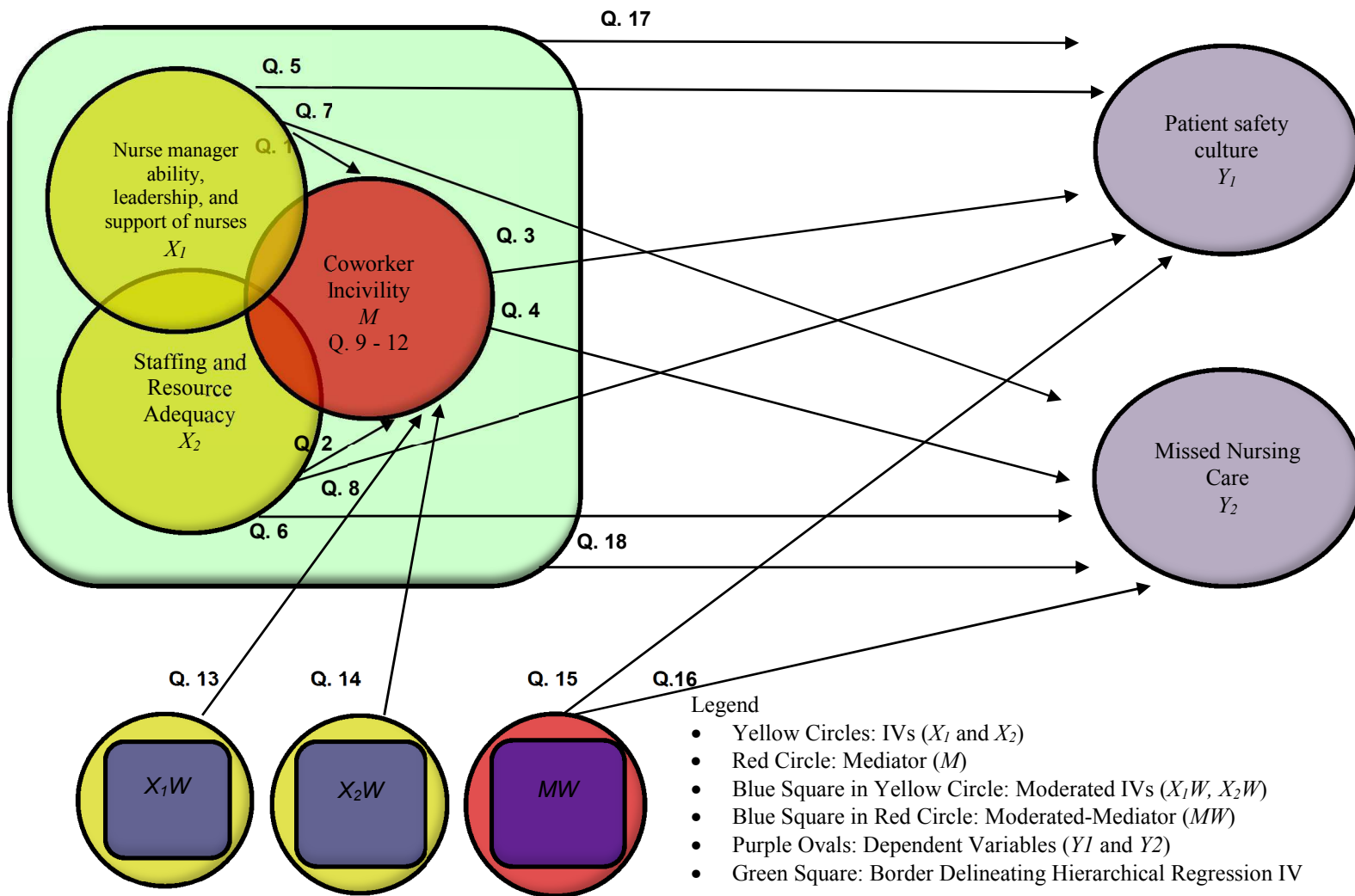


Figure 4.1. Study variables and relationships within Donabedian's (1980) conceptual framework (Q. 1-18)

Over half of the sample had 5 years of experience or less on the unit worked; 39.1 percent had 1 to 2 years of experience, and the cumulative percentage for those with 5 years of experience or less was 61.9. Descriptive findings about categorical variables of this sample are presented in Table 4.4. Descriptive findings for each study variable are presented in Table 4.5. Pearson-product moment correlations between scales and subscales in path analysis are presented in Table 4.6.

Table 4.1

*Mean, Standard Deviation, Minimum, and Maximum for Total Sample*

| Variables              | N   | Mean  | SD    | Median | Mode | CI             |
|------------------------|-----|-------|-------|--------|------|----------------|
| Age                    | 159 | 38.37 | 12.32 | 37     | 26   | (36.46, 40.27) |
| Years on Unit as an RN | 202 | 5.85  | 6.32  | 3.5    | 1    | (4.95, 6.71)   |

*Note: n values vary due to missing data*

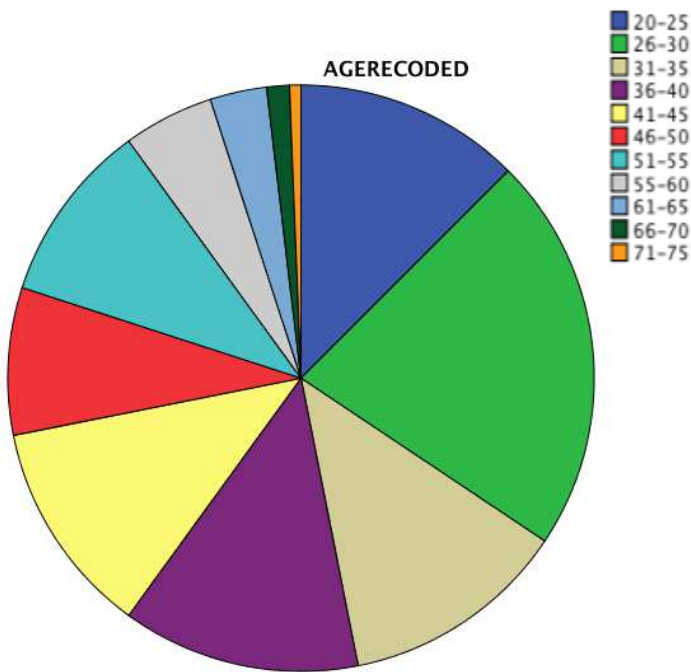


Figure 4.2. Diagram for % of Age

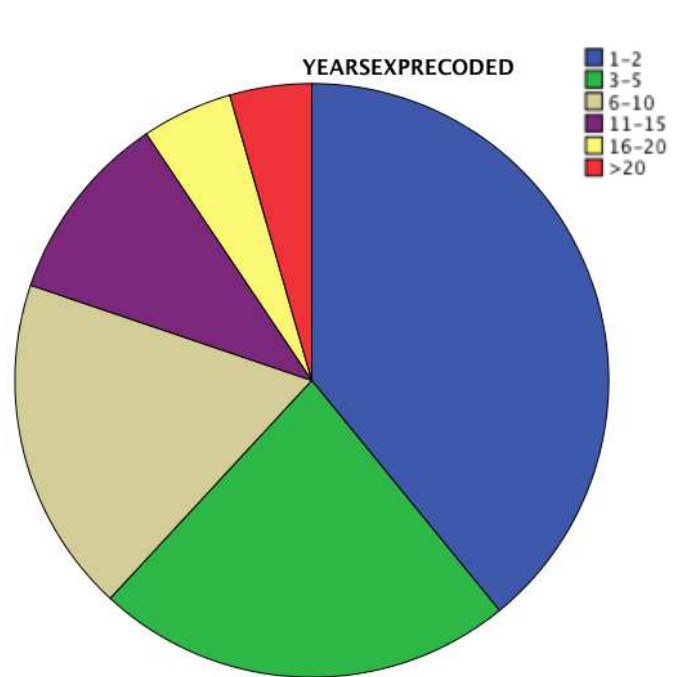


Figure 4.3 Diagram for % Years of Experience

Table 4.2

*Percentages and Frequencies of Participants by Age Range*

| <b>Age Range</b> | <b>Frequency</b> | <b>Percent</b> | <b>Valid Percent</b> | <b>Cumulative Percent</b> |
|------------------|------------------|----------------|----------------------|---------------------------|
| <b>20-25</b>     | 20               | 9.4            | 12.5                 | 12.5                      |
| <b>26-30</b>     | 35               | 16.5           | 21.9                 | 34.4                      |
| <b>31-35</b>     | 20               | 9.4            | 12.5                 | 46.9                      |
| <b>36-40</b>     | 21               | 9.9            | 13.1                 | 60.0                      |
| <b>41-45</b>     | 19               | 9.0            | 11.9                 | 71.9                      |
| <b>46-50</b>     | 13               | 6.1            | 8.1                  | 80.0                      |
| <b>51-55</b>     | 16               | 7.5            | 10.0                 | 90.0                      |
| <b>56-75</b>     | 16               | 7.5            | 10.0                 | 100.0                     |
| <b>Total</b>     | 160              | 75.5           | 100                  |                           |
| <b>Missing</b>   | 52               | 24.5           |                      |                           |
| <b>Total</b>     | 212              |                |                      |                           |

Table 4.3

*Percentages and Frequencies of Participants by Years of Experience*

| <b>Yrs. Exp. Unit</b> | <b>Frequency</b> | <b>Percent</b> | <b>Valid Percent</b> | <b>Cumulative Per</b> |
|-----------------------|------------------|----------------|----------------------|-----------------------|
| <b>1-2</b>            | 79               | 37.3           | 39.1                 | 39.1                  |
| <b>3-5</b>            | 46               | 21.7           | 22.8                 | 61.9                  |
| <b>6-10</b>           | 37               | 17.5           | 18.3                 | 80.2                  |
| <b>11-15</b>          | 21               | 9.9            | 10.4                 | 90.6                  |
| <b>16-20</b>          | 10               | 4.7            | 5.0                  | 95.5                  |
| <b>21+</b>            | 9                | 4.2            | 4.5                  | 100.0                 |
| <b>Total</b>          | 202              | 95.3           | 100.0                |                       |
| <b>Missing</b>        | 10               | 4.7            |                      |                       |
| <b>Total</b>          | 212              |                |                      |                       |

Table 4.4

*Number and Percent for Categorical Variables*

| Variables                                |                               | N   | %    | Valid % |
|--|-------------------------------|-----|------|---------|
| Gender<br>(n = 212)                      | Male                          | 17  | 8.0  | 8.0     |
|  | Female                        | 195 | 92.0 | 92.0    |
| Unit Specialty                           | Medical Surgical              | 68  | 32.1 | 32.1    |
|  | Critical and Progressive Care | 62  | 29.2 | 29.1    |
|  | Emergency                     | 15  | 7.1  | 7.1     |
|  | Mother-Baby                   | 34  | 16.0 | 16.0    |
|  | Perioperative                 | 33  | 15.6 | 15.6    |
| Employment<br>Status                     | Full Time                     | 199 | 93.9 | 93.8    |
|  | Part Time                     | 10  | 4.7  | 4.4     |
|  | PRN                           | 3   | 1.4  | 1.8     |
| Highest Level of<br>Nursing<br>Education | Diploma                       | 3   | 1.4  | 1.3     |
|  | ADN                           | 43  | 20.3 | 19.5    |
|  | BSN                           | 153 | 72.2 | 73.0    |
|  | MSN                           | 13  | 6.1  | 6.2     |
| Highest Level of<br>Nursing Licensure    | RN                            | 212 | 100  | 100     |

*Note: n values vary due to missing data*

Table 4.5

*Descriptive Statistics for Each Study Variable*

|   | Mean  | Median | Mode | Range | SD   | CI             |
|---|-------|--------|------|-------|------|----------------|
| Nurse Manager Ability,<br>Leadership, and Support | 15.75 | 16     | 15   | 14    | 2.85 | (15.36, 16.13) |
| Staffing and Resource<br>Adequacy                 | 11.72 | 12     | 12   | 11    | 2.24 | (11.43, 12.04) |
| Coworker Incivility                               | 10.24 | 9      | 7    | 19.6  | 3.78 | (9.74, 10.76)  |
| Collective Efficacy                               | 34.79 | 35     | 42   | 24    | 5.44 | (34.05, 35.52) |
| Missed Nursing Care                               | 21.06 | 20     | 16   | 53    | 9.17 | (19.85, 22.24) |
| Patient Safety Culture                            | 11.34 | 11.5   | 9    | 12    | 2.47 | (11.00-11.67)  |

Table 4.6

*Pearson Product-Moment Correlations between scales and subscales in path analysis*

|     | Nurse Manager Ability, Leadership and Support of Nurses Subscale | Staffing and Resource Adequacy Subscale | Workplace Incivility Scale | Collective Efficacy Beliefs Scale | Acute Care Missed Nursing Care Subscale | Patient Safety Culture Subscale |
|-----|--|---|----------------------------|-----------------------------------|---|---------------------------------|
|     | Nurse Manager ability, leadership and support of nurses Subscale | 1                                       |                            |                                   |   |                                 |
| 113 | Staffing and Resource Adequacy Subscale                          | .50**                                   | 1                          |                                   |   |                                 |
|     | Workplace Incivility Scale                                       | -.38**                                  | -.28**                     | 1                                 |   |                                 |
|     | Collective Efficacy Beliefs Scale                                | .48**                                   | .51**                      | -.36                              | 1                                       |                                 |
|     | Acute Care Missed Nursing Care Subscale                          | -.10                                    | -.15*                      | .06                               | -.19**                                  | 1                               |
|     | Patient Safety Culture Subscale                                  | .36**                                   | .30**                      | -.19**                            | .27**                                   | -.07                            |

\*\*Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tail)



## Research Questions

### Research Question #1:

*What is the relationship between nurse manager ability, leadership, and support of nurses and coworker incivility?* Simple linear regression was used to determine how perceptions of *coworker incivility* are associated with perceptions of *nurse manager ability, leadership, and support of nurses*. A significant regression equation was obtained ( $F(1, 210) = 35.62, p < .01$ ), with an  $R^2$  of .14. Participants' predicted perceptions of *coworker incivility* were equal to  $5.35 +$   $-.55$  (LEADERSHIP) when leadership is measured on a Likert-type scale. If, for example, a participant answered "4" on the 0 – 6 scale for *nurse manager ability, leadership, and support of nurses*, then *coworker incivility* would be predicted as  $5.35 + (-.55)(4) = 3.15$  on the Likert-scale in proportion to *coworker incivility*. Greater scores of *nurse manager ability, leadership, and support of nurses* are predictive of lesser scores of *coworker incivility*.

### Research Question #2:

*What is the relationship between staffing and resource adequacy and coworker incivility?* The relationship between *staffing and resource adequacy* and *coworker incivility* was determined using simple linear regression. A significant regression equation was obtained ( $F(1, 210) = 17.44, p < .01$ ), with an  $R^2$  of .08. Participants' predicted perceptions of *coworker incivility* are equal to  $4.69 +$   $-.45$  (STAFFING) when staffing is measured on a Likert-type scale. If, for example, a participant answered "2" on the 0 – 4 scale for *staffing and resource adequacy*, then *coworker incivility* would be predicted as  $4.69 + (-.45)(2) = 3.79$  on the Likert-scale in proportion to *coworker incivility*. Lesser *staffing and resource adequacy* scores are predictive of greater scores for *coworker incivility*.

**Research Question #3:**

*What is the relationship between coworker incivility and patient safety culture?* The relationship between total scores of *coworker incivility* and *patient safety culture* was determined using simple linear regression. A significant regression equation was found ( $F(1, 210) = 7.90, p < .01$ ), with an  $R^2$  of .04. Participants' predicted perceptions of patient safety culture are equal to  $3.76 + -.13$  (COWORKER INCIVILITY) when measured on a Likert-type scale. If, for example, a participant answered "2" on the 0 – 6 scale for *coworker incivility*, then *patient safety culture* perceptions would be predicted as  $3.76 + (-.13)(2) = 3.5$  on the Likert-scale in proportion to *coworker incivility* perceptions. Lesser scores of coworker incivility are predictive of greater scores on patient safety culture.

**Research Question #4:**

*What is the relationship between coworker incivility and missed nursing care?* The relationship between total scores of *coworker incivility* and *missed nursing care* was determined using simple linear regression. The regression equation was not significant ( $F(1, 210) = .88, p > 0.01$ ), with an  $R^2$  of .01. *Coworker incivility* is not a significant predictor of *missed nursing care*.

**Research Question #5:**

*What is the relationship between nurse manager ability, leadership, and support of nurses and patient safety culture?* The relationship between total scores of *nurse manager ability, leadership, and support of nurses* and *patient safety culture* was determined using simple linear regression. A significant regression equation was obtained ( $F(1, 210) = 31.51, p < .01$ ), with an  $R^2$  of .13. Participants' perceptions of *patient safety culture* were equal to  $1.92 + .36$  (LEADERSHIP). For example, if *nurse manager ability, leadership, and support of nurses* was

rated “4,” then *patient safety culture* would equal  $1.92 + (.36)(4) = 3.36$ . Greater scores of *nurse manager ability, leadership, and support* are predictive of greater scores of *patient safety culture*.

**Research Question #6:**

*What is the relationship between staffing and resource adequacy and patient safety culture?* The relationship between *staffing and resource adequacy* and *patient safety culture* was determined using simple linear regression. A significant regression equation was obtained ( $F(1, 210) = 20.73, p < 0.01$ ), with an  $R^2$  of .09. Participants’ perceptions of *patient safety cultures* were equal to  $2.20 + .34$  (STAFFING). For example, if *staffing and resource adequacy* perceptions was rated “4,” then *patient safety culture* perceptions would equal  $2.20 + (.34)(4) = 3.56$ . Greater scores of *staffing and resource adequacy* are predictive of greater scores about perceptions of *patient safety culture*.

**Research Question #7:**

*What is the relationship between nurse manager ability, leadership, and support of nurses and missed nursing care?* The relationship between *nurse manager ability, leadership, and support of nurses* and *missed nursing care* was determined using simple linear regression. The regression equation was not statistically significant ( $F(1, 210) = 1.93, p < 0.01$ ), with an  $R^2$  of 0.01. *Nurse manager ability, leadership, and support of nurses* was not a significant predictor of *missed nursing care*.

**Research Question #8:**

*What is the relationship between staffing and resource adequacy and missed nursing care?* The relationship between *staffing and resource adequacy* and *missed nursing care* was determined using simple linear regression. A clinically significant regression equation was not found ( $F(1, 210) = 4.81, p < 0.05$ ) as evident by the small  $R^2$  value of 0.02. Participants’

predicted perceptions of staffing and resource adequacy were equal to  $5.99 + -.44$  (STAFFING). For example, if staffing and resource adequacy were rated “4,” then missed nursing care could be predicted as equal to  $5.99 + (-.44)(4) = 4.23$ . The increase in staffing to difference made on predicting missed nursing care is not clinically significant as demonstrated by this regression equation.

**Research Question #9:**

*Does coworker incivility (M) mediate a relationship between nurse manager ability, leadership, and support of nurses (X<sub>1</sub>) and patient safety culture (Y<sub>1</sub>)?* The relationship of coworker incivility as a mediator influencing leadership and patient safety culture was calculated using Hayes’ (2014) PROCESS macro for SPSS. Model number 4, as shown in Figure 4.4 was selected in PROCESS using 10,000 bootstrapping samples, with a CI of 95%.

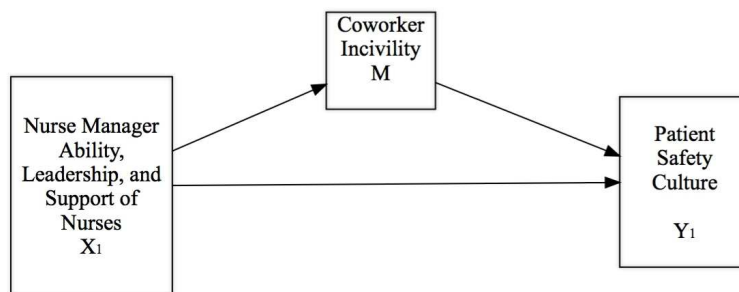


Figure 4.4. Conceptual Diagram for Question 9 Using Model 4 from PROCESS

As shown in Figure 4.5, Path *a* is significant  $t(1252) = -14.57$ , coefficient  $a = -.55$ ,  $p < 0.05$ . The significance of path *a* means that *nurse manager ability, leadership, and support of nurses (X<sub>1</sub>)* and *coworker incivility (M)* together predict *patient safety culture (Y<sub>1</sub>)*. The model summary for the relationship between nurse manager ability, leadership, and support of nurses

( $X_1$ ) and coworker incivility ( $M$ ) is  $F(1,1252) = 212.24, p < 0.01, R^2 = 14.5\%$ . Going further, in path  $b$ , *coworker incivility* ( $M$ ) predicts *patient safety culture* ( $Y_1$ ):  $t(1252) = 18.38$ , coefficient  $-.04, p < 0.05$ . The total indirect model summary is:  $F(2, 1251) = 95.45, p < 0.00, R^2 = 13.2\%$ . Given these results, *nurse manager ability, leadership, and support of nurses* ( $X_1$ ) still predicts *patient safety culture* ( $Y_1$ ) in the model estimation without inclusion of the mediating variable because  $c$ , the indirect (i.e. total) effect, is not greater than  $c'$ , the direct effect. For example,  $c' = .34, t(1251) = 11.88$ , and  $c$  is  $.02$  as calculated using PROCESS; therefore, since  $c$  is not greater than  $c'$ , it can be inferred from this sample that mediation through coworker incivility is not required for a statistically significant relationship to be present between *nurse manager ability, leadership, and support of nurses* ( $X_1$ ) and *patient safety culture* ( $Y_1$ ). Further, the direct effect between nurse manager ability, leadership, and support of nurses without coworker incivility is significant at  $p < .01$ . The Sobel test statistic indicates a statistically significant effect of the mediation model ( $Z = 2.01, p < .05$ ) (Sobel, 1982). However, the Kappa squared test indicates that there is a small difference ( $\kappa^2 = .02$ ) (Preacher & Kelley, 2011); therefore, the significance of the Sobel test statistic is not meaningful as an indicator for mediation. Refer to Table 4.7 for a summary of the model represented within this question.

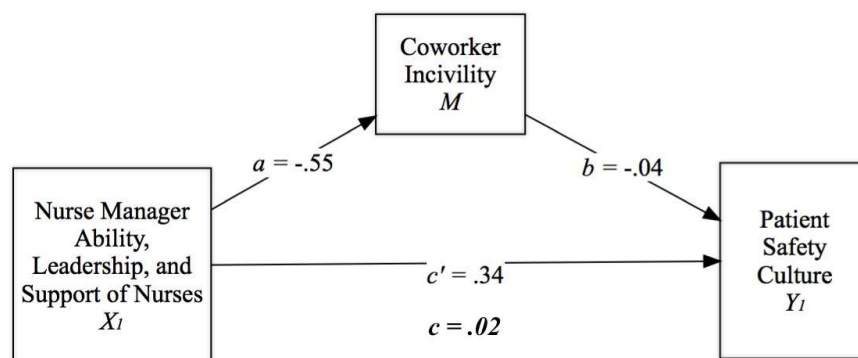


Figure 4.5. Coefficients for research question 9.

### Research Question #10:

Does coworker incivility ( $M$ ) mediate a relationship between staffing and resource adequacy ( $X_2$ ) and patient safety culture ( $Y_1$ )? The relationship of coworker incivility as a mediator influencing staffing and resource adequacy and patient safety culture was determined using Hayes' (2014) PROCESS macro for SPSS. Model number 4 was selected in PROCESS using 10,000 bootstrapping samples, with a CI of 95%, as shown in Figure 4.5.

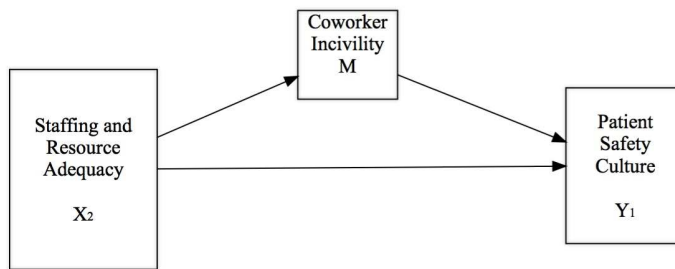


Figure 4.6. Conceptual Diagram for Question 10 Using Model 4 from PROCESS

As shown in Figure 4.6, path  $a$  representing a relationship between *staffing and resource adequacy* ( $X_2$ ) and *coworker incivility* ( $M$ ) is significant  $t(1258) = 31.10, p < .01$ , coefficient  $a$  is  $-.45$ . The model summary between *staffing and resource adequacy* and *coworker incivility* is:  $F(1, 1258) = 103.90, p < .01, R^2 = 8\%$ . Path  $b$  representing the relationship between *coworker incivility* ( $M$ ) and *patient safety culture* ( $Y_1$ ) is significant,  $t(1257) = 71.30, p < .01, -.08$ . The total indirect effect of *coworker incivility* between *staffing and patient safety culture* is  $F(2, 1257) = 71.30, p < .00$ . The direct effect path  $c'$  is  $.30, t(2, 1257) = 9.59, p < 0.01$ . Path  $c$ , representing the effect of *staffing and resource adequacy* ( $X_2$ ) and *coworker incivility* ( $M$ ) together on *patient safety culture* ( $Y_1$ ), is  $.04$ . Path  $c$  was calculated with PROCESS and is not greater than  $c'$ . Though there is a relationship between *staffing and resource adequacy* ( $X_2$ ) and

*coworker incivility* (DV), as well as a relationship between *coworker incivility* (IV) and *patient safety culture* (DV), there is not full or partial mediation present that is necessary for a relationship to exist between staffing and resource adequacy and patient safety culture. The Sobel test statistic indicates a statistically significant effect of the mediation model ( $Z = 3.91, p < .01$ ) (Sobel, 1982). However, the Kappa squared test indicates that there is a small difference ( $\kappa^2 = .03$ ) (Preacher & Kelley, 2011); therefore, the significance of the Sobel test statistic is not meaningful as an indicator for mediation. Refer to Figure 4.4 for a diagram of coefficients for this question. Refer to Table 4.7 for a summary of the model represented within this question.

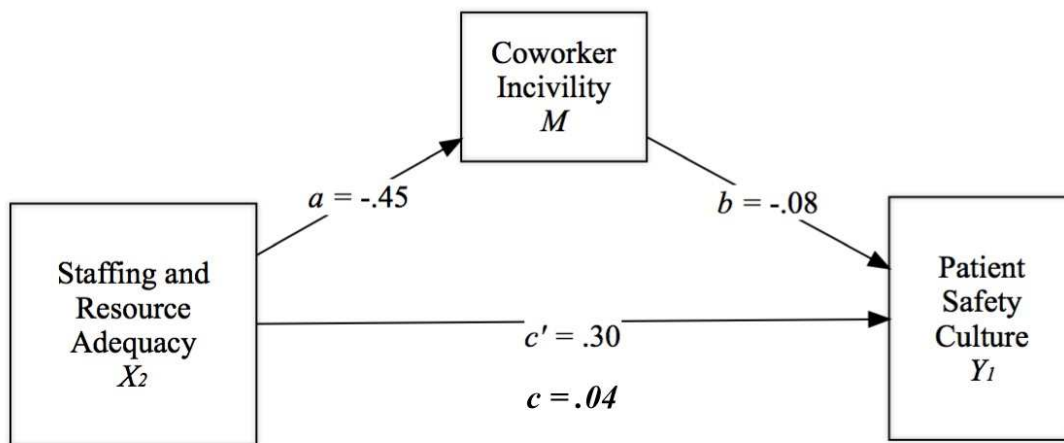


Figure 4.7. Coefficients for research question 10.

### Research Question #11:

*Does coworker incivility (M) mediate a relationship between nurse manager ability, leadership, and support of nurses (X<sub>1</sub>) and missed nursing care (Y<sub>2</sub>)? The relationship of coworker incivility as a mediator influencing nurse manager ability, leadership, and support of nurses and missed nursing care (Y<sub>2</sub>) was calculated using Hayes' (2014) PROCESS macro for*

SPSS. Model number 4 was selected for analysis of this question in PROCESS using 10,000 bootstrapping samples, with a CI of 95%, as shown in Figure 4.8.

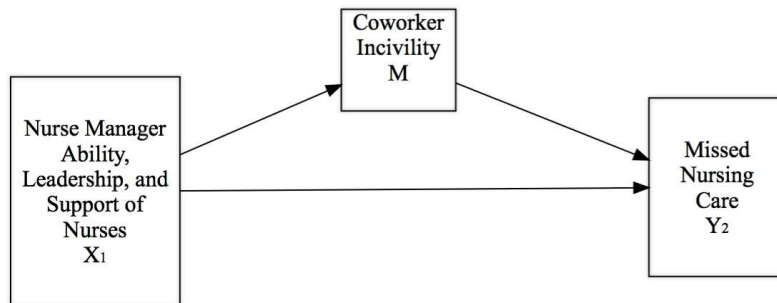


Figure 4.8. Conceptual Diagram for Question 11 Using Model 4 from PROCESS

Path *a*, which represented a relationship between *nurse manager ability, leadership, and support of nurses* ( $X_1$ ) and *coworker incivility* ( $M$ ) is significant:  $t(1238) = 208.59, p < .01$ , coefficient  $a = -.55$ . The model summary for the relationship between nurse manager ability, leadership, and support of nurses without the mediating effect of coworker incivility is:  $F(1, 1238) = 208.59, p < .01, R^2 = 14\%$ . The coefficient for path *b*, which represents a relationship between *coworker incivility* ( $M$ ) as an influencer of *missed nursing care* ( $Y_2$ ), at  $t(2, 1237) = .97, p > .01, .05$ , was not significant. Though  $c$  ( $-.03$ ) is greater than  $c'$  ( $-.20$ ), path *b* having no statistical significance indicates a lack of mediation. The total effect model summary also indicates a lack of mediation, because  $R^2$  is only 0.84% for the total mediation model. Coworker incivility does not mediate the relationship between *nurse manager ability, leadership, and support of nurses* and *missed nursing care*. The Sobel test statistic indicates an insignificant effect of the mediation model ( $Z = -.84, p > .05$ ) (Sobel, 1982). In addition, the Kappa squared test indicates that there would be a small difference if significance existed ( $\kappa^2 = .03$ ) (Preacher & Kelley, 2011). Refer to Figure 4.8 for a diagram of coefficient results. Refer to Table 4.7 for a



summary of the model represented within this question.

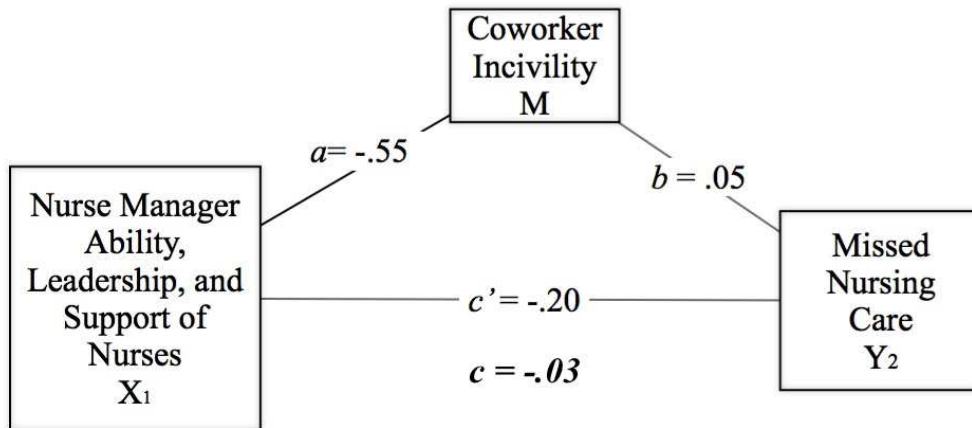


Figure 4.9. Coefficients for research question 11.

**Research Question #12:**

*Does coworker incivility (M) mediate a relationship between staffing and resource adequacy (X<sub>2</sub>) and missed nursing care (Y<sub>2</sub>)?* The relationship of *coworker incivility* as a mediator influencing *staffing and resource adequacy (X<sub>2</sub>)* and *missed nursing care (Y<sub>2</sub>)* was determined using Hayes’ (2014) PROCESS macro for SPSS. Model number 4 was estimated using 10,000 bootstrapping samples, with a CI of 95%, as shown in Figure 4.9.

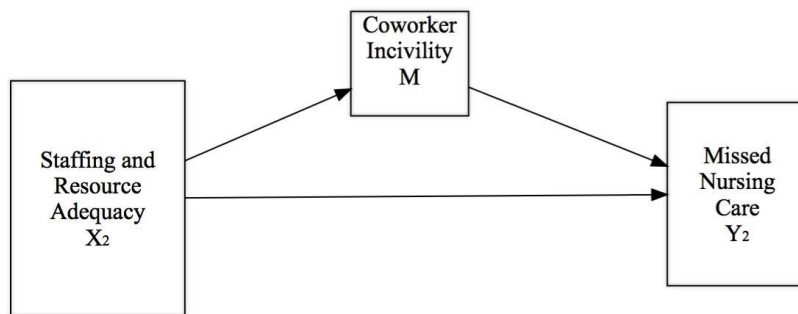


Figure 4.10. Conceptual Diagram for Question 12 Using Model 4 from PROCESS

Path *a* representing a relationship between *staffing and resource adequacy* ( $X_2$ ) and *coworker incivility* ( $M$ ) is significant:  $t(1244) = -10.10, p < 0.01$ , coefficient =  $-.45$ . Path *b* is not statistically significant:  $t(1243) = -4.97, p = .55, b = -.03, p > .01$ . Though *c* is greater than *c'*, path *b* having no statistical significance indicates a lack of mediation. The total model summary is  $F(2, 1243) = 14.42, R^2 = 2.3\%, p < .001$ . The Sobel test statistic indicates an insignificant effect of the mediation model ( $Z = -.55, p > .05$ ) (Sobel, 1982). However, the Kappa squared test indicates that there is a small difference ( $\kappa^2 = .01$ ) (Preacher & Kelley, 2011); therefore, both the Sobel test statistic and Kappa squared test do not indicate the presence of mediation. Refer to Figure 4.10 for a summary of the model represented within this question. Refer to Table 4.7 for a summary of the model represented within this question.

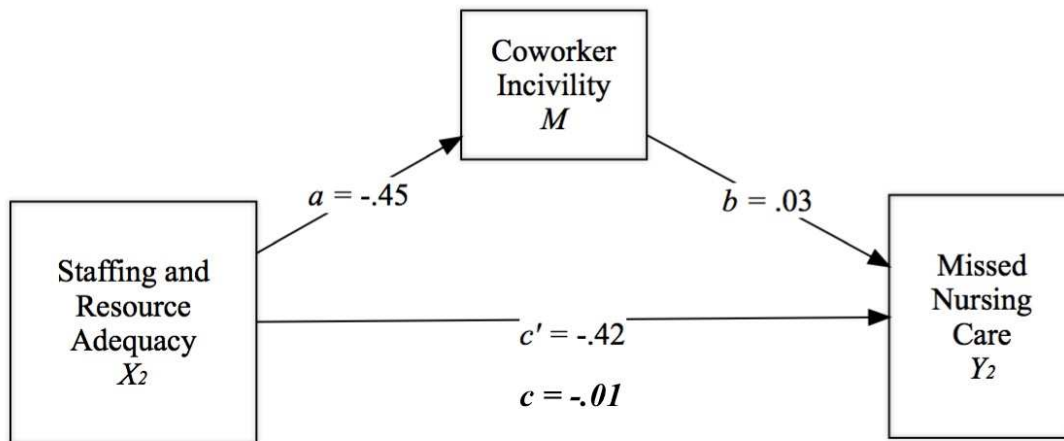


Figure 4.11. Coefficients for research question 12.

Table 4.7

*Coefficients for Questions 9 - 12*

|             | <b>Path a</b><br><b>X→M</b> | <b>Path b</b><br><b>M→Y</b> | <b>Path c'</b><br><b>X→Y</b> | <b>Indirect Effect</b><br><b>c</b> |
|-------------|-----------------------------|-----------------------------|------------------------------|------------------------------------|
| <b>Q.9</b>  | -.55                        | -.04                        | .34                          | .02                                |
| <b>Q.10</b> | -.45                        | -.08                        | .29                          | .03                                |
| <b>Q.11</b> | -.55                        | .05                         | -.20                         | -.03*                              |
| <b>Q.12</b> | -.45                        | .03                         | -.42                         | -.01*                              |

\*Indirect effect *c* greater than direct effect *c'*

### **Research Question #13:**

*Does coworker incivility (M) mediate a relationship between nurse manager ability, leadership, and support of nurses (X<sub>1</sub>) and patient safety culture (Y<sub>1</sub>) when moderated by collective efficacy (W)?* To answer this question, statistical model number 59 was most appropriate to use for analysis in the PROCESS macro for SPSS (Hayes, 2014). Model 59 is conceptually shown in context with question 13 in Figure 4.9. The X<sub>1</sub>, M, Y<sub>1</sub>, and W variables are labeled in Figure 4.10 as is statistically expressed in question 13. As consistent with Hayes (2014), model 59 is expressed differently for statistical analysis, as shown in Figure 4.11.

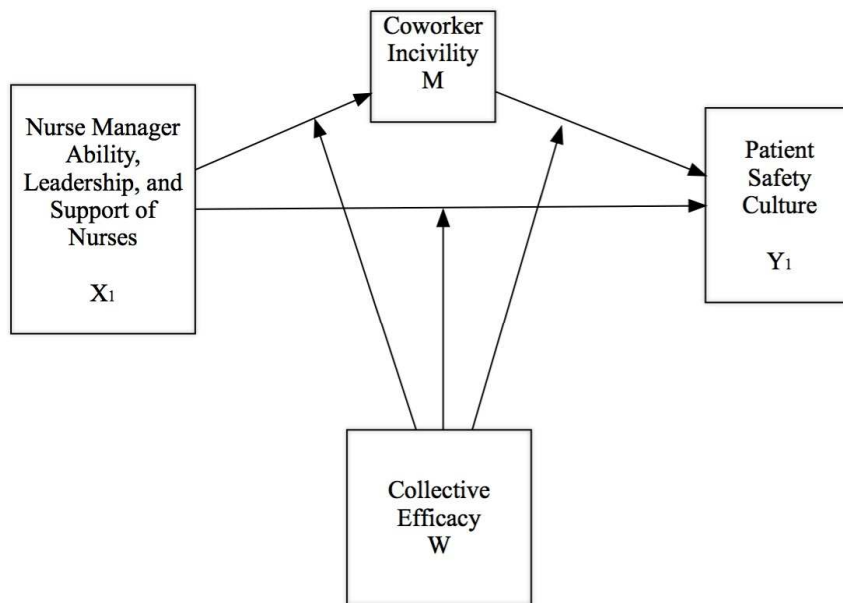


Figure 4.12. Conceptual Diagram for Question 13 Using Model 59 from PROCESS

To calculate the conditional indirect effect, the following equation was used:  $M = (a_1 + a_3W) (b_1 + b_2W)$  i.e.  $(-.68 + .05) (1.07 + -.19)$ . The conditional indirect effect was  $-.55$ . To calculate the direct effect, the following equation was used  $Y = c_1 + c_3 \cdot W$ . Or,  $Y = .50 + -.04$ . The direct effect is  $.46$ . The indirect effect is less than the direct effect, indicating that the indirect effect is not necessary for a significant relationship between *nurse manager ability, leadership, and support of nurses* and *patient safety culture*.

There was an overall statistically significant result for the entire model, including an influence of *coworker incivility (M)* on *nurse manager ability, leadership, and support of nurses (X1)* and *patient safety culture (Y1)* when moderated by *collective efficacy (W)* by using PROCESS (Hayes, 2014) in SPSS (i.e.  $F(1, 1244) = .42, R^2 = .18, p = .000$ ). However, mediation-moderation is not clinically significant because indirect mediating and moderating effects are not needed in order for there to be a relationship between *nurse manager ability,*

leadership, and support of nurses and patient safety culture. Refer to Figure 4.12 for a diagram of findings for question 13. Refer to Table 4.8 for a summary of the model represented within questions 13 - 16.

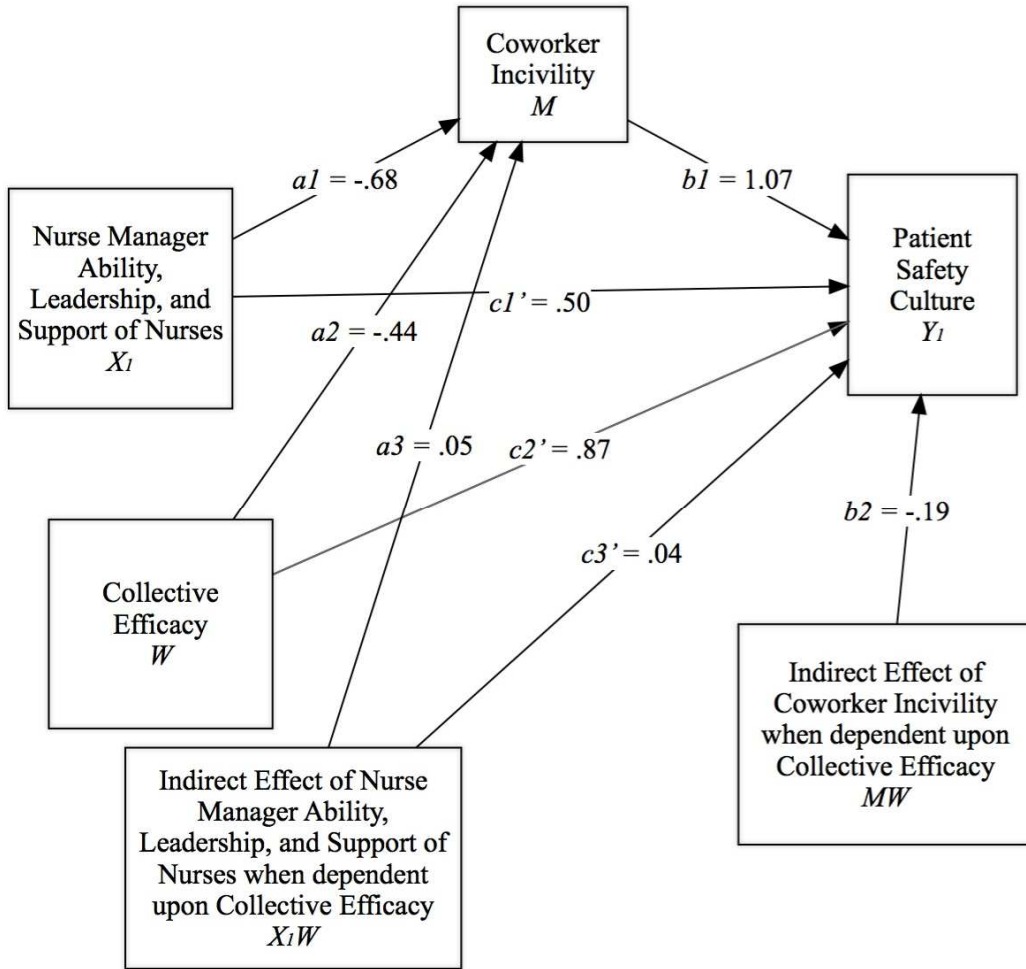


Figure 4.13. Coefficients for research question 13.

**Research Question #14:**

*Does coworker incivility ( $M$ ) mediate a relationship between staffing and resource adequacy ( $X_2$ ) and patient safety culture ( $Y_1$ ) when moderated by collective efficacy ( $W$ )? To answer this question, statistical model number 59 was most appropriate to use for analysis in the*

PROCESS macro for SPSS (Hayes, 2014). Model 59 is conceptually shown in context with question 14 in Figure 4.13. The  $X_1$ ,  $M$ ,  $Y_1$ , and  $W$  variables are labeled in Figure 4.13 as is statistically expressed in question 14. As consistent with Hayes (2014), model 59 is expressed differently for statistical analysis, as shown in Figure 4.14.

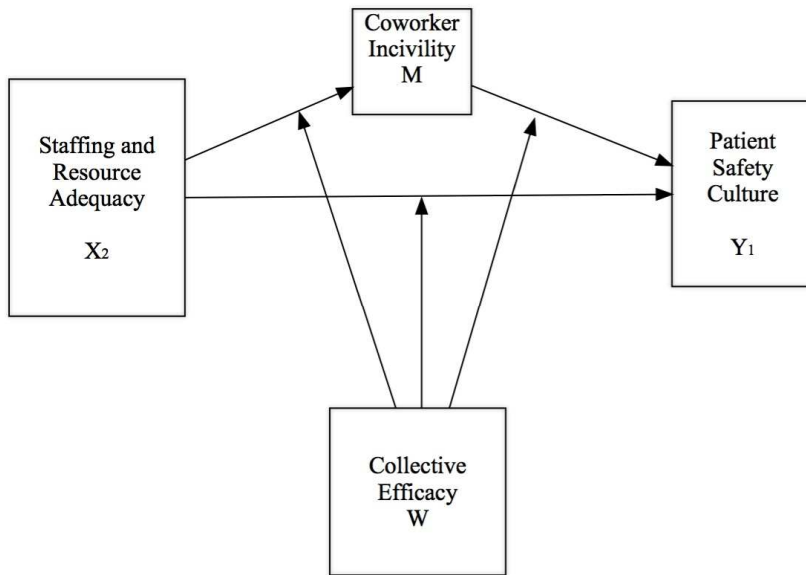


Figure 4.14. Conceptual Diagram for Question 14 Using Model 59 from PROCESS

To calculate the conditional indirect effect, the following equation was used:  $M = (a_1 + a_3W) (b_1 + b_2W) = M = (-1.15 + .16) (.67 + .13) = -.53$ . To calculate the direct effect, the following equation was used  $Y = c_1 + c_3 \cdot W = Y = (-.78 + .17) = -.61$ . After determining each path in the model as described in Figure 4.14, it was found that *collective efficacy* did, to some degree, moderate a relationship between *staffing and resource adequacy* ( $X_2$ ), *coworker incivility* ( $M$ ) and *patient safety culture* ( $Y_1$ ). Perceptions between staffing and resource adequacy and patient safety culture may depend upon *collective efficacy* perceptions. The moderating effect of collective efficacy had an effect on *coworker incivility* ( $M$ ) in mediating a relationship between *staffing and resource adequacy* ( $X_2$ ) and *patient safety culture* ( $Y_1$ ). There was an overall

moderating effect between the product of *collective efficacy* and *coworker incivility* ( $XW$ ) as demonstrated by  $C_3' = -.78$  and  $C_3 = .05$ .  $C_3$  is greater than  $C_3'$ . The indirect moderating effect of *collective efficacy* had a positive additive effect on *staffing and resource adequacy* and *patient safety culture*; however, the indirect mediating effect of *coworker incivility* is not necessary for a relationship between *staffing and resource adequacy* and *patient safety culture*. Refer to Table 4.8 for a summary of the model represented within this question. Refer to Figure 4.14 for a diagram of results for question 14. Refer to Table 4.9 for a summary of the model represented within questions 13 - 16.

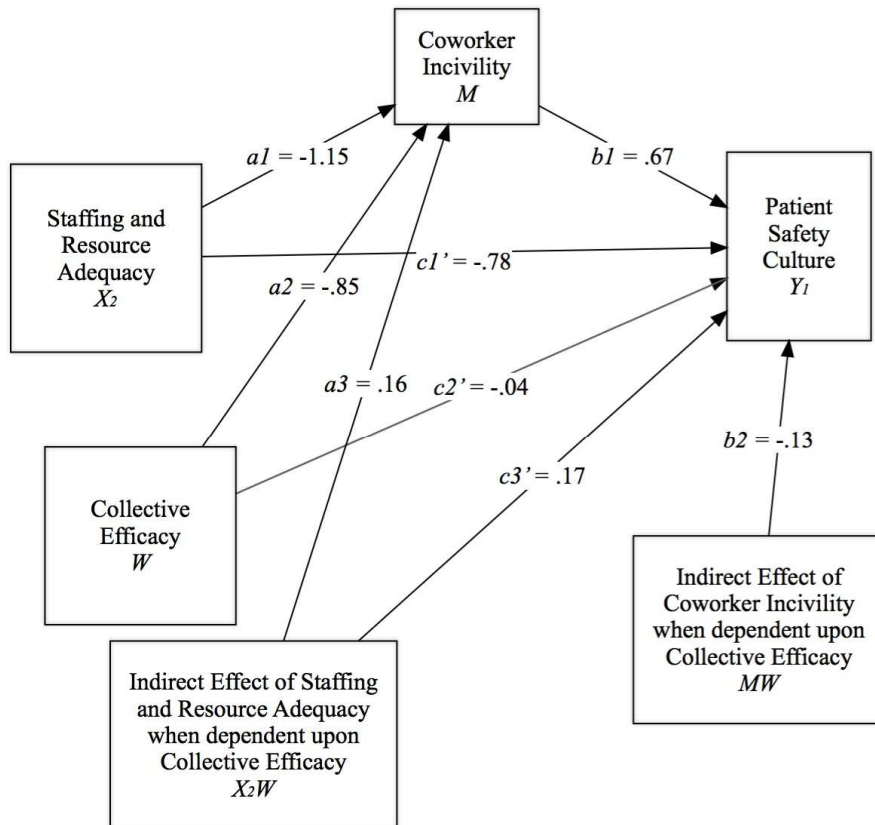
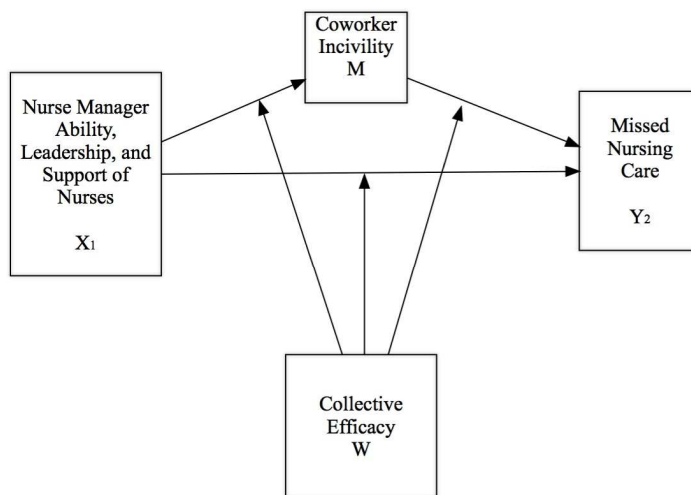


Figure 4.15. Coefficients for Question 14

**Research Question #15:**

*Does coworker incivility (M) mediate a relationship between nurse manager ability, leadership, and support of nurses (X<sub>1</sub>) and missed nursing care (Y<sub>2</sub>) when moderated by collective efficacy (W)?* To answer this question, statistical model number 59 was most appropriate to use for analysis in the PROCESS macro for SPSS (Hayes, 2014). Model 59 is conceptually shown in context with question 15 in Figure 4.13. The X<sub>1</sub>, M, Y<sub>1</sub>, and W variables are labeled in Figure 4.15 as is statistically expressed in question 15. As consistent with Hayes (2014), model 59 is expressed differently for statistical analysis, as shown in Figure 4.16.



*Figure 4.16.* Conceptual Diagram for Question 15 Using Model 59 from PROCESS

Using the PROCESS macro for SPSS (Hayes, 2014) for analysis, it was determined that the data were an adequate fit for the overall model summary ( $F(7, 1227) = 8.16, R^2 = .05, p < 0.001$ ). For the three-way interaction among *nurse manager ability, leadership, and support of nurses (X<sub>1</sub>)*, *coworker incivility (M)*, and *collective efficacy (W)*,  $F(1, 1227) = 7.02, R^2 = .01, p =$



.01. To calculate the total conditional indirect effect, the following equation was used:  $M = (a_1 + a_3W) (b_1 + b_2W) = M = (-.60 + .03) (.43 + -.08) = -.20$ . To calculate the direct effect, the following equation was used  $Y = c_1' + c_3'W = Y = (-.11 + .02) = -.09$ . The indirect effect is less than the direct effect. There is not a significant relationship between *nurse manager ability, leadership, and support of nurses* and *missed nursing care* with mediation through *coworker incivility* and moderation by *collective efficacy*.

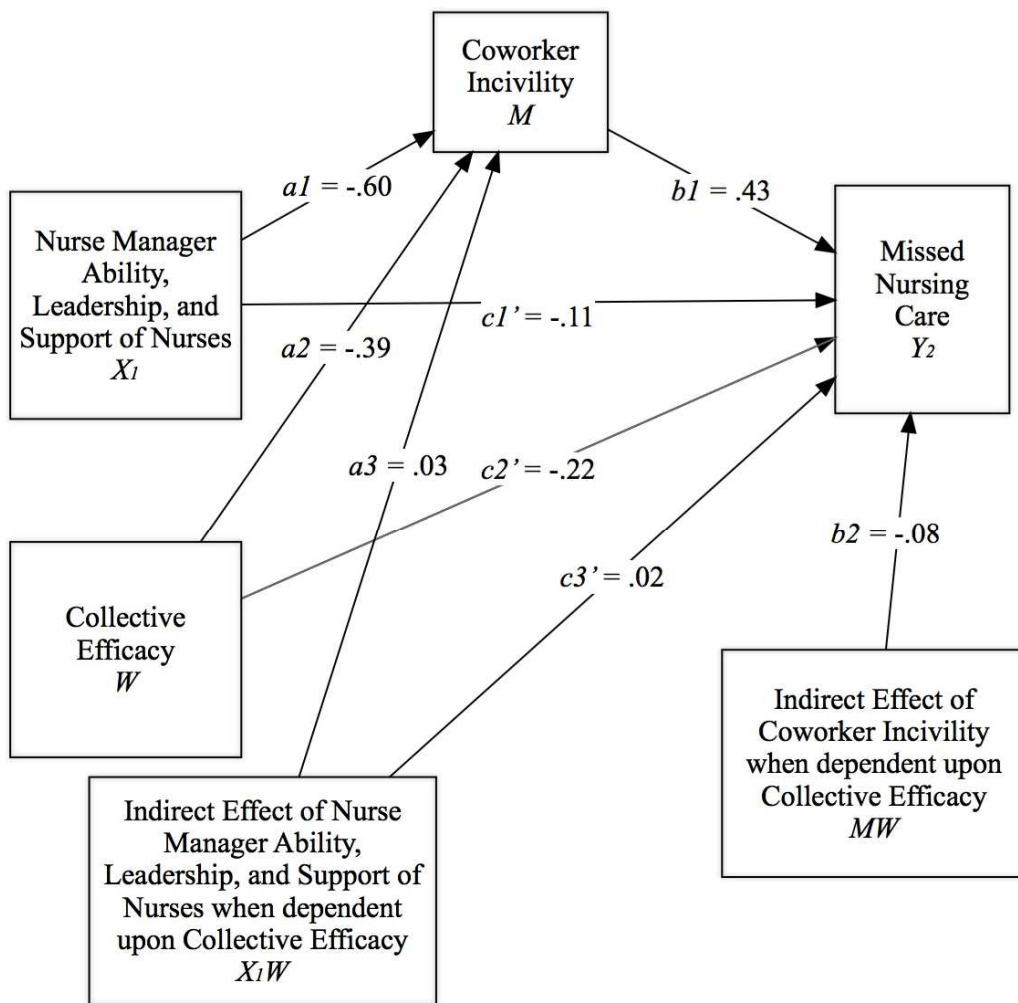
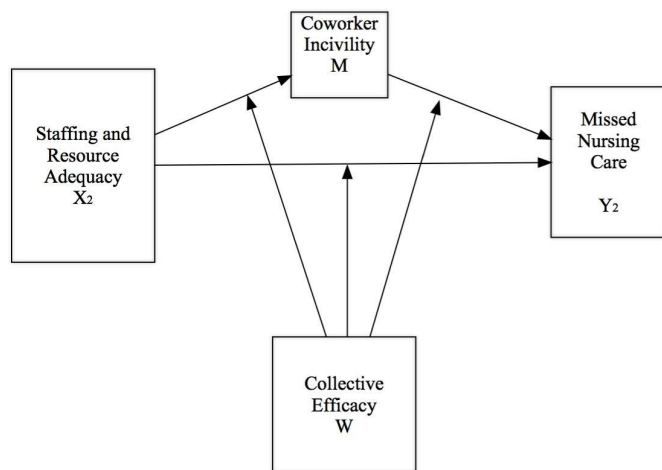


Figure 4.17 Statistical Diagram for Question 15 Using Model 59 from PROCESS

**Research Question #16:**

*Does coworker incivility (M) mediate a relationship staffing and resource adequacy (X<sub>2</sub>) and missed nursing care (Y<sub>2</sub>) when moderated by collective efficacy (W)?* To answer this question, statistical model number 59 was most appropriate to use for analysis in the PROCESS macro for SPSS (Hayes, 2014). Model 59 is conceptually shown in context with question 16 in Figure 4.17. The X<sub>1</sub>, M, Y<sub>1</sub>, and W variables are labeled in Figure 4.15 as is statistically expressed in question 16. As consistent with Hayes (2014), model 59 is expressed differently for statistical analysis, as shown in Figure 4.18.



*Figure 4.18.* Conceptual Diagram for Question 16 Using Model 59 from PROCESS

Using the PROCESS macro for SPSS (Hayes, 2014) for analysis, it was determined that the data were an adequate fit for the total model summary representing this question ( $F(7, 1233) = 12.62, R^2 = .07, p < 0.001$ ). However, for the three-way interaction among the independent variable, mediator variable, and moderator variable, it was determined that mediation and

moderation did not have a statistically significant effect on the outcome of the model (i.e.  $F(1, 1233) = .12, R^2 = .0001, p = .7258$ ). To calculate the total conditional indirect effect, the following equation was used:  $M = (a_1 + a_3W) (b_1 + b_2W) = M = (-1.07 + .15) (.78 + -.14) = -.60$ . To calculate the direct effect, the following equation was used  $Y = c_1' + c_3'W = Y = (.98 + -.20) = .78$ . The direct effect was greater than the indirect effect. There is not a significant relationship between *staffing and resource adequacy* and *missed nursing care* with mediation through *coworker incivility* and moderation by *collective efficacy*. Refer to Figure 4.18 for a diagram of coefficients for question 16. Refer to Table 4.8 for a summary of the model represented within questions 13 - 16.

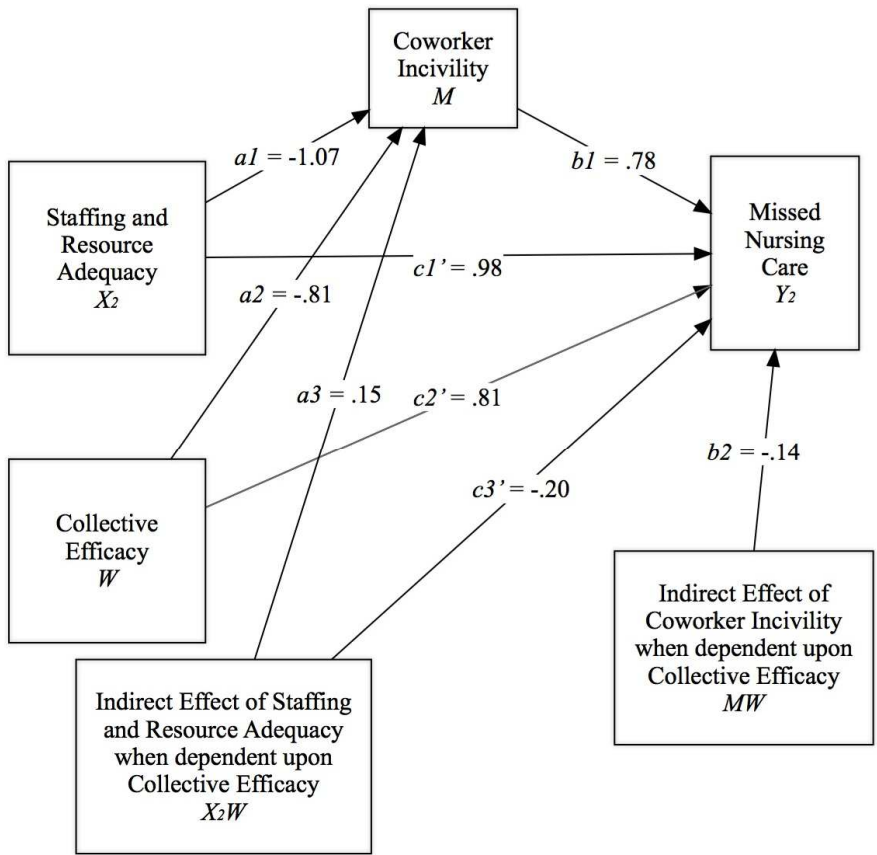


Figure 4.19. Coefficients for question 16.

Table 4.8

*Path Coefficients Illustrated by Significance for Questions 13 - 16*

|             | <b>Path a<sub>1</sub></b><br>X→M | <b>Path a<sub>2</sub></b><br>W→M | <b>Path a<sub>3</sub></b><br>XW→M | <b>Path c'<sub>1</sub></b><br>X→Y | <b>Path c'<sub>2</sub></b><br>W→Y | <b>Path c'<sub>3</sub></b><br>XW→Y | <b>Path b<sub>1</sub></b><br>M→Y | <b>Path b<sub>2</sub></b><br>MW→Y |
|-------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|----------------------------------|-----------------------------------|
| <b>Q.13</b> | -0.68                            | -0.44                            | .05                               | .50                               | .87*                              | -.04                               | 1.07*                            | -.19*                             |
| <b>Q.14</b> | -1.15**                          | -.85**                           | .16**                             | -.78**                            | -.04                              | .17**                              | .67**                            | -.13**                            |
| <b>Q.15</b> | -.60                             | -.39                             | .03                               | -.11                              | -.22                              | .02                                | .43                              | -.08                              |
| <b>Q.16</b> | -1.07                            | -.81                             | .15                               | .98                               | .81                               | -.20                               | .78                              | -.14                              |

\*Significant at  $p < 0.01$ \*\*Significant at  $p < 0.05$ **Research Question #17:**

*What is the relationship between nurse manager ability, leadership, and support of nurses ( $X_1$ ), staffing and resource adequacy ( $X_2$ ), and coworker incivility ( $X_3$ ) on patient safety culture ( $Y_1$ )? Hierarchical regression was performed to answer this question. The resultant  $R^2$  of 0.15 indicated that 15% of the variance of *patient safety culture* ( $Y_1$ ) can be predicted from *nurse manager ability, leadership, and support of nurses* ( $X_1$ ), *staffing and resource adequacy* ( $X_2$ ), and *coworker incivility* ( $X_3$ ) ( $F(2, 1250) = 108.29, p < .01$ ). There is not a significant change using hierarchical regression to predict *patient safety culture* ( $Y_1$ ) when *coworker incivility* ( $M$ ) is added to the equation in addition to *nurse manager ability, leadership, and support of nurses* ( $Y_1$ ) and *staffing and resource adequacy* ( $Y_2$ ) ( $F(1, 1249) = 2.21, p = .14$ ). Collinearity diagnostics were calculated for this question and indicated that no independent variables were significantly correlated. Refer to Table 4.10 for a summary of the model represented within this question.*

Table 4.9

*Summary of Findings for Questions 1 - 16*

| Question   | N    | B    | B    | R   | R <sup>2</sup> | F<br>Statistic | P<br>Value |
|--|------|------|------|-----|----------------|----------------|------------|
| 1 Leadership → Incivility  | 212  | -.55 | -.38 | .38 | .14            | 35.62          | .000       |
| 2 Staffing → Incivility  | 212  | -.45 | -.28 | .28 | .08            | 17.43          | .000       |
| 3 Incivility → Patient Safety  | 212  | -.13 | -.19 | .19 | .03            | 7.61           | .005       |
| 4 Incivility → Missed Care   | 212  | .12  | .06  | .06 | .004           | .88            | .350       |
| 5 Leadership → Patient Safety  | 212  | .36  | .36  | .36 | .13            | 31.22          | .000       |
| 6 Staffing → Patient Safety  | 212  | .34  | .30  | .30 | .09            | 20.74          | .000       |
| 7 Leadership → Missed Care   | 212  | -.25 | -.10 | .10 | .01            | 1.95           | .166       |
| 8 Staffing → Missed Care   | 212  | -.44 | -.15 | .15 | .02            | 5.01           | .029       |
| 9 Leadership → Incivility → Patient Safety   | 1254 | --   | --   | .38 | .15            | 212.24         | .002*      |
| 10 Staffing → Incivility → Patient Safety  | 1260 | --   | --   | .30 | .09            | 123.37         | .002*      |
| 11 Leadership → Incivility → Missed Care   | 1240 | --   | --   | .38 | .15            | 208.59         | .002*      |
| 12 Staffing → Coworker Incivility → Missed Care                                      | 1246 | --   | --   | .28 | .08            | 102.01         | .002*      |
| 13 Leadership → Incivility (M) → Collective Efficacy<br>(W) → Patient Safety Culture | 1248 | --   | --   | .40 | .16            | 47.92          | .000       |
| 14 Staffing → Incivility (M) → Collective Efficacy<br>(W) → Patient safety culture   | 1254 | --   | --   | .40 | .14            | 39.53          | .000       |
| 15 Leadership → Incivility (M) → Collective Efficacy<br>(W) → Missed Care            | 1235 | --   | --   | .19 | .04            | 9.39           | .000       |
| 16 Staffing → Incivility (M) → Collective Efficacy<br>(W) → Missed Care              | 1241 | --   | --   | .20 | .04            | 10.75          | .000       |

*Note: Sample sizes vary due to bootstrapping*

\*Significant at .002. (Calculated from  $.05 / 18 = .002$  for Bonferroni Test)

Table 4.10

*Question 17: Hierarchical Regression: Outcome Variable-Patient Safety*

| Step and predictor variable                               | B     | SE B | Beta | R <sup>2</sup> | R <sup>2</sup> change | P value |
|---|-------|------|------|----------------|-----------------------|---------|
| Step 1:<br>Nurse manager ability, leadership, and support | .36   | .07  | .36  | .13            | .13                   | .01     |
| Step 2:<br>Staffing and resource adequacy                 | .18   | .08  | .39  | .14            | .14                   | .03     |
| Step 3:<br>Coworker incivility                            | -.030 | .05  | .39  | .15            | .14                   | .50     |

**Research Question #18:**

*What is the relationship between nurse manager ability, leadership, and support of nurses ( $X_1$ ), staffing and resource adequacy ( $X_2$ ), and coworker incivility ( $X_3$ ) on missed nursing care ( $Y_2$ )? The resultant  $R^2$  of .022 indicates that 2.2% of the variance of missed nursing care can be predicted from nurse manager ability, leadership, and support of nurses ( $X_1$ ), staffing and resource adequacy ( $X_2$ ), and coworker incivility ( $X_3$ ). The ANOVA resulted in  $F(2, 1237) = 108.29, p > 0.01$  indicating that all three independent variables together predict 2.2% of the variance of the dependent variable; however,  $F$  does not change significantly in hierarchical regression to predict missed nursing care when coworker incivility ( $X_3$ ) is added to the equation in addition to nurse manager ability, leadership, and support of nurses ( $X_1$ ) and staffing and resource adequacy ( $X_2$ ) ( $F(1, 1236) = .269, p < .01$ ). Collinearity diagnostics were calculated for this question and indicated that no independent variables were significantly correlated. It can be concluded from this analysis that nurse manager ability, leadership and support of nurses ( $X_1$ ), staffing and resource adequacy ( $X_2$ ), and coworker incivility ( $X_3$ ) are not significant predictors of*

missed nursing care in this hierarchical regression model. Refer to Table 4.11 for a summary of the model represented within this question.

Table 4.11

*Question 18: Hierarchical Regression: Outcome Variable-Missed Nursing Care*

| Step and predictor variable                               | B    | SE B | Beta | R <sup>2</sup> | R <sup>2</sup> change | P value |
|---|------|------|------|----------------|-----------------------|---------|
| Step 1:<br>Nurse manager ability, leadership, and support | -.25 | .18  | -.10 | .01            | .01                   | .17     |
| Step 2:<br>Staffing and resource adequacy                 | -.41 | .23  | -.14 | .02            | .01                   | .09     |
| Step 3:<br>Coworker incivility                            | .03  | .13  | .02  | .01            | .01                   | .79     |

### **Post-Hoc Analyses**

#### **Differences between nurse characteristics and hospital perceptions**

Data were also examined for difference among categorical variables within the sample (i.e. age, experience, and unit type) and total scores for continuous variables. Using One Way ANOVA, there were no significant difference found among age groups and level of experience and total scores for leadership, staffing, missed care, coworker incivility, collective efficacy, and patient safety culture outcomes. However, a significant difference was found among those reporting perceptions from different hospital units.

#### **Collective Efficacy as an Independent Variable in Simple Regression**

*What is the relationship between collective efficacy and patient safety culture?* Simple linear regression was calculated to predict participants' perceptions of safety culture based on their perceptions of collective efficacy. A significant regression equation was found ( $F(1, 210) = 16.13, p < .01$ ). An R squared of .07 was obtained. The simple linear regression equation is:

*Safety Culture*' = 2.1 + .21 (*Collective Efficacy*). The average participants' perceptions of *patient safety culture* increased with a .21 increase in *collective efficacy* scores.

*What is the relationship between collective efficacy and missed nursing care?* Simple linear regression was calculated to predict participants' perceptions of *missed nursing care* on their perceptions of *collective efficacy*. A significant regression equation was found ( $F(1, 210) = 8.17, p < .01$ ), with an  $R^2$  of .04. The simple linear regression equation is: *Missed Nursing Care*' = 6.8 + -.40 (*Collective Efficacy*). The average participants' perceptions of increased *missed nursing care* frequency were inversely related to positive perceptions of *collective efficacy*.

*What is the relationship between collective efficacy and coworker incivility?* Simple linear regression was calculated to predict participants' perceptions of *coworker incivility* on their perceptions of *collective efficacy*. A significant regression equation was found ( $F(1, 210) = 29.97, p < .01$ ). An  $R$  squared of .13 was obtained. The simple linear regression equation is: *Coworker Incivility*' = 5.55 + -.41 (*Collective Efficacy*). The average participant's perceptions of increased *coworker incivility* decreased as positive perceptions of *collective efficacy* increased by .44.

Table 4.12

*Post-Hoc Simple Linear Regression*

| <b>Question</b>                                | <b>N</b> | <b>B</b> | <b>Beta</b> | <b>R</b> | <b>R<sup>2</sup></b> | <b>F<br/>Statistic</b> | <b>P<br/>Value</b> |
|--|----------|----------|-------------|----------|----------------------|------------------------|--------------------|
| <b>Collective efficacy→Safety Culture</b>      | 212      | .21      | .27         | .27      | .07                  | 16.13                  | .01                |
| <b>Collective Efficacy→Missed Nursing Care</b> | 212      | -.40     | -.20        | .19      | .04                  | 8.17                   | .01                |
| <b>Collective efficacy→Coworker Incivility</b> | 212      | -.41     | -.35        | .35      | .13                  | 29.97                  | .01                |



## Multiple Mediation Model

Based on results from question 1 – 18, an additional model was tested with the theoretical idea, from Donabedian’s Framework, of using missed nursing care and nurse manager ability, leadership, and support of nurses as variables instead of being either a structure (i.e. nurse manager ability, leadership, and support of nurses) or an outcome (i.e. missed nursing care). A model using collective efficacy, coworker incivility, missed nursing care, and nurse manager ability, leadership, and support of nurses as four mediators was tested. The total indirect effect of this model was greater than the direct effect between staffing and resource adequacy and patient safety culture. See Figure 4.19 for coefficients. Missed nursing care still had an insignificant effect on the end outcome of patient safety culture perceptions. The use of four mediators is limited because it cannot be inferred with certainty through which mediator the independent variable would have an effect on the outcome. Further, there is already a relationship between *staffing and resource adequacy* and *patient safety culture* without mediation.

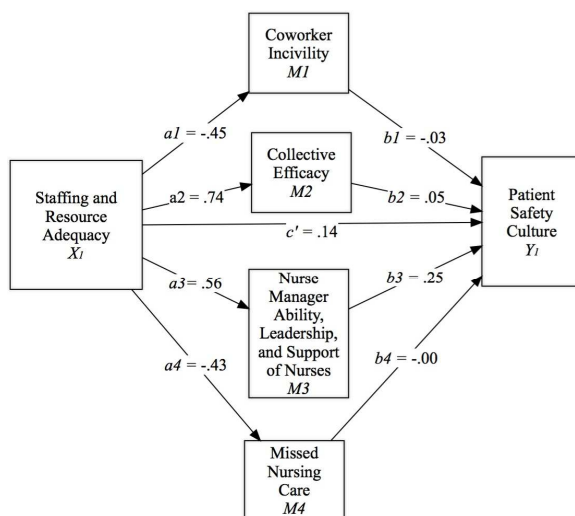


Figure 4.20. Post Hoc Analysis

## Chapter Summary

### Summary of Simple Linear Regression

Using simple linear regression, leadership was a significant predictor for coworker incivility and patient safety. There is a moderate inverse relationship between *nurse manager leadership* as a predictor of staff registered nurse perceptions about *patient safety culture* using simple linear regression. Leadership was not a significant predictor for missed nursing care. Staffing was a significant predictor for coworker incivility, patient safety, and missed nursing care. Coworker incivility was a significant predictor for patient safety; however, coworker incivility was not a significant predictor for missed nursing care. Coworker incivility was not necessary as a mediator for a significant relationship between leadership and patient safety, as well as staffing and patient safety. Coworker incivility did not mediate a relationship between staffing and missed nursing care. Coworker incivility did not mediate a relationship between leadership and missed nursing care.

### Summary of Mediation Models

The indirect effect of nurse manager ability, leadership, and support when dependent upon collective efficacy is not a greater than that of the direct effect of nurse manager ability, leadership, and support of nurses on patient safety culture. The indirect moderating effect of *collective efficacy* had a positive additive effect on *staffing and resource adequacy* and *patient safety culture*; however, the indirect mediating effect of *coworker incivility* is not necessary for a relationship between *staffing and resource adequacy* and *patient safety culture*. The indirect effect is less than the direct effect, indicating that the indirect effect is not necessary for a significant relationship between *nurse manager ability, leadership, and support of nurses* and *patient safety culture*.

### **Summary of Mediation-Moderation Models**

There is not a significant relationship between *nurse manager ability, leadership, and support of nurses* and *missed nursing care* with mediation through *coworker incivility* and moderation by *collective efficacy*. There is not a significant relationship between *staffing and resource adequacy* and *missed nursing care* with mediation through *coworker incivility* and moderation by *collective efficacy*.

### **Summary for Hierarchical Regression Models**

There is not a significant change using hierarchical regression to predict *patient safety culture* ( $Y_1$ ) when *coworker incivility* ( $M$ ) is added to the equation in addition to *nurse manager ability, leadership, and support of nurses* ( $Y_1$ ) and *staffing and resource adequacy* ( $Y_2$ ) ( $F(1, 1249) = 2.21, p = .14$ ). Nurse manager ability, leadership and support of nurses, staffing and resource adequacy, and coworker incivility did not serve as significant predictors for missed nursing care in a hierarchical regression model.

The findings of this study were presented in this chapter. Findings included descriptive information on the characteristics of the participant sample and results for research questions 1 – 18. The next chapter will provide a discussion of these results in terms of relevance to nursing practice, education, research, theory, and policy.

## Chapter Five

### Discussion, conclusions, and recommendations

The purpose of this dissertation was to investigate relationships among hospital structures, hospital processes, and hospital outcomes using Donabedian's (1980) conceptual framework relative to hospital patient quality outcomes. Hospital structures investigated included registered nurse perceptions of *nurse manager ability, leadership, and support of nurses*, as well as registered nurse perceptions of *staffing and resource adequacy*. Hospital processes included the presence of *peer-to-peer registered nurse workplace incivility* and *collective efficacy* among the nurse work group. Hospital outcomes included nurse perceptions of *patient safety cultures* and *missed nursing care* in the hospital.

Overall, inspection of results indicates that *nurse manager ability, leadership, and support of nurses* predicted *coworker incivility* and *patient safety culture*. *Coworker incivility* was not a significant mediator. *Collective efficacy* was a moderator in one model with *staffing and resource adequacy* as the predictor variable, *coworker incivility* as a mediator, and *patient safety culture* as the outcome variable. Discussion, conclusions, and recommendations about findings will be included in this chapter. The discussion includes implications that this study has for nursing practice, education, research, theory, and policy. Limitations and recommendations will also be presented.

### Discussion

#### Descriptive Results

Categorical descriptive results are consistent with other recent nurse workforce studies in the areas of missed nursing care, nurse coworker incivility, work environment conditions, and patient outcomes in which most participants are females (Cho, Chin, Kim, & Hong, 2016;

Laschinger, Wong, Cummings, & Grau, 2014; Piscotty & Kalish, 2014). The education for this sample was higher than average, with 73.0% prepared at the BSN level, likely because the hospital systems has the ability to select for nurses with baccalaureate degrees due to close proximity of 4-year universities in metropolitan areas. According to a 2013 update, the U.S. nursing workforce is composed of approximately 55% BSNs as opposed to other degree designations (HRSA, 2013). Therefore, the number of BSNs from this hospital system in the sample was 18% higher than the national average as of 2013. In the following paragraphs, descriptive results for each variable for path analysis will be discussed.

**Coworker incivility.** In this sample, the mean total score for coworker incivility was low, averaging 10.24. The maximum total score for coworker incivility was 42. One reason for these low scores for coworker incivility could be the philosophies of the five locations involved in this study. Three of the five locations have achieved the Magnet designation award from the American Nurses Credentialing Center (ANCCa). The Magnet designation recognizes hospitals that foster quality patient care, nursing excellence, innovations in nursing practice, and interdisciplinary collaboration (ANCC, 2016a). Work environments developed to retain and attract top nursing talent are perhaps less tolerant of coworker incivility and its potential effects on patient safety. In addition, the other two hospitals in this study are on the Pathway to Excellence Program, another award given by the ANCC, which validates that all five hospitals in this study are striving for positive nurse work environments to improve patient care.

**Collective efficacy.** In this sample, total scores for collective efficacy were high, with the average of collective efficacy total scores at 34.79. The highest possible total score for collective efficacy was 42. Collective efficacy is an individual's belief that a group can perform a job well (Riggs & Knight, 1994). Measuring collective efficacy in an organization can help leaders

understand the depth of which a work group believes goals can be accomplished in the organization based on four dimensions, including (1) shared mastery experiences, (2) vicarious experiences, (3) social persuasion, and (4) affective states (Goddard, Hoy, & Hoy, 2004). In the Magnet philosophy, there are 12 forces of magnetism that attract top nursing talent. Of these 12, the following forces of magnetism may have had an influence on collective efficacy perceptions: (1) organizational structure, (2) management style, (3) personnel policies and programs, and (4) consultation and resources (ANCC, 2016b). Each of these five hospitals are structured to include nursing councils to discuss either practice, research, or both, pertinent to improving patient care and staff satisfaction. Nursing councils are a component of hospital organizations that allow registered nurses to discuss shared mastery experiences, vicarious experiences, affective states, and serves as a venue for social persuasion through open dialogue. Such a commitment to incorporating unit-based, and hospital-based, committees could have a positive influence on staff nurses' perceptions of collective efficacy. Nurse management style, as demonstrated through high-energy, present, supportive leadership, can promote a positive affective state.

**Missed nursing care.** The mean total score for acute care missed nursing care in this sample was 21.06, which indicates that participants reported less missed nursing care. The total possible score for missed nursing care for each participant was 60. Missed nursing care perceptions are likely low in this sample for multiple reasons. Autonomy, a force of magnetism, is embraced by Magnet organizations and allows staff registered nurses some latitude in decision-making for patient care (ANCC, 2016b). Perhaps some nurses perceive some care as not missed, though not performed, because it is the registered nurses' personal judgment to exclude this care in relation to including the most pertinent care patients need.

Descriptive results for missed nursing care are consistent with Castner and Dean-Barr (2014) in that care applicable to nurses across a hospital system include 15 specific items from MISSCARE Survey part A. Results give credibility to further research of the Acute Care Missed Nursing Care Subscale (Castner & Dean-Barr, 2014). However, more research is needed to determine in what sense nurses consider care as “missed,” and whether or not nurse autonomy is influential to the individual staff registered nurse’s perception of care as “missed” or omitted for a valid reason to best care for patients.

**Nurse manager ability, leadership, and support of nurses.** The mean of total scores for *nurse manager ability, leadership, and support of nurses* were high in this study, with an average of 15.75. The total possible score for this variable was 20. The following five forces of magnetism may have had an influence on staff registered nurse perceptions of *nurse manager ability, leadership, and support of nurses*: (1) quality of leadership, (2) management style, (3) image of nursing, (4) professional development, and (5) nurses as teachers (ANCC, 2016b). The emphasis of professional development for nurses may suggest that nurse managers have opportunities to improve their leadership skills. There could be an organizational influence for nurse managers, as leaders, to develop their leadership abilities and work with staff nurses to maintain good working relationships.

**Patient safety culture.** The mean of total scores for patient safety culture was high at 11.34. The total possible score for this variable was 15. This is consistent with forces of magnetism related to improving patient safety and care: (1) quality of care, and (2) quality improvement (ANCC, 2016b). The model for ANCC’s magnet recognition program categorizes quality improvement as a force to develop new knowledge, innovations, and improvements. Quality of care is organized in the ANCC magnet recognition model as necessary to achieve

empirical quality outcomes. Refer to Figure 5.1 to see a visual of these categories (i.e. new knowledge innovations, and improvements and empirical quality outcomes) developed by the ANCC (2016b). It is logical to infer that hospitals that strive for, and maintain, Magnet designation closely monitor patient safety outcomes to ensure patient care is safe.

**Staffing and resource adequacy.** The mean of total scores for staffing and resource adequacy was high at 11.34. The total possible score for staffing and resource adequacy mean scores was 15. This is consistent with forces of magnetism related to staffing and resource adequacy: (1) consultation and resources and (2) personnel policies and programs (ANCC, 2016b). Consultation and resources is a component of exemplary professional practice (ANCC, 2016b) Personnel policies and programs are components of structural empowerment (ANCC 2016b). Consistent with other variables in this study, the high scores for staffing and resource adequacy suggest excellence in achieving the Magnet designation and commitment to the Pathway to Excellence Program for nurses.

### **Results for Relationships among Predictors and Outcomes**

**Nurse manager leadership as predictor of patient safety culture.** The inverse relationship demonstrated between high (i.e. positive) scores for total *nurse manager ability, leadership, and support of nurses* and low (i.e. less) *coworker incivility* is consistent with Laschinger's (2014) findings between leadership and coworker incivility. Laschinger (2014) studied a specific type of leadership, resonant leadership, and its effect on coworker incivility was significant. Another leadership style, authentic leadership, had a negative direct effect on workplace bullying, a related concept to coworker incivility (Laschinger, Wong, & Grau, 2012). It has also been demonstrated in a previous study among three Midwest companies that conflict management style predicted the frequency of incivility among instigators and targets of uncivil



behavior (Trudel & Reio, 2011). Smokler-Lewis (2011) also found that nurses' perceptions of their manager's ability to address workplace incivility were negatively associated with workplace incivility scores, which was consistent with findings of this study. Results indicate that positive scores for *nurse manager ability, leadership, and support for nurses* are also related with high scores on *patient safety culture*. Nurse managers who exemplify ability, leadership and support for nurses might reassure staff registered nurses that measures are being taken to ensure safe patient care environments.

**Staffing and resource adequacy as a predictor of patient safety culture.** Positive perceptions of staffing and resource adequacy were related with lower scores of coworker incivility. Staffing has been studied in terms of its effects on patient safety and outcomes (Aiken et al., 2002; Aiken et al., 2011). Positive perceptions of staffing and resource adequacy are correlated with positive perceptions of patient safety culture, as consistent with other health care service research studies (Aiken et al., 2002; Aiken et al., 2011). This study suggests evidence consistent with the theoretical idea that staffing and resource adequacy is a hospital structure that is influential to fostering positive patient safety cultures.

**Coworker incivility as a predictor and mediator of patient safety culture.** In this study, coworker incivility was a significant predictor in a bivariate analysis between coworker incivility and patient safety outcomes. This is consistent with the literature in that the most significant predictor of workplace incivility among coworkers has been found to be leadership, management, organizational policies, organizational changes, and interpersonal factors (Leiter, 2013). This simple linear relationship suggests that coworker incivility is related to patient outcomes without the need for mediation through another variable. The finding of coworker incivility as having small predictive value for patient safety outcomes provides some, albeit

limited, evidence to further study coworker incivility as a problematic force important to address to improve patient care culture. It is clear that coworker incivility is a threat to patient safety, despite that the significant relationships and effects are small. Clinically, even a small amount of coworker incivility could have large implications if it severely interferes with work outcomes, such as patient safety culture and missed nursing care.

Due to a relationship already existing between *nurse manager ability, leadership, and support of nurses* and *patient safety culture*, there was not a conceptual rationale for testing the mediating effect that *coworker incivility* may have between *nurse manager leadership* and *patient safety culture*. Workplace incivility has been studied as a moderator among hospital workers as a collective and was found to moderate a stressor-strain relationship among employees (Gillin, Oore, Leblanc, Day, Leiter, Laschinger, Price, & Latimer, 2010). In this study, coworker incivility was studied as a mediator to understand if coworker incivility was necessary for relationships to be significant between hospital structures (i.e. nurse manager ability, leadership, and support of nurses and staffing and resource adequacy) and hospital outcomes (i.e. missed nursing care and patient safety culture). Coworker incivility may be more suitable to study as a moderator, and certainly as a simple predictor, of patient safety outcomes.

**Missed nursing care as an outcome of hospital structures and processes.** In this study, missed nursing care was statistically insignificant in relation to the specified predictor variables (i.e. coworker incivility, nurse manager ability, leadership, and support of nurses, and staffing and resource adequacy) and dependent variable (i.e. missed nursing care). This result is plausible because one reason for these insignificant findings is that, in comparison to the literature, missed nursing care is studied and observed a mediating and moderating influencer on hospital outcomes (Kalish, 2009; Kalish 2010; Kalish 2011; Kalish 2013). Another possible

reason why missed nursing care was not a significant outcome variable is the way in which it is measured. As Castner and Dean-Baar (2014) also discussed, there are aspects of the original MISSCARE Survey Part A that are distinct as care of patients in regard to assisting with activities of daily living. These aspects of nursing care, in a large hospital setting, may be delegated to patient care technicians more often than performed by the registered nurse. Though these tasks are the responsibility of the registered nurse, it may not be an aspect of nursing care that is most relevant to measure to see if registered nursing care is being performed to the highest degree.

One major discussion point the results of this dissertation brings forward is how structures, processes, and outcomes should be defined in order to best study behavioral phenomenon in the nurse work environment. Donabedian's (1980) definitions for structures, processes, and outcomes were intended for improvement processes within health care system from a medical point of view. The definitions for structures, processes, and outcomes for this dissertation were used in a broadened sense to include the study of work place behavior phenomena in the hospital nurse work environment. However, inspection of results indicates that variables hypothesized to be an outcome (i.e. missed nursing care) was not found to be an outcome in multiple models tested. Thus, this study is one indication that hospital structures, processes, and outcomes must be best understood in a different way than originally proposed to guide quantitative path analysis studies with multiple variables. Post hoc-analyses indicated that nurse manager ability, leadership, and support of nurses and missed nursing care might not be static structures or processes; rather, these could be moving phenomenon that are apt to change. One way to determine this is to study perceptions of missed nursing care, and nurse manager ability, leadership, and support of nurses at different time points, perhaps every month,

throughout a one year period to understand how perceptions change and what may account for these changes. Leadership may function as a structure, and also as a changing process, but missed nursing care is a process as indicated from results of this study and others (Kalish, 2009).

Coworker incivility mediates the relationships between nurse manager ability, leadership, and support of nurses and missed nursing care. Stated differently, without the inclusion of coworker incivility as a mediating variable, there would be no significant relationship between nurse manager ability, leadership, and support of nurses and missed nursing care. This is significant because it helps demonstrate that missed nursing care is in some instances an outcome of structures and processes that compose the nurse work environment. The same was found for the mediating effect of coworker incivility on the relationship between staffing and resource adequacy and missed nursing care (i.e. question 12).

**Collective efficacy as a moderator.** Collective efficacy was studied as a moderator in a mediation-moderation model including coworker incivility as a mediator. There was some indication of collective efficacy as influential in explaining the interacting effect on staffing and patient safety outcomes, but this effect is not necessarily of clinical significance due to the already existing relationship between staffing and patient safety outcomes. In additional analysis, collective efficacy was a significant predictor of patient safety culture, missed nursing care, and coworker incivility. This additional analysis suggests that collective efficacy has a role in predicting hospital outcomes in a different capacity than originally studied. This might suggest that potential participants look upon studying a more positive variable, such as collective efficacy, in a more favorable way because reporting negative perceptions of coworker relations is a sensitive topic.

## Hierarchical Regression Post Conditional Process Analyses

In this study, *nurse manager leadership*, *staffing*, and *coworker incivility* were predictors of patient safety culture. Missed nursing care was not a significant outcome in the hierarchical regression equation designed to test the predictive influence of nurse manager leadership, staffing, and coworker incivility. This may be due to some error in measurement of missed nursing care as a variable. It cannot be concluded from this study alone if missed nursing care is not a significant outcome variable in hospitals.

### Conclusions

1. Positive perceptions of *nurse manager leadership* are related with more favorable perceptions of *patient safety culture*.
2. *Staffing and resource adequacy* is negatively related to *coworker incivility*. Positive perceptions of *staffing* were related with less reported *coworker incivility*.
3. There is a small negative inverse relation between *coworker incivility* and *patient safety culture*.
4. There is no statistically significant relationship between *coworker incivility* and *missed nursing care*.
5. There is a moderate positive relation between *nurse manager ability, leadership, and support of nurses* and *patient safety culture*.
6. There is a moderate positive relation *between staffing and resource adequacy* and *patient safety culture*.
7. There is no statistically significant relationship between *nurse manager ability, leadership, and support of nurses* and *missed nursing care*.

8. There is a small negative inverse correlation between *staffing and resource adequacy* and *missed nursing care*. More positive views of staffing related with lower scores of missed nursing care.
9. Mediation through *coworker incivility* is not required for a relationship to exist between *nurse manager ability, leadership, and support of nurses* and *patient safety culture*.
10. Due to a relationship already existing between *staffing and resource adequacy* and *patient safety culture*, there was not a conceptual rationale for testing the mediating effect that *coworker incivility* may have between *staffing and resource adequacy* and *patient safety culture*. *Coworker incivility* was not needed as a mediating variable to explain a relationship between *staffing* and *patient safety culture*.
11. *Coworker incivility* did not mediate a relationship between *nurse manager leadership* and *missed nursing care* perceptions.
12. *Coworker incivility* did not mediate a relationship between *staffing and resource adequacy* and *missed nursing care*.
13. *Coworker incivility* did not mediate a relationship between *nurse manager leadership* and *patient safety culture*. In the same model, there was not a mediating relationship between *nurse manager leadership* and *patient safety culture* through *coworker incivility* that could be moderated by *collective efficacy*.
14. There was some degree of moderation present between *staffing and resource adequacy* and *patient safety culture* with the proposed moderator (i.e. *collective efficacy*) and mediator (i.e. *coworker incivility*).
15. *Coworker incivility* did not mediate a relationship between *nurse manager ability, leadership, and support of nurses* and *missed nursing care*. In the same model, there was

not a mediating relationship between *nurse manager ability, leadership, and support of nurses* and *patient safety culture* through *coworker incivility* that could be moderated by *collective efficacy*.

16. There was a lack of mediation-moderation present between *staffing and resource adequacy* and *missed nursing care* with the proposed moderator (i.e. *collective efficacy*) and mediator (i.e. *coworker incivility*).
17. *Nurse manager leadership, staffing, and coworker incivility* explain a limited amount of variance in patient safety perceptions.
18. *Nurse manager leadership, staffing, and coworker incivility* did not predict *missed nursing care*.
19. Staff registered nurses did not report a high level of *coworker incivility*.
20. Staff registered nurses reported a high level of nurse manager ability, leadership, and support of nurses.
21. Staff registered nurses reported a high level of staffing and resource adequacy.
22. Staff registered nurses reported a high level of collective efficacy.
23. Staff registered nurses reported a low level of missed nursing care.
24. Staff registered nurses reported positive perceptions for patient safety cultures.

### **Limitations**

One limitation is that the sample is composed of more educated RNs from one health system, many with baccalaureate degrees; this likely has an effect on reported nurse perceptions. This population is not representative of hospital staff nurses in the United States of all educational preparations. In addition, the fact that many studies are conducted at this hospital system may contribute to survey fatigue and could have had an effect on response rate and

interest in taking this survey (Houston, S., personal communication, 2016). The contextual influence of conducting this study in a hospital system, after a large-scale merger between two previously distinct hospital systems, may also have been a historical threat to internal validity.

The participant recruitment method, which involved self-selection sampling, was a threat to internal validity. For example, participants may have chosen to answer the survey as a result of having either highly positive or negative perceptions of the nurse work environment. The nature of reporting personal perceptions about the work environment also may have had an impact on how participants chose to answer questions within the survey. Online data collection might have also influenced participant response rate. Many participants chose to quit the survey before completion most likely due to its length of 117 questions; this may have contributed to selection bias for those who had more positive perceptions of the work environment to report. Responses required of participants were superficial and it is unclear if participants had a good understanding of concepts under investigation.

Type I error poses a significant threat in generalizability of results found as statistically significant; the possibility of type I error calls into question the practicality of small statistically significant results (Shadish, Cook, & Campbell, 2002). Due to the combination of internal and external threats to validity, caution must be taken in interpreting these findings for practice changes. Results to intervene in hospitals in the creation of safe nurse work environments should be taken into consideration with existing literature and future investigations.

Results of this study might be limited due to the manner in which concepts were measured. For example, coworker incivility was studied explicitly between registered nurse coworkers and not all coworkers on a given patient care unit. This may have had an effect on the



frequency of coworker incivility reported. This study provides limited input specific to coworker incivility among registered nurse peers at the same level within the hospital organization.

## **Implications**

### **Nursing Practice**

Results of this study add to literature regarding patient safety culture as a significant outcome with which to measure quality outcomes in hospitals from the perspective of staff registered nurses (AHRQ, 2004a; AHRQ, 2004b; AHRQ, 2014). Registered nurses in bedside hospital practice could benefit from supportive and competent nurse leaders in management positions as demonstrated through the medium correlations *nurse manager ability, leadership, and support of nurses* had on *patient safety culture* as an outcome. The predictive effect of coworker incivility on less positive perceptions patient outcomes validates that coworker incivility is a problem, as perceived by registered nurses, that contributes to negative nurse work environments. Increasing the number of staff nurses available to provide all staff nurses on a patient care unit with a lower patient assignment is a logical, simple to understand intervention that could be justified in part with the results of this study.

Understanding that *nurse manager ability leadership and support of nurses* is a significant predictor of what can guide future interventions to sustain a high-quality nursing workforce through sufficient hospital support to provide safe patient care. Hospitals could, for instance, ensure and monitor that nurse leadership development is continuous for all nurse unit managers. Data to suggest a positive relationship between nurse manager ability leadership and support of nurses and *peer-to-peer registered nurse workplace incivility* might provide evidence to support nurse leadership training and guidelines within hospitals. Results further provide nurse leaders in hospitals with evidence to address negative influences of nursing management on

missed nursing care and a negative climate of patient safety within hospitals. This evidence is critical to developing and implementing evidence-based interventions to address ineffective nurse unit leadership and the impact of this phenomenon on the climate of patient safety in hospitals. Results of this study, which illuminate that *nurse manager ability, leadership, and support of nurses* is a significant predictor of positive *patient safety cultures*, could support funding to address nurse leadership development.

Collective efficacy, as a moderator, was rated positively by the majority of participants of this study, but had a minimal moderating effect on the mediating indirect effect of coworker incivility on patient safety cultures and missed nursing care. Collective efficacy was a significant predictor for coworker incivility, patient safety outcomes, and missed nursing care. Team-building interventions among staff nurses and other patient care personnel might be beneficial to decreasing coworker incivility by promoting a shared understanding among nurses who may have different cultural backgrounds. In addition, team-building interventions may improve staff nurse perceptions of the patient safety culture and overall belief in the ability of all staff on the unit to contribute to high quality patient care.

### **Nursing Education**

The positive effect that increased perceptions of nurse manager ability, leadership, and support of nurses had on coworker incivility, missed nursing care, and patient safety culture can be translated to the need to model appropriate leadership skills to nursing students. Nurse educators may use results from this study to support informing students about actual workplace environment problems affecting patients and nurses to foster a more resilient future workforce. Many of the nurses in this study, as demonstrated by the mode, had only been in their position for a period of one year. This lack of experience may indicate that new nurses are not prepared

for the realities of nursing practice and the frequency of coworker incivility as a negative hospital process. Educating nursing students about the realities of coworker incivility, and how strategies such as cognitive rehearsal, can help new nurses cope with the challenges of practice (ANA, 2015). In addition, continuing education for staff nurses about how to recognize and prevent the phenomenon of coworker incivility and its potential negative influence on patient safety cultures.

### **Nursing Policy**

Close attention to leadership is not only a statistically significant predictor of patient safety perceptions, but has implications in furthering policy development. Results of this study are consistent with position statements created to address workplace incivility and bullying by members of the American Nurses Association through a steering and advisory committee (ANA, 2015). Results from this study in part support the development of national policies to address understaffing of registered nurses in hospitals to safely care for patients. As the health care system continues to change, it is important that national standards for patient care quality, as evidenced by patient safety cultures, are advancing as much as standards for health care access and cost cutting. Policies and funded programs to develop strong, positive, and effective nurse manager leadership would benefit patients through the creation of safe patient care environments.

### **Nursing Theory**

Results for this study indicate that other variables are involved in predicting patient safety cultures in addition to leadership other than coworker incivility, collective efficacy, and staffing if nurse manager leadership only accounts for 15% of the variance of patient safety culture perceptions. Variables such as nurse perceived stress, nurse characteristics (i.e. age and

experience), and nurse turnover may be significant factors to explain how perceptions of patient safety cultures are influenced. Missed nursing care is more of a process, as demonstrated in other studies, and within this study as an insignificant outcomes variable. Mediation and moderation might still provide more information for nursing theory development with different variables. Qualitative studies about what constitutes positive nurse manager leadership might also inform a theoretical basis from which to study the effect of nurse manager leadership on patient safety cultures.

The significance of nurse manager leadership raises the theoretical question of the extent to which nurse supervisor incivility in hospitals might influence patient safety cultures. This concept is the merging of leadership capability and workplace incivility. Supervisor incivility, coworker incivility, and physician incivility have been studied previously as distinct concepts affecting the inexperienced registered nurses' mental health symptomatology (Laschinger, 2013). The influence of supervisor incivility, from nurse managers, might be an important aspect to study to explain how the well being of registered nurses may influence patient safety cultures.

In addition, the ANCC model for achieving and maintaining Magnet designation might, theoretically, be appropriate for empirical investigation of nurse work environment variables in studies with fewer variables. Including fewer variables in the ANCC framework may allow a more detailed understanding of how forces of Magnetism contribute to safe patient care from the view of staff registered nurses. For example, as the ANCC Magnet model suggests, nurse leadership is critical to having a positive influence on patient safety culture. This was confirmed with this study using the Donabedian framework. Perhaps it would be beneficial to study nurse leadership further, in the ANCC framework, to understand how nurse manager leadership

influences staff registered nurses, to have a more solid understanding of the skills for leadership nurses might need to hone to effectively lead other nurse colleagues.

### **Nursing Research**

This study involved asking participants to consider the influence of nurse manager leadership as a positive or negative phenomenon. However, this leaves the question, “What is “good leadership” to staff nurses?” It is well known that many leadership theories exist, but it is unclear what staff nurses want from a manager as far as guidance is concerned. This may involve a qualitative study to determine the meaning of “good leadership” to understand the connection between established leadership theory and staff nurse-developed theoretical ideas of helpful leadership. Organizations have inserted theoretical models into practice, as suggestions, such as the AACN did with authentic leadership. Researchers have studied the perceptions of nurses about specific leadership styles; however, there is not clear evidence to suggest that a prescribed leadership style is relevant to how staff nurses believe nurse managers should function as leaders.

Results of this study support further multivariate analyses to determine if future interventions, or additional descriptive studies, are needed to further explore the impact of the hospital structures on *missed nursing care* and *patient safety cultures* in organizations across the United States. Future intervention studies in the same hospital system to addressing a need to foster strong, supportive leadership, and decreased coworker incivility, are supported by the results of this study. This study adds to what is known about Donabedian’s (1980) conceptual framework for empirical testing in the study of *peer-to-peer registered nurse workplace incivility* may generate increased interest among nursing workforce researchers already engaged in important work about nurse staffing and the impact of such factors on patient care quality in

Results from this study shed light on the role of coworker incivility, as an indirect mediating hospital process, predicting the frequency of missed nursing care. *Missed nursing care* research evidence is growing to suggest that the concept of *missed nursing care* is a negative process in hospital settings through multiple research studies (Kalisch, Tschannen, Lee, & Friese, 2011; Kalisch, McLaughlin, & Dabney, 2012; Kalisch, Tschannen, & Lee, 2011; Kalisch, Tschannen, & Lee, 2012). Data exist to suggest that factors such as nurse staffing impact the frequency of *missed nursing care* as a process (Kalsich, Tschannen, & Lee, 2011). This study serves as one effort to fill the gap in nursing science about the extent that *peer-to-peer registered nurse workplace incivility* effects *missed nursing care* as an outcome rather than a process. Prior to this study, *missed nursing care* has still not been established in empirical descriptive literature as an outcome even though it is acknowledged as a detrimental process (Kalisch, 2014).

Future research studies to investigate missed nursing care, as an indicator of hospital organization effectiveness through nurse work environments, should be designed using more innovative techniques for data collection. Superficial survey responses about missed nursing care recollection do not capture in full the extent to which missed nursing care can occur, and what the implications may be for this phenomenon. Quasi-experimental methods in which participants are compared in groups could offer more information about the phenomenon of missed nursing care through direct observation. For example, nurse participants in an organization could learn about the concept of missed nursing care and complete nursing care simulations involving the potential to encounter missed nursing care. Participants could evaluate scenarios and might provide nurse researchers with more information about the extent of missed nursing care considering the complexity of care given, the patient population served, and the specific role of the registered nurse in determining the meaning and consequences of missed nursing care.

### **Recommendations for Future Research**

1. Further instrumental development is needed to refine a tool to measure missed nursing care from the registered nurses' point of view as a distinct phenomenon to more accurately capture how missed nursing care is perceived by registered nurses. This is a refinement of Kalisch's (2009) original concept of missed nursing care as a phenomenon viewed from all nursing perspectives (i.e. certified nursing assistants, licensed vocational nurses, and registered nurses).
2. Further research is needed to compare instruments to measure coworker incivility to have a better understanding of how to measure this phenomenon among registered nurses in hospital settings across patient care units.
3. As a phenomenon, workplace incivility as perceived by registered nurses should be studied from a broader perspective rather than only between registered nurse peers to fully capture how registered nurses perceive workplace incivility.
4. Investigations to further understand the effect of positive perceptions of nurse manager ability, leadership, and support of nurses has on staff nurse retention, and patient outcomes, is needed to create healthy nurse work environments
5. Future research should involve intervention studies for leadership development, within a more simplified model, to improve patient safety cultures in hospitals. These studies should use a shorter survey to encourage a larger response rate from participants.
6. Nurse work environment studies should be conducted with the use of the ANCC framework to substantiate its use for measuring how hospitals with excellent nursing standards influence safe patient outcomes.

## Chapter Summary

Discussion of findings of this study, and the relationship of these findings to the literature, were presented. Implications of these findings to nursing practice, education, research, theory, and policy were discussed. Recommendations for future research and interventions to address coworker incivility and missed nursing care were discussed as part of implications for nursing practice, education, research, theory, and policy.

This study is consistent with the numerous studies in nursing that have used Donabedian's structures-processes-outcomes model (Aiken, Clarke, & Sloane, 2002; Castner & Dean-Baar, 2014; Kalisch & Lee, 2010). In addition, results from this dissertation provide some confirmation that nurse work environment phenomena in the health care system (i.e. *nurse manager ability leadership and support of nurses, staffing and resource adequacy, coworker incivility, collective efficacy, patient safety culture, and missed nursing care*) are relevant within a larger, well-established systems-level conceptual framework (Donabedian, 1980). This initial conditional process investigation of *nurse manager ability leadership and support of nurses, staffing and resource adequacy, coworker incivility, collective efficacy, patient safety culture, and missed nursing care* adds to what is known about systems-level thinking relevant to hospital based work environments. For example, results of this study provide nurse scientists with evidence that patient safety culture is an outcome as theoretically consistent with Donabedian's (1980) structure-process-outcome framework. *Missed nursing care* was included within a different conceptual framework and context specific to hospital organization systems through a different lens outside of the numerous research studies conducted by Kalisch and colleagues (Kalisch, Landstrom, & Williams, 2009; Kalisch & Lee, 2012a; Kalisch, McLaughlin, & Dabney, 2012; Kalsich, Tscannen, & Lee, 2011; Kalisch, Tschannen, & Lee, 2012).



The investigation of a framework linking related concepts in nursing science to advance knowledge about health care working conditions for nurses, with an emphasis on the impact of such factors on *patient safety cultures*, was important to provide evidence in support of theoretical development in nursing science in the hospital nurse work environment. Results add to what is known about relationships between antecedents and outcomes between *peer-to-peer registered nurse workplace incivility* and *collective efficacy* using the Donabedian Structure-Process-Outcomes conceptual framework.

Results from this study support further investigations of missed nursing care as a hospital process, rather than outcome, in order to address such omissions, as a problem, to further improve patient safety cultures from the perspective of registered nurses. The inverse relationship between *nurse manager leadership, ability, and support of nurses* and *coworker incivility* needs further explicating in future investigations to determine if this is found in multiple, longitudinal studies. Based on this study, and studies prior, interventions are needed to address the problem of coworker incivility. Such interventions could be centered on strong nurse leadership, both formal and informal, to have an influence on decreasing coworker incivility. The effect of collective efficacy as a moderator is inconclusive in this particular study; it may be that passive group cohesion through collective efficacy is not enough to moderate the harmful effect of coworker incivility on missed nursing care and patient safety cultures.

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**Appendix A**  
**Data Collection Instruments**

## Demographic Questions

*Adapted from demographic questions asked by Laschinger (2014)*

(Page 192 included Demographic Questions).

**Practice Environment Scale of the Nursing Work Index (PES-NWI) (31 items)**

(Page 193 included the PES-NWI questions).

**Hospital Survey on Patient Safety Culture (AHRQ, 2004) (42 items)**

QUESTIONS ON HOSPITAL PATIENT SAFETY CULTURE

(Pages 194 – 196 included the AHRQ Hospital Survey on Patient Safety).

**Collective Efficacy Beliefs Scale (7 items) (Riggs & Knight, 1994)**

(Page 195 included the Collective Efficacy Beliefs Scale).

**MISSCARE: Part A**

(Page 196 included MISSCARE: Part A).

## **Workplace Incivility Scale (WIS)**

(Page 197 included the WIS).

## **Appendix B**

### **Permissions to Use Instruments**



## Permission to use The Collective Efficacy Beliefs Scale

**From:** Matt Riggs <MRiggs@csusb.edu>  
**Sent:** Tuesday, April 14, 2015 5:34 PM  
**To:** Jessica Grace Smith  
**Subject:** Re: Permission to Use the Collective Efficacy Beliefs Scale

Hello Jessica!

I would be happy to have you use the scale. Let me know if you have any questions, and please share information about any publications or presentations that result from your work!

Matt

**From:** Jessica Grace Smith <jgsmith@uwm.edu>  
**Sent:** Tuesday, April 14, 2015 12:50 PM  
**To:** Matt Riggs  
**Subject:** Permission to Use the Collective Efficacy Beliefs Scale

Dr. Riggs,

I am writing to ask your permission to use the Collective Efficacy Beliefs Scale as discussed in your 1994 publication in the Journal of Applied Psychology, "The impact of perceived group success-failure on motivational beliefs and attitudes: A causal model." I am a PhD in nursing candidate at the University of Wisconsin-Milwaukee planning to explore collective efficacy as a moderator variable that may influence hospital structures and outcomes from the perception of staff nurses. Please let me know if I may use the scale you developed for collective efficacy in my dissertation research.

Thank you,  
Jessica Smith



INVOICE NO. N/A  
Federal Tax I.D. 53-0205890  
Date: May 5, 2015

IN MAKING PAYMENT REFER TO THE ABOVE INVOICE NUMBER

Jessica G. Smith  
441 Country Road 1380  
Alvord, TX 76225

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Request is for the following APA-copyrighted material: Collective Efficacy Beliefs Scale

- Appendix, p. 766, from Riggs, M. L., & Knight, P. A. (1994). The impact of perceived group success-failure on motivational beliefs and attitudes: A causal model. *Journal of Applied Psychology*, 79(5), 755-766. <http://dx.doi.org/10.1037/0021-9010.79.5.755>

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PERMISSION GRANTED ON ABOVE TERMS:

Applicant  
Jessica G. Smith  
Date  
6/29/15

for the American Psychological Association  
May 5, 2015  
Date

\_\_\_\_\_ I wish to cancel my request for permission at this time.

## Permission to use the Workplace Incivility Scale

**From:** Lilia Cortina <lilia@umich.edu>  
**Sent:** Monday, April 13, 2015 8:36 PM  
**To:** Jessica Grace Smith  
**Subject:** Re: Permission to Use the Workplace Incivility Scale

Hello,

The Workplace Incivility Scale (WIS) is freely available for use via its publication in a copyrighted journal. All authors on that journal article support the use of this scale in scientific research (not for profit).

To view the published article containing the WIS, please visit my lab website:  
<http://www.lsa.umich.edu/psych/lilia-cortina-lab/>

All best,  
Lilia Cortina

On Mon, Apr 13, 2015 at 7:28 PM, Jessica Grace Smith <[jgsmith@uwm.edu](mailto:jgsmith@uwm.edu)> wrote:  
Dr. Cortina,

My name is Jessica Smith and I am a PhD candidate in nursing at the University of Wisconsin-Milwaukee. I am emailing to ask for your permission to use the workplace incivility scale (WIS) as part of my dissertation data collection plan to measure the source of workplace incivility from staff nurse coworkers in hospitals.

Please let me know if using the WIS is acceptable to measure nurse coworker perceptions of workplace incivility in the hospital environment.

Thanks,  
Jessica Smith

--

**Lilia M Cortina, PhD**  
Professor of Psychology  
Professor & Graduate Director of Women's Studies  
University of Michigan

Web: <http://www.lsa.umich.edu/psych/lilia-cortina-lab/>

Psychology Office: 3270 East Hall  
Women's Studies Office: 2110 Lane Hall  
Tel: 734.647.3956  
Fax: 734.647.9440

**Permission to Use the Hospital Survey on Patient Safety Culture**

From: [SafetyCultureSurveys@westat.com](mailto:SafetyCultureSurveys@westat.com) <[SafetyCultureSurveys@westat.com](mailto:SafetyCultureSurveys@westat.com)>  
Sent: Tuesday, June 30, 2015 1:02 PM  
To: Jessica Grace Smith  
Cc: [SafetyCultureSurveys@westat.com](mailto:SafetyCultureSurveys@westat.com)  
Subject: RE: Permission to Use AHRQ Hospital Survey on Patient Safety Culture: \*ref#24-52971

Hello Jessica,  
The AHRQ Surveys on Patient Safety Culture for Hospitals is not copyright protected. The surveys and all related materials are free and available for public use and can be downloaded from the AHRQ Web site at: <http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/hospital/index.html>

You may also find the following Research Reference List to be of interest to you:  
<http://www.ahrq.gov/professionals/quality-patient-safety/patientsafetyculture/resources/index.html>

Please let me know if I can be of any further assistance.

Thanks,  
Ryan Hare  
AHRQ Surveys on Patient Safety Culture Technical Assistance  
[SafetyCultureSurveys@westat.com](mailto:SafetyCultureSurveys@westat.com)  
[1-888-324-9749](tel:1-888-324-9749)

Sign up to receive notices about the Surveys on Patient Safety Culture at:  
[https://subscriptions.ahrq.gov/service/multi\\_subscribe.html?code=USAHRQ](https://subscriptions.ahrq.gov/service/multi_subscribe.html?code=USAHRQ). Check Surveys on Patient Safety Culture and the specific surveys that you are interested in.

++++  
++++

Hello,

I was wondering if I needed to obtain permission to use the AHRQ's Hospital Survey on Patient Safety Culture for my dissertation research. Is there a form I need to submit to obtain permission?

Thank you,  
Jessica Smith

Note: This email is sent with reference to Incident #52971.  
Please mention reference number 'ref#24-52971' for further email communications.

## Permission to Use the Practice Environment Scale

**From:** Wiley Global Permissions <[permissions@wiley.com](mailto:permissions@wiley.com)>  
**Sent:** Thursday, July 23, 2015 6:24 AM  
**To:** Jessica Grace Smith  
**Subject:** RE: Permission to use Practice Environment Scale (Lake, 2002)

Dear Jessica Smith

Thank you for your request.

Permission is granted for you to use the material requested for your thesis/dissertation subject to the usual acknowledgements and on the understanding that you will reapply for permission if you wish to distribute or publish your thesis/dissertation commercially. You must also duplicate the copyright notice that appears in the Wiley publication in your use of the Material.

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Yours sincerely

Duncan James  
Associate Permissions Manager  
John Wiley & Sons Ltd  
The Atrium  
Southern Gate, Chichester  
West Sussex, PO19 8SQ  
UK

**From:** Jessica Grace Smith [mailto:[jgsmith@uwm.edu](mailto:jgsmith@uwm.edu)]  **Sent:** Monday, 29 June, 2015 11:53 PM  **To:** Wiley Global Permissions  **Subject:** Permission to use Practice Environment Scale (Lake, 2002)

Hello,

I am requesting for permission to use a measurement tool (Practice Environment Scale) that was published in the following article (a Wiley publication):

Lake, E. T. (2002). Development of the Practice Environment Scale of the Nursing Work Index. *Research in Nursing & Health*, 25, 176-188.

The reason for this request is to use this measurement tool as part of my dissertation research to

fulfill requirements for a PhD in Nursing. I appreciate any assistance you may be able to provide in obtaining permission to use this measurement tool.

Thanks,  
Jessica Smith

## **Appendix C**

### **First Item of Online Survey: Informed Consent**

The purpose of this research study is to better understand registered nurse perceptions of factors comprising hospital structures, processes, and outcomes as relevant to the direct bedside care registered nurse. Participation in this study should take no longer than 30 minutes.

All responses will be confidential. The risks of participating in this study are minimal. IP addresses will not be indexed through the survey software. Participation in this research study is completely voluntary. You may not directly benefit from participating in this study. However, future hospitals or organizations could benefit from the study results in terms of improving hospital work environments.

**Please consider completing this survey at home, or not during work hours, since you will be receiving gift card compensation.**

Completion and submission of this online survey indicates informed consent to allow for data collection and analysis. Informed consent is further discussed by the U.S. Department of Health and Human Services at <http://www.hhs.gov>. This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health.



## **Appendix D**

### **Participant Recruitment through Emails and Flyers**

## First Recruitment Email: Week 1

### Informed Consent and Invitation for Study Participation

Dear registered nurse,

As an RN at Baylor Scott and White Health, you have the opportunity to be one of 220 participants in a nursing research study that will involve answering an online survey about your perceptions, as a direct patient care nurse, of hospital structures, processes, and outcomes.

My name is Jessica Smith. I am a PhD candidate in nursing at the University of Wisconsin-Milwaukee. The purpose of this research study is to better understand registered nurse perceptions of factors comprising hospital structures, processes, and outcomes as relevant to the direct bedside care registered nurse. You have been selected as a potential participant because of your valuable perspective, as a staff registered nurse who provides direct bedside patient care, about hospitals as organizations. Such information can contribute to nursing science efforts to improve hospital work environments for nurses.

Participation in this study will involve filling out an online survey that should take no longer than 30 minutes to complete. The survey link is highlighted below. Please check your emails on a frequent basis in order to participate, and obtain compensation, for study participation.

**Please click the following link to participate: [Removed]**

All responses will be confidential. The risks of participating in this study are minimal. IP addresses will not be indexed through the survey software. Participation in this research study is completely voluntary. You may not directly benefit from participating in this study. However, future hospitals or organizations could benefit from the study results in terms of improving hospital work environments.

Only the first 220 Baylor Scott & White registered nurse to complete the survey will have the opportunity to be eligible for a \$20.00 amazon.com gift card. Participant confidentiality will be strictly maintained. The survey about your hospital perceptions is not linkable to the form to obtain your name and mailing address, as I do not want to link study data to your personal information. Names and addresses will only be collected at the end of the survey through a link in order to distribute your \$20.00 amazon.com gift cards. **Please consider completing this survey at home, or not during work hours, since you will be receiving gift card compensation.** Study results from this project will be shared with nurses at participating hospitals and used for interpretation for the student principal investigator's dissertation.

Completion and submission of the online survey indicates **informed consent** to allow for data collection and analysis. For this study, **informed consent** means that participants understands and consents to the collection of self-perception data for analysis about hospital structures, processes, and outcomes. Informed consent is further discussed by the U. S. Department of Health and Human Services at <http://www.hhs.gov>.

This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health.

If you have questions about this research study, please send these to [jgsmith@uwm.edu](mailto:jgsmith@uwm.edu). If you have any questions about your rights as a research subject, please contact Dr. Lawrence R. Schiller, M.D., IRB Chair, at 214-820-2687.

Participating in nursing research is one effort to advance our understanding of the important role of nurses in hospital patient care. Without the help of nurses like you, this important research would not be conducted. Thank you for considering this opportunity.

Sincerely,  
Jessica Smith, BSN, RN, PhD Candidate

## **Second Recruitment Email Reminder: Week 2**

### **Informed Consent and Invitation for Study Participation**

Dear registered nurse,

This is a second reminder email about an opportunity that registered nurses at Baylor Scott and White Health have to participate in nursing research. If you have already participated, thank you! If not, please learn more about the opportunity to participate in the following email.

As an RN at Baylor Scott and White Health, you have the opportunity to be one of 220 participants in a nursing research study that will involve answering an online survey about your perceptions, as a direct patient care nurse, of hospital structures, processes, and outcomes.

My name is Jessica Smith. I am a PhD candidate in nursing at the University of Wisconsin-Milwaukee. The purpose of this research study is to better understand registered nurse perceptions of factors comprising hospital structures, processes, and outcomes as relevant to the direct bedside care registered nurse. You have been selected as a potential participant because of your valuable perspective, as a staff registered nurse who provides direct bedside patient care, about hospitals as organizations. Such information can contribute to nursing science efforts to improve hospital work environments for nurses.

Participation in this study will involve filling out an online survey that should take no longer than 30 minutes to complete. The survey link is highlighted below. Please check your emails on a frequent basis in order to participate, and obtain compensation, for study participation.

**Please click the following link to participate: [Removed]**

All responses will be confidential. The risks of participating in this study are minimal. IP addresses will not be indexed through the survey software. Participation in this research study is completely voluntary.

You may not directly benefit from participating in this study. However, future hospitals or organizations could benefit from the study results in terms of improving hospital work environments.

Only the first 220 Baylor Scott & White registered nurse to complete the survey will have the opportunity to be eligible for a \$20.00 amazon.com gift card. Participant confidentiality will be strictly maintained. The survey about your hospital perceptions is not linkable to the form to obtain your name and mailing address, as I do not want to link study data to your personal information. Names and addresses will only be collected at the end of the survey through a link in order to distribute your \$20.00 amazon.com gift cards. **Please consider completing this survey at home, or not during work hours, since you will be receiving gift card compensation.** Study results from this project will be shared with nurses at participating hospitals and used for interpretation for the student principal investigator's dissertation.

Completion and submission of the online survey indicates **informed consent** to allow for data collection and analysis. For this study, **informed consent** means that participants understands and consents to the collection of self-perception data for analysis about hospital structures, processes, and outcomes. Informed consent is further discussed by the U. S. Department of Health and Human Services at <http://www.hhs.gov>.

This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health.

If you have questions about this research study, please send these to [jgsmith@uwm.edu](mailto:jgsmith@uwm.edu). If you have any questions about your rights as a research subject, please contact Dr. Lawrence R. Schiller, M.D., IRB Chair, at 214-820-2687.

Participating in nursing research is one effort to advance our understanding of the important role of nurses in hospital patient care. Without the help of nurses like you, this important research would not be conducted. Thank you for considering this opportunity.

Sincerely,  
Jessica Smith, BSN, RN, PhD Candidate

### **Third Recruitment Email Reminder: Week 3**

#### **Informed Consent and Invitation for Study Participation**

Dear registered nurse,

This is a third reminder email about an opportunity that registered nurses at Baylor Scott and White Health have to participate in nursing research. If you have already participated, thank you! If not, please learn more about the opportunity to participate in the following email.

As an RN at Baylor Scott and White Health, you have the opportunity to be one of 220 participants in a nursing research study that will involve answering an online survey about your perceptions, as a direct patient care nurse, of hospital structures, processes, and outcomes.

My name is Jessica Smith. I am a PhD candidate in nursing at the University of Wisconsin-Milwaukee. The purpose of this research study is to better understand registered nurse perceptions of factors comprising hospital structures, processes, and outcomes as relevant to the direct bedside care registered nurse. You have been selected as a potential participant because of your valuable perspective, as a staff registered nurse who provides direct bedside patient care, about hospitals as organizations. Such information can contribute to nursing science efforts to improve hospital work environments for nurses.

Participation in this study will involve filling out an online survey that should take no longer than 30 minutes to complete. The survey link is highlighted below. Please check your emails on a frequent basis in order to participate, and obtain compensation, for study participation.

**Please click the following link to participate: [Removed]**

All responses will be confidential. The risks of participating in this study are minimal. IP addresses will not be indexed through the survey software. Participation in this research study is completely voluntary. You may not directly benefit from participating in this study. However, future hospitals or organizations could benefit from the study results in terms of improving hospital work environments.

Only the first 220 Baylor Scott & White registered nurse to complete the survey will have the opportunity to be eligible for a \$20.00 amazon.com gift card. Participant confidentiality will be strictly maintained. The survey about your hospital perceptions is not linkable to the form to obtain your name and mailing address, as I do not want to link study data to your personal information. Names and addresses will only be collected at the end of the survey through a link in order to distribute your \$20.00 amazon.com gift cards. **Please consider completing this survey at home, or not during work hours, since you will be receiving gift card compensation.** Study results from this project will be shared with nurses at participating hospitals and used for interpretation for the student principal investigator's dissertation.

Completion and submission of the online survey indicates **informed consent** to allow for data collection and analysis. For this study, **informed consent** means that participants understands and consents to the collection of self-perception data for analysis about hospital structures,

processes, and outcomes. Informed consent is further discussed by the U. S. Department of Health and Human Services at <http://www.hhs.gov>.

This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health.

If you have questions about this research study, please send these to [jgsmith@uwm.edu](mailto:jgsmith@uwm.edu). If you have any questions about your rights as a research subject, please contact Dr. Lawrence R. Schiller, M.D., IRB Chair, at 214-820-2687.

Participating in nursing research is one effort to advance our understanding of the important role of nurses in hospital patient care. Without the help of nurses like you, this important research would not be conducted. Thank you for considering this opportunity.

Sincerely,  
Jessica Smith, BSN, RN, PhD Candidate

#### **Fourth Recruitment Email Reminder: Week 4**

##### **Informed Consent and Invitation for Study Participation**

Dear registered nurse,

This is another reminder email about an opportunity that registered nurses at Baylor Scott and White Health have to participate in nursing research. If you have already participated, thank you! If not, please learn more about the opportunity to participate in the following email.

As an RN at Baylor Scott and White Health, you have the opportunity to be one of 220 participants in a nursing research study that will involve answering an online survey about your perceptions, as a direct patient care nurse, of hospital structures, processes, and outcomes.

My name is Jessica Smith. I am a PhD candidate in nursing at the University of Wisconsin-Milwaukee. The purpose of this research study is to better understand registered nurse perceptions of factors comprising hospital structures, processes, and outcomes as relevant to the direct bedside care registered nurse. You have been selected as a potential participant because of your valuable perspective, as a staff registered nurse who provides direct bedside patient care, about hospitals as organizations. Such information can contribute to nursing science efforts to improve hospital work environments for nurses.

Participation in this study will involve filling out an online survey that should take no longer than 30 minutes to complete. The survey link is highlighted below. Please check your emails on a frequent basis in order to participate, and obtain compensation, for study participation.

**Please click the following link to participate: [Removed]**

All responses will be confidential. The risks of participating in this study are minimal. IP addresses will not be indexed through the survey software. Participation in this research study is completely voluntary. You may not directly benefit from participating in this study. However, future hospitals or organizations could benefit from the study results in terms of improving hospital work environments.

Only the first 220 Baylor Scott & White registered nurse to complete the survey will have the opportunity to be eligible for a \$20.00 amazon.com gift card. Participant confidentiality will be strictly maintained. The survey about your hospital perceptions is not linkable to the form to obtain your name and mailing address, as I do not want to link study data to your personal information. Names and addresses will only be collected at the end of the survey through a link in order to distribute your \$20.00 amazon.com gift cards. **Please consider completing this survey at home, or not during work hours, since you will be receiving gift card compensation.** Study results from this project will be shared with nurses at participating hospitals and used for interpretation for the student principal investigator's dissertation.

Completion and submission of the online survey indicates **informed consent** to allow for data collection and analysis. For this study, **informed consent** means that participants understands and consents to the collection of self-perception data for analysis about hospital structures, processes, and outcomes. Informed consent is further discussed by the U. S. Department of Health and Human Services at <http://www.hhs.gov>.

This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health.

If you have questions about this research study, please send these to [jgsmith@uwm.edu](mailto:jgsmith@uwm.edu). If you have any questions about your rights as a research subject, please contact Dr. Lawrence R. Schiller, M.D., IRB Chair, at 214-820-2687.

Participating in nursing research is one effort to advance our understanding of the important role of nurses in hospital patient care. Without the help of nurses like you, this important research would not be conducted. Thank you for considering this opportunity.

Sincerely,  
Jessica Smith, BSN, RN, PhD Candidate

### **Fifth Recruitment Email Reminder: Week 5**

#### **Informed Consent and Invitation for Study Participation**

Dear registered nurse,

This is another reminder email about an opportunity that registered nurses at Baylor Scott and White Health have to participate in nursing research. If you have already participated, thank you! If not, please learn more about the opportunity to participate in the following email.

As an RN at Baylor Scott and White Health, you have the opportunity to be one of 220 participants in a nursing research study that will involve answering an online survey about your perceptions, as a direct patient care nurse, of hospital structures, processes, and outcomes.

My name is Jessica Smith. I am a PhD candidate in nursing at the University of Wisconsin-Milwaukee. The purpose of this research study is to better understand registered nurse perceptions of factors comprising hospital structures, processes, and outcomes as relevant to the direct bedside care registered nurse. You have been selected as a potential participant because of your valuable perspective, as a staff registered nurse who provides direct bedside patient care, about hospitals as organizations. Such information can contribute to nursing science efforts to improve hospital work environments for nurses.

Participation in this study will involve filling out an online survey that should take no longer than 30 minutes to complete. The survey link is highlighted below. Please check your emails on a frequent basis in order to participate, and obtain compensation, for study participation.

**Please click the following link to participate: [Removed]**

All responses will be confidential. The risks of participating in this study are minimal. IP addresses will not be indexed through the survey software. Participation in this research study is completely voluntary. You may not directly benefit from participating in this study. However, future hospitals or organizations could benefit from the study results in terms of improving hospital work environments.

Only the first 220 Baylor Scott & White registered nurse to complete the survey will have the opportunity to be eligible for a \$20.00 amazon.com gift card. Participant confidentiality will be strictly maintained. The survey about your hospital perceptions is not linkable to the form to obtain your name and mailing address, as I do not want to link study data to your personal information. Names and addresses will only be collected at the end of the survey through a link in order to distribute your \$20.00 amazon.com gift cards. **Please consider completing this survey at home, or not during work hours, since you will be receiving gift card compensation.** Study results from this project will be shared with nurses at participating hospitals and used for interpretation for the student principal investigator's dissertation.

Completion and submission of the online survey indicates **informed consent** to allow for data collection and analysis. For this study, **informed consent** means that participants understands and consents to the collection of self-perception data for analysis about hospital structures, processes, and outcomes. Informed consent is further discussed by the U. S. Department of Health and Human Services at <http://www.hhs.gov>.

This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health.

If you have questions about this research study, please send these to [jgsmith@uwm.edu](mailto:jgsmith@uwm.edu). If you have any questions about your rights as a research subject, please contact Dr. Lawrence R. Schiller, M.D., IRB Chair, at 214-820-2687.



Participating in nursing research is one effort to advance our understanding of the important role of nurses in hospital patient care. Without the help of nurses like you, this important research would not be conducted. Thank you for considering this opportunity.

Sincerely,  
Jessica Smith, BSN, RN, PhD Candidate

## **Final Recruitment Email Reminder: Week 6**

### **Informed Consent and Invitation for Study Participation**

Dear registered nurse,

This is the final reminder email about an opportunity that registered nurses at Baylor Scott and White Health have to participate in nursing research. If you have already participated, thank you! If not, please learn more about the opportunity to participate in the following email.

As an RN at Baylor Scott and White Health, you have the opportunity to be one of 220 participants in a nursing research study that will involve answering an online survey about your perceptions, as a direct patient care nurse, of hospital structures, processes, and outcomes.

My name is Jessica Smith. I am a PhD candidate in nursing at the University of Wisconsin-Milwaukee. The purpose of this research study is to better understand registered nurse perceptions of factors comprising hospital structures, processes, and outcomes as relevant to the direct bedside care registered nurse. You have been selected as a potential participant because of your valuable perspective, as a staff registered nurse who provides direct bedside patient care, about hospitals as organizations. Such information can contribute to nursing science efforts to improve hospital work environments for nurses.

Participation in this study will involve filling out an online survey that should take no longer than 30 minutes to complete. The survey link is highlighted below. Please check your emails on a frequent basis in order to participate, and obtain compensation, for study participation.

**Please click the following link to participate: [Removed]**

All responses will be confidential. The risks of participating in this study are minimal. IP addresses will not be indexed through the survey software. Participation in this research study is completely voluntary. You may not directly benefit from participating in this study. However, future hospitals or organizations could benefit from the study results in terms of improving hospital work environments.

Only the first 220 Baylor Scott & White registered nurse to complete the survey will have the opportunity to be eligible for a \$20.00 amazon.com gift card. Participant confidentiality will be strictly maintained. The survey about your hospital perceptions is not linkable to the form to obtain your name and mailing address, as I do not want to link study data to your personal information. Names and addresses will only be collected at the end of the survey through a link in order to distribute your

\$20.00 amazon.com gift cards. **Please consider completing this survey at home, or not during work hours, since you will be receiving gift card compensation.** Study results from this project will be shared with nurses at participating hospitals and used for interpretation for the student principal investigator's dissertation.

Completion and submission of the online survey indicates **informed consent** to allow for data collection and analysis. For this study, **informed consent** means that participants understands and consents to the collection of self-perception data for analysis about hospital structures, processes, and outcomes. Informed consent is further discussed by the U. S. Department of Health and Human Services at <http://www.hhs.gov>.

This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health.

If you have questions about this research study, please send these to [jgsmith@uwm.edu](mailto:jgsmith@uwm.edu). If you have any questions about your rights as a research subject, please contact Dr. Lawrence R. Schiller, M.D., IRB Chair, at 214-820-2687.

Participating in nursing research is one effort to advance our understanding of the important role of nurses in hospital patient care. Without the help of nurses like you, this important research would not be conducted. Thank you for considering this opportunity.

Sincerely,  
Jessica Smith, BSN, RN, PhD Candidate

## *Attention Registered Nurses*

If you are an RN who provides direct bedside patient care, then you have an opportunity to provide your perceptions of the hospital nurse work environment.

Taking part in this confidential study involves filling out an online survey that takes about 30 minutes of your time.



**Please check your email for a link to take part.** You may be eligible to receive payment for your time.

If you need more information about this study, then please email Jessica Smith, BSN, RN, PhD Candidate, at [jgsmith@uwm.edu](mailto:jgsmith@uwm.edu).

Sincerely,  
Jessica Smith, BSN, RN, PhD Candidate

**This research study has been approved for the protection of human subjects board at the University of Wisconsin-Milwaukee and at Baylor Scott & White Health**

**Appendix E**

**UWM IRB Approval Documents**



Jessica Rice  
IRB Administrator  
Institutional Review Board  
Engelmann 270  
P. O. Box 413  
Milwaukee, WI 53201-0413  
(414) 229-3182 phone  
(414) 229-6729 fax

<http://www.irb.uwm.edu>  
[ricej@uwm.edu](mailto:ricej@uwm.edu)

### New Study - Notice of IRB Expedited Approval

Date: June 23, 2015

To: Karen Morin, PhD  
Dept: College of Nursing

Cc: Jessica Smith

IRB#: 15.355

Title: REGISTERED NURSE PERCEPTIONS OF COWORKER INCIVILITY AND COLLECTIVE EFFICACY AS INFLUENTIAL TO HOSPITAL STRUCTURES AND OUTCOMES: A MEDIATION-MODERATION PATH ANALYSIS

After review of your research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol has been approved as minimal risk Expedited under **Category 7** as governed by 45 CFR 46.110. In addition, your study has been approved to waive the requirement to document informed consent for these participants as governed by 45 CFR 46.117 (c)(2).

This protocol has been approved on **June 23, 2015** for one year. IRB approval will expire on **June 22, 2016**. If you plan to continue any research related activities (e.g., enrollment of subjects, study interventions, data analysis, etc.) past the date of IRB expiration, a continuation for IRB approval must be filed by the submission deadline. If the study is closed or completed before the IRB expiration date, please notify the IRB by completing and submitting the Continuing Review form found on the IRB website.

Any proposed changes to the protocol must be reviewed by the IRB before implementation, unless the change is specifically necessary to eliminate apparent immediate hazards to the subjects. It is the principal investigator's responsibility to adhere to the policies and guidelines set forth by the UWM IRB, maintain proper documentation of study records and promptly report to the IRB any adverse events which require reporting. The principal investigator is also responsible for ensuring that all study staff receive appropriate training in the ethical guidelines of conducting human subjects research.

If you plan to continue any research related activities (e.g., enrollment of subjects, study interventions, data analysis, etc.) past the date of IRB expiration, a continuation for IRB approval must be filed by the submission deadline. If the study is closed or completed before the IRB expiration date, please notify the IRB by completing and submitting the Continuing Review form.

As Principal Investigator, it is your responsibility to adhere to UWM and UW System Policies, and any applicable state and federal laws governing activities which are independent of IRB review/approval (e.g., [FERPA](#), [Radiation Safety](#), [UWM Data Security](#), [UW System policy on](#)

[Prizes, Awards and Gifts](#), state gambling laws, etc.). When conducting research at institutions outside of UWM, be sure to obtain permission and/or approval as required by their policies.

Contact the IRB office if you have any further questions. Thank you for your cooperation and best wishes for a successful project.

Respectfully,

Jessica P. Rice  
IRB Administrator



Melissa Spadanuda  
IRB Manager  
Institutional Review Board  
Engelmann 270  
P. O. Box 413  
Milwaukee, WI 53201-0413  
(414) 229-3173 phone  
(414) 229-6729 fax

<http://www.irb.uwm.edu>  
[spadanud@uwm.edu](mailto:spadanud@uwm.edu)

**Modification/Amendment - IRB Expedited Approval**

**Date:** October 27, 2015

**To:** Karen Morin, PhD  
**Dept:** College of Nursing

**Cc:** Jessica Smith

**IRB#:** 15.355

**Title:** RN PERCEPTIONS OF COWORKER INCIVILITY AND COLLECTIVE EFFICACY AS INFLUENTIAL TO HOSPITAL STRUCTURES AND OUTCOMES

After review of your research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol has received modification/amendment approval for:

- Study Title change
- Change payment from raffle to \$25 for each participant
- Minor Changes to all forms based on approval from Baylor IRB

IRB approval will expire on **June 22, 2016**. If you plan to continue any research related activities (e.g., enrollment of subjects, study interventions, data analysis, etc.) past the date of IRB expiration, a Continuation for IRB Approval must be filed by the submission deadline. If the study is closed or completed before the IRB expiration date, please notify the IRB by completing and submitting the Continuing Review form in IRBManager.

Any proposed changes to the protocol must be reviewed by the IRB before implementation, unless the change is specifically necessary to eliminate apparent immediate hazards to the subjects. The principal investigator is responsible for adhering to the policies and guidelines set forth by the UWM IRB, maintaining proper documentation of study records and promptly reporting to the IRB any adverse events which require reporting. The principal investigator is also responsible for ensuring that all study staff receive appropriate training in the ethical guidelines of conducting human subjects research.

As Principal Investigator, it is also your responsibility to adhere to UWM and UW System Policies, and any applicable state and federal laws governing activities which are independent of IRB review/approval (e.g., [FERPA](#), [Radiation Safety](#), [UWM Data Security](#), [UW System policy on Prizes, Awards and Gifts](#), state gambling laws, etc.). When conducting research at institutions outside of UWM, be sure to obtain permission and/or approval as required by their policies.

Contact the IRB office if you have any further questions. Thank you for your cooperation and best wishes for a successful project.

Respectfully,

Melissa C. Spadanuda  
IRB Manager





UNIVERSITY of WISCONSIN

Department of University Safety & Assurances

Melissa Spadanuda  
IRB Manager  
Institutional Review Board  
Engelmann 270  
P. O. Box 413  
Milwaukee, WI 53201-0413  
(414) 229-3173 phone  
(414) 229-6729 fax

<http://www.irb.uwm.edu>  
[spadanud@uwm.edu](mailto:spadanud@uwm.edu)

**Modification/Amendment - IRB Expedited Approval**

**Date:** October 27, 2015

**To:** Karen Morin, PhD  
**Dept:** College of Nursing

**Cc:** Jessica Smith

**IRB#:** 15.355

**Title:** RN PERCEPTIONS OF COWORKER INCIVILITY AND COLLECTIVE EFFICACY AS INFLUENTIAL TO HOSPITAL STRUCTURES AND OUTCOMES

After review of your research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol has received modification/amendment approval for:

- Study Title change
- Change payment from raffle to \$25 for each participant
- Minor Changes to all forms based on approval from Baylor IRB

IRB approval will expire on **June 22, 2016**. If you plan to continue any research related activities (e.g., enrollment of subjects, study interventions, data analysis, etc.) past the date of IRB expiration, a Continuation for IRB Approval must be filed by the submission deadline. If the study is closed or completed before the IRB expiration date, please notify the IRB by completing and submitting the Continuing Review form in IRBManager.

Any proposed changes to the protocol must be reviewed by the IRB before implementation, unless the change is specifically necessary to eliminate apparent immediate hazards to the subjects. The principal investigator is responsible for adhering to the policies and guidelines set forth by the UWM IRB, maintaining proper documentation of study records and promptly reporting to the IRB any adverse events which require reporting. The principal investigator is also responsible for ensuring that all study staff receive appropriate training in the ethical guidelines of conducting human subjects research.

As Principal Investigator, it is also your responsibility to adhere to UWM and UW System Policies, and any applicable state and federal laws governing activities which are independent of IRB review/approval (e.g., [FERPA](#), [Radiation Safety](#), [UWM Data Security](#), [UW System policy on Prizes, Awards and Gifts](#), state gambling laws, etc.). When conducting research at institutions outside of UWM, be sure to obtain permission and/or approval as required by their policies.

Contact the IRB office if you have any further questions. Thank you for your cooperation and best wishes for a successful project.

Respectfully,

Melissa C. Spadanuda  
IRB Manager





Melissa Spadanuda  
IRB Manager  
Institutional Review Board  
Engelmann 270  
P. O. Box 413  
Milwaukee, WI 53201-0413  
(414) 229-3173 phone  
(414) 229-6729 fax

<http://www.irb.uwm.edu>  
[spadanud@uwm.edu](mailto:spadanud@uwm.edu)

### Modification/Amendment - IRB Expedited Approval

**Date:** November 25, 2015

**To:** Karen Morin, PhD  
**Dept:** College of Nursing

**Cc:** Jessica Smith

**IRB#:** 15.355

**Title:** RN PERCEPTIONS OF COWORKER INCIVILITY AND COLLECTIVE EFFICACY AS INFLUENTIAL TO HOSPITAL STRUCTURES AND OUTCOMES

After review of your research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol has received modification/amendment approval for:

- Change survey time from 3 weeks to 6 weeks

IRB approval will expire on **June 22, 2016**. If you plan to continue any research related activities (e.g., enrollment of subjects, study interventions, data analysis, etc.) past the date of IRB expiration, a Continuation for IRB Approval must be filed by the submission deadline. If the study is closed or completed before the IRB expiration date, please notify the IRB by completing and submitting the Continuing Review form in IRBManager.

Any proposed changes to the protocol must be reviewed by the IRB before implementation, unless the change is specifically necessary to eliminate apparent immediate hazards to the subjects. The principal investigator is responsible for adhering to the policies and guidelines set forth by the UWM IRB, maintaining proper documentation of study records and promptly reporting to the IRB any adverse events which require reporting. The principal investigator is also responsible for ensuring that all study staff receive appropriate training in the ethical guidelines of conducting human subjects research.

As Principal Investigator, it is also your responsibility to adhere to UWM and UW System Policies, and any applicable state and federal laws governing activities which are independent of IRB review/approval (e.g., [FERPA](#), [Radiation Safety](#), [UWM Data Security](#), [UW System policy on Prizes, Awards and Gifts](#), state gambling laws, etc.). When conducting research at institutions outside of UWM, be sure to obtain permission and/or approval as required by their policies.

Contact the IRB office if you have any further questions. Thank you for your cooperation and best wishes for a successful project.

Respectfully,

Melissa C. Spadanuda  
IRB Manager

## **Appendix F**

### **Baylor Scott and White IRB Approval Documents**

(Pages 221 – 228 included Baylor Scott & White IRB Documents).



















**Appendix G**  
**Acute Missed Nursing Care: Missing Data Analysis**

*Question 1 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 4              | 69         | 94.5%        |
| Critical and Progressive Care | 68       | 14             | 54         | 79.4%        |
| Emergency                     | 15       | 12             | 3          | 2.0%         |
| Mother-Baby                   | 34       | 22             | 12         | 35.3%        |
| Perioperative                 | 35       | 22             | 13         | 37.1%        |
| Total                         | 225      | 74             | 151        | 67%          |

*Question 2 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 72       | 3              | 70         | 97.2%        |
| Critical and Progressive Care | 67       | 3              | 64         | 95.5%        |
| Emergency                     | 14       | 0              | 14         | 100%         |
| Mother-Baby                   | 34       | 1              | 33         | 97.0%        |
| Perioperative                 | 36       | 7              | 29         | 80.5%        |
| Total                         | 223      | 14             | 209        | 93.7%        |

*Question 3 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 2              | 71         | 97.2%        |
| Critical and Progressive Care | 68       | 4              | 64         | 94.1%        |
| Emergency                     | 15       | 11             | 4          | 26.6%        |
| Mother-Baby                   | 34       | 19             | 15         | 44.1%        |
| Perioperative                 | 36       | 19             | 17         | 47.2%        |
| Total                         | 226      | 55             | 171        | 75.7%        |

*Question 4 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 2              | 71         | 97.2%        |
| Critical and Progressive Care | 68       | 3              | 65         | 95.5%        |
| Emergency                     | 15       | 12             | 3          | 80.0%        |
| Mother-Baby                   | 34       | 32             | 2          | 94.1%        |
| Perioperative                 | 35       | 18             | 17         | 28.6%        |
| Total                         | 225      | 67             | 158        | 70.2%        |

*Question 5 of MISSCARE Survey Part A*

|                  | <i>N</i> | Not Applicable | Applicable | % Applicable |
|------------------|----------|----------------|------------|--------------|
| Medical Surgical | 73       | 0              | 73         | 100%         |
| Critical and     | 67       | 2              | 65         | 97.0%        |

|                  |     |   |     |       |
|------------------|-----|---|-----|-------|
| Progressive Care |     |   |     |       |
| Emergency        | 15  | 0 | 15  | 100%  |
| Mother-Baby      | 34  | 1 | 33  | 97.1% |
| Perioperative    | 36  | 4 | 32  | 88.9% |
| Total            | 225 | 7 | 218 | 96.9% |

*Question 6 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 2              | 71         | 97.3%        |
| Critical and Progressive Care | 68       | 1              | 67         | 98.5%        |
| Emergency                     | 15       | 7              | 8          | 53.3%        |
| Mother-Baby                   | 34       | 1              | 33         | 97.1%        |
| Perioperative                 | 35       | 7              | 28         | 80.0%        |
| Total                         | 225      | 18             | 207        | 92.0%        |

*Question 7 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 1              | 72         | 98.6%        |
| Critical and Progressive Care | 66       | 1              | 65         | 98.5%        |
| Emergency                     | 15       | 0              | 15         | 100%         |
| Mother-Baby                   | 33       | 1              | 32         | 97.0%        |
| Perioperative                 | 36       | 2              | 34         | 94.4%        |
| Total                         | 223      | 5              | 218        | 97.8%        |

*Question 8 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 8              | 65         | 89.0%        |
| Critical and Progressive Care | 68       | 10             | 58         | 85.2%        |
| Emergency                     | 15       | 9              | 6          | 40.0%        |
| Mother-Baby                   | 34       | 21             | 13         | 38.2%        |
| Perioperative                 | 36       | 20             | 16         | 44.4%        |
| Total                         | 226      | 68             | 158        | 70.0%        |

*Question 9 of the MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 2              | 71         | 97.3%        |
| Critical and Progressive Care | 68       | 2              | 66         | 97.1%        |
| Emergency                     | 15       | 8              | 7          | 46.7%        |
| Mother-Baby                   | 34       | 1              | 33         | 97.1%        |
| Perioperative                 | 36       | 11             | 25         | 69.0%        |
| Total                         | 226      | 24             | 202        | 89.3%        |

*Question 10 of the MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 3              | 70         | 95.9%        |
| Critical and Progressive Care | 68       | 2              | 66         | 97.1%        |
| Emergency                     | 15       | 2              | 13         | 86.8%        |
| Mother-Baby                   | 34       | 6              | 28         | 82.4%        |
| Perioperative                 | 36       | 9              | 27         | 75.0%        |
| Total                         | 226      | 22             | 204        | 90.3%        |

*Question 11 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 72       | 3              | 69         | 95.8%        |
| Critical and Progressive Care | 68       | 3              | 65         | 95.6%        |
| Emergency                     | 15       | 0              | 15         | 100%         |
| Mother-Baby                   | 34       | 2              | 32         | 94.1%        |
| Perioperative                 | 36       | 10             | 26         | 72.2%        |
| Total                         | 225      | 18             | 207        | 92.0%        |

*Question 12 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 71       | 1              | 70         | 98.6%        |
| Critical and Progressive Care | 68       | 1              | 67         | 98.5%        |
| Emergency                     | 15       | 0              | 15         | 100%         |
| Mother-Baby                   | 34       | 0              | 34         | 100%         |
| Perioperative                 | 36       | 2              | 34         | 94.4%        |
| Total                         | 225      | 4              | 221        | 98.2%        |

*Question 13 of MISSCARE Survey Part A*

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 3              | 70         | 95.9%        |
| Critical and Progressive Care | 67       | 2              | 65         | 97.0%        |
| Emergency                     | 15       | 11             | 4          | 26.7%        |
| Mother-Baby                   | 34       | 15             | 19         | 55.9%        |
| Perioperative                 | 36       | 19             | 17         | 47.2%        |
| Total                         | 225      | 50             | 175        | 77.8%        |

*Question 14 of MISSCARE Survey Part A*

|                  | <i>N</i> | Not Applicable | Applicable | % Applicable |
|------------------|----------|----------------|------------|--------------|
| Medical Surgical | 72       | 1              | 70         | 97.2%        |
| Critical and     | 66       | 1              | 65         | 98.5%        |

|                  |     |    |     |       |
|------------------|-----|----|-----|-------|
| Progressive Care |     |    |     |       |
| Emergency        | 15  | 6  | 9   | 60.0% |
| Mother-Baby      | 34  | 9  | 25  | 73.5% |
| Perioperative    | 36  | 7  | 29  | 80.6% |
| Total            | 223 | 24 | 199 | 89.2% |

Question 15 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 4              | 69         | 94.5%        |
| Critical and Progressive Care | 67       | 8              | 59         | 88.1%        |
| Emergency                     | 15       | 0              | 15         | 100%         |
| Mother-Baby                   | 34       | 2              | 32         | 94.1%        |
| Perioperative                 | 36       | 7              | 29         | 80.6%        |
| Total                         | 225      | 21             | 204        | 90.7%        |

Question 16 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 71       | 3              | 68         | 95.8%        |
| Critical and Progressive Care | 68       | 1              | 67         | 98.2%        |
| Emergency                     | 15       | 1              | 14         | 93.3%        |
| Mother-Baby                   | 34       | 1              | 33         | 97.1%        |
| Perioperative                 | 36       | 9              | 27         | 75.0%        |
| Total                         | 224      | 15             | 209        | 93.3%        |

Question 17 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 9              | 64         | 87.8%        |
| Critical and Progressive Care | 68       | 7              | 61         | 89.7%        |
| Emergency                     | 15       | 10             | 5          | 33.3%        |
| Mother-Baby                   | 34       | 15             | 19         | 55.9%        |
| Perioperative                 | 36       | 17             | 19         | 52.8%        |
| Total                         | 226      | 58             | 168        | 74.3%        |

Question 18 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 2              | 71         | 97.3%        |
| Critical and Progressive Care | 68       | 1              | 67         | 98.5%        |
| Emergency                     | 15       | 0              | 15         | 100%         |
| Mother-Baby                   | 34       | 1              | 33         | 97.1%        |
| Perioperative                 | 36       | 5              | 31         | 86.1%        |
| Total                         | 226      | 9              | 217        | 96.0%        |

Question 19 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 72       | 2              | 70         | 97.2%        |
| Critical and Progressive Care | 68       | 3              | 65         | 95.6%        |
| Emergency                     | 15       | 0              | 15         | 100%         |
| Mother-Baby                   | 33       | 2              | 31         | 94.0%        |
| Perioperative                 | 36       | 6              | 30         | 83.3%        |
| Total                         | 224      | 13             | 211        | 98.7%        |

Question 20 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 1              | 72         | 98.6%        |
| Critical and Progressive Care | 68       | 0              | 68         | 100%         |
| Emergency                     | 15       | 0              | 15         | 100%         |
| Mother-Baby                   | 34       | 1              | 33         | 97.1%        |
| Perioperative                 | 36       | 1              | 35         | 97.2%        |
| Total                         | 226      | 3              | 223        | 98.7%        |

Question 21 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 73       | 2              | 71         | 97.3%        |
| Critical and Progressive Care | 66       | 1              | 65         | 98.5%        |
| Emergency                     | 15       | 1              | 14         | 93.3%        |
| Mother-Baby                   | 34       | 0              | 34         | 100%         |
| Perioperative                 | 36       | 7              | 29         | 80.6%        |
| Total                         | 224      | 11             | 213        | 95.1%        |

Question 22 of MISSCARE Survey Part A

|                               | <i>N</i> | Not Applicable | Applicable | % Applicable |
|-------------------------------|----------|----------------|------------|--------------|
| Medical Surgical              | 72       | 1              | 71         | 98.6%        |
| Critical and Progressive Care | 68       | 1              | 67         | 98.5%        |
| Emergency                     | 15       | 1              | 14         | 93.3%        |
| Mother-Baby                   | 34       | 2              | 32         | 94.1%        |
| Perioperative                 | 36       | 9              | 27         | 75.0%        |
| Total                         | 225      | 14             | 211        | 93.8%        |



## Curriculum Vitae

**Jessica Grace Smith, PhD, RN**

441 CR 1380, Alvord, TX 76225 | 940-229-1984 | jessicagracesmith@gmail.com

### EDUCATION

University of Wisconsin-Milwaukee, Milwaukee, WI

**Doctor of Philosophy (Ph.D.), Nursing** **2016**

**Dissertation Title:** *RN Perceptions of Coworker Incivility and Collective Efficacy as Influential to Hospital Structures and Outcomes* (Defended April 5<sup>th</sup>, 2016)

**Dissertation Chair:** Dr. Karen H. Morin, PhD, RN, ANEF, FAAN

Texas Christian University, Fort Worth, TX

**Bachelor of Science in Nursing** **2008**

### RESEARCH EXPERIENCE

**Research Assistant** **2014**

University of Wisconsin-Milwaukee

Performed qualitative data analysis of transcriptions for a study about the validity of a dating violence app for African American adolescents from January to August, 2014

### PRESENTATIONS

#### ***Podium***

*Reflections of Nursing Students Towards Their Clinical Experience and Career*

*Preparedness*, Podium Presentation

Midwest Nursing Research Society

*Chicago, IL, March 8<sup>th</sup>, 2013*

#### ***Poster***

*Missed Nursing Care: A Systematic Literature Review*

Student Poster Presentation for UWM at Midwest Nursing Research Society *Indianapolis, IN,*

**April 18<sup>th</sup>, 2015**

*Reflections of Nursing Students Towards Their Clinical Experience and Career*

*Preparedness*, Student Poster Presentation at Sigma Theta Tau International 42<sup>nd</sup> Biennial

Convention – Submitted as example of Rising Star

*Indianapolis, IN, November 16<sup>th</sup> and 17<sup>th</sup>, 2013*

## HONORS AND AWARDS

|   |                |
|---|----------------|
| Sigma Theta Tau International Nursing Honor Society | 2008 – present |
| Eta Nu Graduate Student Scholarship, UWM            | 2014           |
| Chancellor’s Graduate Student Award, UWM            | 2011- 2014     |
| Alumnus CCRN  | 2016 - 2019    |

## PROFESSIONAL EXPERIENCE

|                                      |                       |
|--------------------------------------|-----------------------|
| <b>Staff/Charge Registered Nurse</b> | <b>Feb - Jun 2011</b> |
| Wise Health System                   | <b>Dec 2015 -</b>     |
| Behavioral Health Services           | <b>Present</b>        |

|  |                  |
|--|------------------|
| University of Wisconsin-Milwaukee, Milwaukee WI                |                  |
| <b>Teaching Assistant for Nursing Learning Resource Center</b> | <b>2011-2015</b> |

|  |                   |
|--|-------------------|
| <i>Developed basic nursing student simulations for mastery of fundamental nursing knowledge and skills</i> | <b>2011 -2012</b> |
|--|-------------------|

|   |                    |
|---|--------------------|
| <i>Facilitated undergraduate clinical nursing simulations with high-fidelity equipment for the care of adults in the medical-surgical and obstetric populations</i> | <b>2011 – 2015</b> |
|---|--------------------|

|                               |                   |
|-------------------------------|-------------------|
| <b>Staff Registered Nurse</b> | <b>2008- 2011</b> |
| Texas Health Resources        |                   |

|                               |                       |
|-------------------------------|-----------------------|
| <b>Staff Registered Nurse</b> | <b>Jun - Nov 2015</b> |
| Bowie Memorial Hospital       |                       |

## ADDITIONAL TEACHING EXPERIENCE

|  |             |
|--|-------------|
| <b>Independent Study about Challenges and Opportunities for novice nursing educators:<br/>Undergraduate Nursing Pharmacology</b> | <b>2014</b> |
|--|-------------|

*Presented a nursing pharmacology lecture to a large class of over 80 students as well as created and led a discussion-based activity about nursing psychopharmacology*

## PROFESSIONAL MEMBERSHIPS

|  |
|--|
| American Nurses Association, 2012 – present                  |
| American Association of Critical Care Nurses, 2009 – present |
| Midwest Nursing Research Society, 2012 – present             |

## PROFESSIONAL SERVICE

Appointed to an ANA advisory committee to address  
**Workplace violence and incivility affecting nurses in organizations** 2014-2015

### **PROFESSIONAL LICENSES**

**Registered Nurse Compact License** 2008 - 2018  
Texas Board of Nursing

**Basic Life Support for HealthCare Professionals** 2015 – 2017  
American Heart Association

**Advanced Cardiac Life Support** 2015 – 2017  
American Heart Association

### **UNIVERSITY SERVICE**

**Student Member of Graduate Program Committee** 2011 - 2015  
University of Wisconsin-Milwaukee College of Nursing

#### **Doctoral Nursing Student Organization of UWM**

Treasurer 2011 - 2012

President 2012 - 2014

Secretary 2014 - 2015

Vice President 2015 - 2016

*Led DNSO as a small graduate doctoral nursing student organization to become an official university sanctioned student organization eligible to apply for grant funding for student organization events and travel.*

**Student Member of Graduate Student Committee Taskforce** 2014  
University of Wisconsin-Milwaukee College of Nursing

**Purpose:** To develop guidelines for a first year examination for PhD students at University of Wisconsin-Milwaukee

**Graduate Academic Senator** Fall 2014  
University of Wisconsin-Milwaukee Student Association

**UWM Student Association Student Appropriations Committee** 2014  
*Duties included attending meetings as needed to review student organization grants submitted for funding from the University of Wisconsin-Milwaukee*