Collegiality, the Nursing Practice Environment, and Missed Nursing Care

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COLLEGIALITY, THE NURSING PRACTICE ENVIRONMENT, AND MISSED NURSING CARE

by

Katherine I. Menard

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in Nursing at The University of Wisconsin-Milwaukee

May 2014
ABSTRACT

COLLEGIALITY, THE NURSING PRACTICE ENVIRONMENT, AND MISSED NURSING CARE

by

Katherine I. Menard

The University of Wisconsin-Milwaukee, 2014
Under the Supervision of Dr. Karen Morin

The practice environment of nurses has received attention in recent time related to a heightened awareness of the need for improved patient safety and an anticipated return of a nursing shortage. Existing literature has identified the presence and negative outcomes of unhealthy peer relationships among nurses, however; positive peer relationships (collegial) have received little attention in nursing research. This descriptive correlational study used data obtained through online survey methodology to describe the current state of collegiality among staff nurses working in the hospital setting and the relationship collegiality has to the nursing practice environment and missed nursing care.

Collegiality levels were measured using the Survey of Collegial Communication (SCC). The overall mean score on the SCC was 3.2. The SCC is made up of eight components with the following mean scores: Confidence/Trust (3.24), Teamwork (3.49), Open Communication (3.26), Mutual Help (3.49), Mutual Support (3.13), Creativity (2.95), Freedom from Threat (2.79), and Friendliness and Enjoyment (3.34). The total scores on the SCC ranged from 40-196 with a mean of 128. No significant differences among personal and workplace characteristics and levels of collegiality were found. Collegiality among nurses and perceptions of the nursing practice environment were
significantly correlated \((r = .59, n = 525, p < .01)\). Additionally, all components of the collegiality and all factors of the nursing practice environment were significantly correlated. Regression analysis was used to determine factors within the nursing work environment that may serve as predictors of missed nursing care. The model that best fit the data included; (1) Nursing Foundations of Quality Care, (2) Staffing and Resource adequacy, (3) Collegiality, (4) Nurse Manager Ability, Leadership and Support (5) Nurse Participation in Hospital Affairs as predictors of missed nursing care. This model explained 35% of the variance in missed nursing care. The path model presented in this study was found to be significant and a good fit for the data. This model presents the nursing practice environment as a predictor of missed nursing care with the collegiality partially mediating that relationship.

This study is the first large study to assess collegiality among bedside staff nurses, thus, these findings serve to establish a baseline for levels of collegiality among nurses. Major findings from this study indicate collegiality influences missed nursing care, as do other factors traditionally defined to make up the nursing practice environment. Thus, including the assessment of collegiality when assessing the nursing practice environment in future research is suggested.
DEDICATION

This dissertation is dedicated to my parents, Paul and Cindy Heino. Through leading by example, my parents taught me the value of hard work and dedication. My mother taught me from an early age the importance of professionalism and positive working relationships, which likely led to my passion for the concepts used in this study. My parents provided countless hours of free babysitting to help me accomplish this goal. Mom and Dad, without you—this would not have been possible.

I also want to thank my husband, Josh, and my children, Luke and Aili. This journey has resulted in me being a different kind of mother and wife than I ever imagined. Through this experience, I learned that my husband is capable of so much more than I ever dreamed. I missed out on, or was distracted during, many events through Luke and Aili’s early years, I am hopeful that what they will gain from this experience is a sincere value for what education can bring to one’s life.
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Chapter One

Introduction

Practice environments of nurses have received a great deal of attention over the last decade. Two main reasons for this attention exist: a movement towards improving patient safety and an ongoing shortage of nurses (Lake, 2007). The Institute of Medicine’s (IOM) seminal publication (2000), ‘To Err is Human’, was a driving force in refocusing the healthcare industry’s attention towards patient safety. The IOM (2000) reported medical errors as the cause of up to 98,000 deaths per year in the United States. This publication sparked attention from both recipients of healthcare and those working in the healthcare industry. Rather than focusing on individuals causing medical errors, the focus turned to creating environments that decreased or eliminated the risk of medical errors.

In addition to medical errors and patient safety, the ongoing shortage of nurses has sparked interest in the practice environment. Although the recent recession has somewhat diminished the current severity of the shortage, it is projected that by the year 2020 the need for nurses will increase by 26% or 712,000 nurses (American Association of Colleges of Nursing, 2012). It is expected that the shortage will be an ongoing issue in the future due to healthcare reform and the retiring baby boomer population which is made up of those born between 1946 to 1964 (Buerhaus, Auerbach, & Staiger, 2009). Healthcare reform is expected to create an increase in patients seeking healthcare related to an increase in the number of insured patients. Baby boomers who are currently working as nurses will create many vacancies upon retirement. Moreover, the baby boomer population as a whole is aging and will likely have increased healthcare needs in the future. Many organizations have affirmed that improvement of nursing practice
environments is an essential element to addressing the nursing shortage (American Association of Critical Care Nurses, 2005; American Nurse Credentialing Center, 1983; Lake, 2007; National League for Nursing, 2001).

Although patient safety and the nursing shortage have placed the practice environment in the spotlight for many years (IOM, 2000; Lake, 2007) problems still exist. The purpose of this chapter is to introduce the existing problem, the purpose of the study, the research questions, and to explicate the significance of the investigation to nursing.

**Statement of the Problem**

The nursing work environment is complex and involves many factors. The environment where nurses work is conceptualized in a number of ways (AACN, 2005; ANCC, 1983, 2011; IOM 2000, 2004; Lake, 2002). In existing literature, the terms work environment and practice environment are often used interchangeably. This paper will use the term ‘work environment’ as an overarching concept with varying definitions. The term practice environment will be used to specifically discussing the factors of the work environment through the lens of the work completed by Lake (2002).

It is common for nursing literature to refer to the working environment of nurses as the ‘nursing practice environment’. The nursing practice environment is described as consisting of five factors and can be measured using the Practice Environment Scale (PES) (Lake, 2002). These factors include: (1) nurse participation in hospital affairs, (2) nursing foundations of quality of care, (3) nurse manager ability, leadership, and support of nurses, 4) staffing and resource adequacy, and (5) collegial nurse-physician relations.
The practice environment has been shown to influence both nursing and patient outcomes (Bae, 2011; Friese, 2012; Lake, 2007).

Several investigators have shown that the practice environment influences nursing outcomes. A positive practice environment contributes to nurses’ job satisfaction (Lake, 2007; Manojlovich, 2005). An increased number of nurses report intent to leave in hospitals with poorer practice environments (Stone et al., 2007). Poorer nursing practice environments have also been linked to higher levels of burnout among nurses (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). Job dissatisfaction, intent to leave, and burnout all have the potential to lead to actual turnover which is extremely costly to healthcare organizations (Strachota, Normandin, O’Brien, Clary, & Krukow, 2003)

Additionally, practice environments have been shown to influence patient outcomes. Investigators have found that hospitals with poorer nursing practice environments have been shown to have higher mortality rates (Aiken, Clarke, Sloane, Lake & Cheney, 2008; Aiken, Smith, & Lake, 1994; Friese, Lake, Aiken, Silber, & Sochalski, 2007). Hospitals with poorer nurse practice environments reported increased odds of failure to rescue (Aiken, Clarke, Sloane, Lake & Cheney, 2008; Friese et al, 2007). Stone et al. (2007) found reduced numbers of catheter associated urinary tract infections among hospitals with better practice environments. Such findings lend support to continuing to investigate the practice environment.

Lake (2007) reviewed measures used to study the nurses practice environment and revealed that the factors extrapolated previously (Lake, 2002) may not be comprehensive enough to describe the working environment in the current healthcare environment. One area that is lacking in the five factors previously described is that of
supportive peer relationships among nurses (Lake, 2007). The majority of recently published literature in the area of peer relationships among nurses has focused on the existence and outcomes of negative relationships. These negative relationships have been described as bullying (Johnson, 2009), lateral violence (Griffin, 2004; Stanley, Martin, Michel, Welton, & Nemeth, 2007), horizontal violence (McKenna, Smith, Poole, & Coverdale, 2003), relational aggression (Dellasaga, 2011) and incivility (Hutton, 2006). These negative peer relationships involve interactions such as: workplace intimidation, degrading, impatience, angry outbursts, and refusal to answer questions (Embree & White, 2010). A power gradient is generally involved and the bullying and abuse in nursing is most often psychological rather than physical (Stokowski, 2010).

Negative peer relationships among nurses have been connected to many negative outcomes in the working environment. Negative peer relationships have been linked to decreased productivity (Hutton & Gates, 2008; Johnson, 2009; Lewis & Malecha, 2011), increased sick time (Johnson, 2009), distress among nurses (Leiter, Price, Laschinger, 2010) and nurse attrition (Farrell, 2006). Lost productivity was calculated at $11,581 per nurse per year related to the presence of incivility in the nursing work environment. Farrell (2006) reported that existence of negative peer relationships among coworkers also increases the potential for nurses to commit medical errors.

Characteristics of nurses and the organization of the nurses’ work have also been discussed in existing literature. Age has been shown to influence nurses’ ratings of negative relationships within the workplace. Leiter, Price, and Laschinger (2010) found that Generation X nurses (younger) report more incivility in the work environment than do Baby Boomer nurses (older). The female domination of the discipline of nursing and
the hierarchy of hospitals have been linked to the existence of negative peer relationships through the theory of oppression (Diaski, 2004; Duddle & Boughton, 2007).

Padgett (2013) affirms that models of care delivery have received very little attention in research literature and thus how these models influence the work of nurses and the care of patients is not well understood. Just as models of care delivery may influence the peer relationships of nurses it seems possible that the practice setting may influence the nurses’ peer relationships. Friese (2005) identified that oncology nurses rate their practice environments more favorably and have better nurse-physician relations than nurses working in other practice settings. Although Friese (2005) was able to find differences in nurse-physician relations, limited literature is available describing the differences in the state of nurse-to-nurse relations in differing practice settings and this warrants further study.

Although a review of literature has demonstrated some of the outcomes of the presence of a negative working environment, very little evidence exists linking nurse and patient outcomes to positive peer relationships. Discovering more about positive relationships seems to be an obvious first step in understanding how to create these sorts of relationships among practicing nurses. One concept found in the literature that focuses on the positive relationship is civility (Clark & Carnosso, 2008). Civility is defined as “an authentic respect for others when expressing disagreement, disparity, or controversy” (Clarke & Carnosso, 2008, p. 13). Civility involves “time, presence, a willingness to engage in genuine discourse, and a sincere intention to seek common ground” (Clarke & Carnosso, 2008, p. 13). Based on this definition, civility is something that comes into
play when disagreement becomes part of an interaction and could be considered one step in examining interpersonal relationships through a different lens.

Studying civility may be a step in the right direction, however, the interpersonal relationship among nurses may be more complex and not always involve disagreement. Collegiality as a concept may provide nurses with a better understanding of all that encompasses a positive peer relationship. Collegiality can be defined as a positive interpersonal working relationship (Beyer, 1979; 1981; Halstead, 1991; Hansen, 1991; 1995). This is a multidimensional concept consisting of confidence and trust, team efforts toward goal attainment, open communication, mutual help, mutual support, creativity, freedom from threat and friendliness and enjoyment (Beyer, 1979; 1981). Although this concept first appeared in the nursing literature three decades ago, research investigating the concept of collegiality in nursing remains limited.

Collegiality has been studied both qualitatively (Jacobs, 1999; Padgett, 2013) and quantitatively (Beyer, 1979 & 1981; Chapman, 1993; Dick, 1986 & 1992; Hansen, 1991; 1995; McMahon, 1990). The empirical evidence that does exist is descriptive (Duddle & Boughton, 2007; Hansen, 1991; 1995; Jacobs, 1995; Padgett, 2013) or correlational (Beyer, 1979; 1981; Chapman, 1993; Dick, 1986; 1992; Halstead, 1991). Investigators have employed several different conceptualizations of collegiality as well as differing theoretical approaches. Publications have been sporadic, with only an article or two being published each decade. The lack of cohesiveness in the approach to the study of collegiality, and the distance in time between existing studies, have led to a body of literature that has advanced very little since the first publications almost three decades ago. Lacking from nursing discipline knowledge are the outcomes of a collegial
environment, therefore, a consensus does not exist within the discipline in terms of the value of this sort of environment. Nonetheless, investigating such a phenomenon may have value.

This study is a first step at identifying and describing collegial relationships among nurses. Emphasis in current nursing literature is on the presence of negative peer relationships (Johnson, 2009; Hutton, 2006; Hutton & Gates, 2008; Lewis & Malecha, 2011; McKenna, Smith, Poole, & Coverdale, 2003; Stanley, Martin, Michel, Welton, & Nemeth, 2007). It is unknown the degree to which collegial relationships exist in nursing and the influence these relationships can have on nurses and their work.

Concepts related to collegiality have been studied and include teamwork, communication, and collaboration. Teamwork has been studied within the nursing discipline (Kalisch, Curley & Stefanov, 2007; Kalisch, Weaver, & Salas, 2009). Teams are made of two or more individuals, with a common purpose, who depend on one another (Kalisch, Curley, & Stefanov, 2007). Teamwork is focused on accomplishment of tasks and requires nurses to work together closely and thus may be influenced by the presence or lack of collegiality in a nursing work environment. Communication and collaboration are also related concepts that can be found in existing literature, however, these works place great importance on nurses working with other disciplines. In particular, authors have focused on the working relationships among nurses and physicians (Manojlovich, 2005; Miller, 2001). Although dated, both Campbell-Heider and Pollack (1987) and Nolan (1976) suggest intraprofessional collegiality is a prerequisite to interprofessional collegiality. Thus, it may be possible that before nurses can work effectively with physicians and other members of the interprofessional team,
they need to focus on working effectively among their own nursing colleagues. However, little information exists about how nurses work effectively with their nursing colleagues.

Conducting this study was a first step in filling gaps that currently exist in the literature. The focus of this study was on how nurses work with their peers rather than focusing on the interdisciplinary working relationships that are evident in existing literature. Turning the focus toward positive peer relationships among nurses was done using the concept of collegiality. Collegiality was defined as a positive interpersonal working relationship (Beyer, 1979; 1981; Halstead, 1991, 1995; Hansen, 1995). The current state of collegiality needs to be described before any additional efforts to develop it can be undertaken.

This study provides empirical evidence regarding the current state of positive peer relationships among nurses by measuring collegiality. Very little is known about collegiality within the nursing workforce today. This initial study has begun a research trajectory aimed at explicating the interpersonal peer relationships among nurses and understanding how these relationships may influence nursing and patient outcomes.

**Relationship among Study Variables**

An expansion of hypothesized relationships among and between study variables is presented in this section. An effort is made to establish linkages between variables, albeit approaching some of the linkages from a contrary or opposing perspective.

**Collegiality and the Practice Environment**

The practice environment (Lake, 2002) is made up of five factors, nurse participation in hospital affairs, nursing foundations of quality care, nurse manager
ability, leadership, and support, staffing and resource adequacy, and collegial nurse-physician relations. Theoretical and empirical literature exists providing beginning linkage between the practice environment and peer relationships among nurses.

Likert’s Model of Highly Effective Workgroups (1961) includes ‘peer behavior’ as one component of the working relationship (Figure 2). Likert explains that supportive peer behavior along with supportive managerial leadership, organizational climate, and group processes are essential to creating an effective and productive work environment. Also included in Likert’s model is the need for general satisfaction. With the exception of general satisfaction with the job and peer behavior, the factors of Likert’s model correlate closely with the factors of the practice environment described by Lake (2002). Peer behavior can be addressed through the concept of collegiality as other authors who have built upon Likert’s work have done (Beyer, 1979; 1981, Taylor & Bowers, 1972).

Most existing empirical literature providing the link between peer relationships among nurses and the practice environment approach peer relationships from a negative point of view using the terms incivility, lateral violence, or bullying. One could hypothesize that the outcomes of these negative peer relationships are opposite to the outcomes of a collegial relationship among nurses.

Incivility, “low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect (Hutton, 2006, p. 23)” has been connected to nurse manager ability, leadership and support, evaluated by means of the Practice Environment Scale (PES) (Lake, 2002). Hutton (2006) reported that, workers stated management plays a role in the presence of incivility. Additionally, Lewis and
Malecha (2011) report higher levels of incivility were present in unhealthy work environments.

Another negative behavior that has been reported in the literature to be associated with the practice environment is lateral violence, defined as “nurse-to-nurse aggression with overtly or covertly directing dissatisfaction toward another (Embree & White, 2010, p. 166)”. Embree and White (2010) present a concept map where a toxic environment and negative unit culture are described as antecedents to lateral violence. Thus, one may begin to question whether a non-toxic work environment and positive unit culture may actually serve as antecedents to collegiality.

Workplaces allowing nurses to practice based on a philosophy consistent with nursing are described as more ideal practice environments under the factor of ‘nursing foundations of quality of care’. The negative peer relationship described as lateral violence has often been viewed through the theory of oppression (Diaski, 2004; Farrell, 2006; Matheson & Bobay, 2007, Roberts, 2000). This theory describes lateral violence as stemming from the nursing discipline’s history of being placed at the bottom of the healthcare hierarchy. Also contributing, is the notion that nursing lacks an identity as demonstrated by the ongoing debate, ‘what is nursing?’ Watson (1999) describes nursing as being subsumed under medicine for so long that it has forgotten its origin. Also related to the theory of oppression are the statements of Stanley, Martin, Michel, Welton, and Nemeth (2007): “lateral violence in nursing relates to behaviors among individuals who consider themselves peers with equal power—but overall without power within the system” (p. 1259). Thus, environments that allow nurses to practice based on a nursing
The practice environment concept of nurse participation in hospital affairs has also been connected to peer relations among nurses. Diaski (2004) discusses the presence of negative peer relationships among nurses. Diaski explains that these negative relationships will be present unless nurses are allowed to be involved in decision making strategies that affect their practice. Thus, nurses who are allowed to be more highly involved in decision making through participation in hospital affairs may be more apt to influence change in these negative peer relationships.

Staffing and resource adequacy is also a component of the practice environment and has been related to negative peer relationships. Hutchinson, Vickers, Jackson, and Wilkes (2005) state organizational pressures to increase workloads, such as changing levels of staffing, create a climate where bullying can flourish. Bullying can be defined as “workplace behavior that could reasonably be considered humiliating, intimidating, threatening or demeaning to an individual or group of individuals and that is usually repeated over time” (Worksafe Victoria, 2008, p. 5). Thus, staffing and resource adequacy have been connected to the negative type of peer nursing relationship referred to as bullying.

Although there is some empirical evidence linking the four factors of the practice environment (nurse manager ability, leadership, and support, nurse participation in hospital affairs, nursing foundations of quality care, and staffing and resource adequacy) to peer relationships, this relationship is also supported theoretically. Likert’s (1961) model theoretically links all concepts of the practice environment to peer relationships.
The literature explored in this section provides beginning evidence that a relationship exists between collegiality and the practice environment.

**The Practice Environment and Missed Nursing Care**

No literature has been found directly connecting the practice environment as described by Lake (2002) to missed nursing care. However, the missed care literature does provide some evidence to support possible connections between missed care and the practice environment. Kalisch (2006) identified reasons for missed nursing care in her qualitative study. These reasons included: too few staff, poor use of existing staff resources, lack of time required for the nursing interventions, poor teamwork, ineffective delegation, habit and denial. Reasons such as ‘too few staff’ and ‘poor use of existing staff resources’ are consistent with the ‘staffing and resource adequacy’ aspect of the practice environment discussed by Lake (2002). Similarly, ‘ineffective delegation’ may be related to the practice environments ‘nurse manager ability, leadership, and support’ discussed by Lake (2002).

Additionally, Kalisch and Lee (2009) reported less missed nursing care in magnet hospitals. Magnet hospitals involve different components than the practice environment conceptualized by Lake (2002; 2007); however, magnet hospitals have also been used as indicators of a highly rated practice environment (Lake, 2002; Lewis & Malecha, 2011).

Thus, beginning evidence connects the practice environment to missed nursing care. This beginning evidence allows one to hypothesize there may be a relationship between the practice environment and missed nursing care.
Missed Nursing Care and Collegiality

Powerless nurses are ineffective nurses (Manojlovich, 2007). Women gain a sense of power through emotional growth and nurturing relationships (Chandler, 1992; Fletcher et al., 2006; Wuest, 1994). As previously discussed, Kalisch (2006) identified reasons for missed nursing care in her qualitative study. When Kalisch and Williams (2009) developed the MISSCARE instrument they included a section assessing reasons for missed nursing care (part B of the instrument). The communication/teamwork subscale of part B of the MISSCARE survey addresses concepts that are the opposite of those housed within collegiality as defined in this study. For example, the item ”lack of back up support from team members” is the opposite of what the teamwork component of collegiality is addressing. Another example from Part B of the MISSCARE instrument, “tension or communication breakdowns within the nursing team” is the polar opposite of open communication which is considered an element of collegiality. Kalisch, Tschannen, Lee, and Friese (2011) reported 81.7% of nurses indicated missed nursing care was because of a lack of communication/teamwork. Additionally, 79.9% stated a lack of backup support from team members and 75.4% reported tension or communication breakdowns within the nursing team. One of these reasons was poor teamwork. Although teamwork and collegiality are not the same concept, one component of collegiality as conceptualized by Beyer (1979; 1981) is teamwork.

Lewis and Malecha (2011) studied incivility which likely has opposite opposing outcomes to the concept of collegiality. These authors report decreased productivity with higher levels of incivility. When viewed from the lens of this study, it is possible that higher levels of productivity result when higher levels of collegiality are present. If
missed care is viewed as a measure of productivity, one could hypothesize that collegiality is related to missed nursing care.

This discussion provides beginning linkage between missed nursing care and collegiality. Thus, this allows one to hypothesize that a relationship exists between missed nursing care and collegiality.

**Collegiality as a Mediating Variable**

Bogaer, Kowalski, Weeks, Van huesden, and Clarke (2013) examined the relationship among several work characteristics and the nursing practice environment. One work characteristic examined was social capital. Social capital was described as nurses having shared values and working in mutual trust within nursing teams, terms that are similar to those used to describe collegiality. Through structural equation modeling, Bogaer et al. (2010) were able to demonstrate social capital served as a mediating variable to the relationship between the practice environment and nurse assessed quality of care and job outcomes. Missed nursing care was not the variable used to measure nurse assessed quality of care or job outcomes but one could hypothesize that a similar relationship would result with missed nursing care as the outcome variable. Thus, in this study it is hypothesized that collegiality will serve as a mediator to the relationship between the practice environment and missed nursing care.

**Purpose of the Study**

The purpose of this study was to describe collegiality among registered nurses working at the bedside in the hospital environment. Specifically, this study aimed to gain an understanding of: (1) the perceptions of hospital nurses regarding the presence of collegiality in their environment; (2) whether differences exist among nurse’s perceptions
of collegiality and personal characteristics (age, years nursing experience, educational preparation, and gender) or workplace characteristics (years at current place of employment, hours worked per week, model of care delivery, and shift); (3) the relationships among nurses’ perceptions of collegiality and the nursing practice environment; (4) the influence of working environment factors on missed nursing care; and (5) collegiality’s influence as a mediator to the effect of the nursing practice environment on missed nursing care.

**Theoretical Framework**

Likert’s Ideal Model of Highly Effective Work Groups was used as the theoretical framework for this study (Likert, 1961). Likert was an organizational psychologist and his model is considered a management theory (Likert, 1961). The model focuses on several variables: managerial leadership, organizational climate, peer behavior, group processes, and general satisfaction. According to this model, all processes within an organization need to be supportive in order for it to be effective and productive.

Likert (1961) describes effective and productive organizations as providing experiences and relationships that allow workers to maintain a sense of self-worth and importance achieved through contributions that align with worker values, goals, expectations and aspirations. Many years have passed since Likert’s original work and, in that time, other authors have aided in clarifying and expanding upon what this model means in terms of interpersonal working relationships and how they relate to the profession of nursing. Taylor and Bowers (1972) focused on the interpersonal processes characteristic of highly effective work groups. Taylor and Bowers built on Likert’s work describing seven interpersonal processes: (1) confidence and trust among members, (2) a
strong, shared motivation toward goal attainment, (3) effective group decision making, (4) effective, open communication within the group, (5) mutual help and coordinated effort, (6) flexibility, adaptability, and creativity, and (7) job competence.

Beyer (1979; 1981) brought clarity to how nursing fits within Likert’s model and employed the term collegiality to describe the positive interpersonal working relationship among nurses (Beyer, 1979; 1981). Her work resulted in eight interpersonal ‘components’ specific to nursing. The eight components are: Confidence and trust, team efforts toward goal attainment, open communication, mutual help, mutual support, creativity, freedom from threat and friendliness and enjoyment.

Beyer’s (1979; 1981) eight components are an elaboration of the work published by Taylor and Bowers (1972) and Likert’s Ideal Model of Highly Effective Workgroups (1961). Beyer provides a basis for using this model within the discipline of nursing. In an effort to ensure currency and applicability of this model to staff nurses practicing today, the author of the current study conducted a qualitative study with acute care staff nurses (N=8) through focus groups (Menard, 2013). Interestingly, the components of collegiality identified by these staff nurses exactly matched the components described by Beyer (1979; 1981). These findings support Beyer’s (1979; 1981) work to adapt the theoretical work of Likert (1961) and indicate that the elements of interpersonal processes are accurate and remain relevant to nurses of today. As seen in Figure 1, the components of collegiality were extrapolated from the portion of Likert’s theory focused on peer behavior.

In Likert’s model, members of a group are skilled in the role they play within the group. The leader communicates frequently with the members of the group and is often
selected by the group members. The climate is one in which major goals and values of
the group are shared among the members. Members are supportive of one another, offer
each other help and receive and provide criticism in a respectful manner. The open

Figure 1

_Likert’s Model and Beyer’s Components of Collegiality_

communication that exists between group members and the leader means that all team
members can play an influential role in the organization (Likert, 1961).

Several components found in Likert’s model were examined in this study with a
specific focus on the interpersonal relationships among nurses. The interpersonal piece
among nurses was examined through the measurement of collegiality. As previously
explained, the working environment has received attention in existing literature and
consists of many factors other than collegiality among nurses. The practice environment
as described by Lake (2002) is made up of the following factors: nurse participation in
hospital affairs, nursing foundations of quality care, nurse manager ability, leadership,
support, staffing and resource adequacy and collegial nurse-physician relations. In an attempt to thoroughly examine the practice environment and gain an understanding of how collegiality relates to missed nursing care when compared with other practice environment factors, the Practice Environment Scale (PES) created by Lake (2002) was used.

Likert’s model describes the need for all processes within a work environment to be supportive in order for it to be productive and effective. In this current study, missed nursing care was used as an outcome variable to address the productivity and effectiveness of nursing care. Missed nursing care was described as an error of omission, meaning that some portion of the nursing care required for a patient was either significantly delayed or not completed (Kalisch, Landstrom, & Hinshaw, 2009). This will be done in an effort to understand how related collegiality is to missed nursing care when compared with other factors within the work environment. The framework for this study is presented in Figure 2.
Other authors have utilized Likert’s model with a specific focus on the importance of ‘peer behavior’ (Taylor & Bowers, 1972; Beyer, 1979, 1981). These authors clarified and elaborated upon the meaning and importance of interpersonal relations among peers using the term collegiality which is made up of eight components: Confidence and Trust, Mutual Help, Mutual Support, Friendliness and Enjoyment, Team Efforts Towards Goal Achievement, Creativity, Open Communication, & Freedom from Threat (Beyer, 1979; 1981).

Current nursing literature does not focus on the presence of a positive interpersonal relationship among peers. This study will seek to describe collegiality among bedside nurses and determine how influential collegiality is within the nursing work environment when compared with other factors.
Research Questions

Answers to the following research questions were sought in this study.

1. What are the perceptions of hospital nurses regarding collegiality in their environment?

2. What differences exist among nurse’s perceptions of collegiality and personal characteristics (age, years nursing experience, educational preparation, and gender) or workplace characteristics (years at current place of employment, hours worked per week, model of care delivery, and shift)?

3. What relationships exist among nurses’ perceptions of collegiality and nurses’ perceptions of the practice environment?

4. What working environment factors are the best predictors of missed nursing care?

5. How does collegiality mediate the effect of the nursing practice environment on missed nursing care? (Figure 3)

- Hypothesis #1: The nursing practice environment has a direct effect on collegiality.
- Hypothesis #2: Collegiality has a direct effect on missed nursing care.
- Hypothesis #3: The nursing practice environment has a direct effect on missed nursing care.
- Hypothesis #4: Collegiality mediates the effect of the nursing practice environment on missed nursing care.
Figure 3

Path Model being Analyzed in this Study

Note: The path model as a whole represents hypothesis 4.

Theoretical and Operational Definitions

Collegiality

Collegiality can be defined as a positive interpersonal working relationship (Beyer, 1979; 1981; Halstead, 1991; Hansen, 1995). Operationally, collegiality was measured by the total score of nurses’ responses on the Survey of Collegial Communication (SCC) (Beyer, 1979; 1981). The SCC can be found in Appendix A.

Nursing Practice Environment

The nursing practice environment can be defined as “the organizational characteristics of a work setting that facilitate or constrain professional nursing practice” (Lake, 2002, p. 178). The practice environment can be divided into five categories; nurse participation in hospital affairs, nursing foundations of quality of care, nurse manager ability, leadership, support, staffing and resource adequacy and collegial nurse-physician relations. Operationally, the nursing practice environment was measured by the mean of
the five subscale scores on the Practice Environment Scale of the Nursing Work Index (Lake, 2002). Additionally, the five categories of the nursing practice environment were described by the mean scores on each of the five subscales of the PES-NWI. The PES-NWI can be found in Appendix B.

**Missed Nursing Care**

Missed nursing care can be defined as the “any aspect of required patient care that is omitted or delayed” (Kalisch, Landstrom, & Hinshaw, 2009, p. 1509). Operationally, missed nursing care was measured by the total score of Section A of the MISSCARE survey (Kalisch & Williams, 2009). The MISSCARE can be found in Appendix C.

**Assumptions**

1. Staff nurses will accurately and honestly complete questionnaires.
2. The day-to-day work of a bedside nurse requires frequent interaction among nurse colleagues.
3. Collegiality exists in environments free of incivility, lateral violence, and bullying.

**Significance**

**Nursing Practice**

Findings from this study have the potential to impact nursing practice by providing empirical evidence to aid in understanding the role collegiality might exert in the nursing practice environment. If higher levels of collegiality are associated with less missed nursing care and a better practice environment, then the profession may decide it is an essential component of the nursing practice environment and one worth cultivating. Nurses will have to find ways to foster collegiality within their nursing work environments and perhaps within the discipline or refrain from rewarding those individuals who do not contribute to such an environment. Contributions to a collegial
environment could be measured through evaluations by management and peers. As a highly valued behavior, when interviewing potential staff, managers may begin to evaluate interviewees’ attitudes toward peer relationships and favor those applications with respect for collegial environments. Rewards for contributions to a collegial environment could consist of monetary rewards, recognition among staff and patients, or advancement within a clinical ladder system. If collegiality is not found to have a significant positive influence within the nursing work environment, nursing leaders may choose to focus their attention and resources elsewhere.

Many in the profession have recognized the need for a better working environment in nursing and therefore have created standards for achieving improvement of nursing work environments (IOM 2000, 2004; AACN, 2005; ANCC, 1983, 2011). Each of these organizations has developed models of ideal working environments. Very little focus can be found in any of these models on collegiality among nursing staff.

In 2004, the IOM published a document highlighting the need to transform the work environment of nurses in order to keep patients safe. Nursing was noted to make up 54% of the health care workforce. This report recommends several necessary patient safeguards in the working environments of nurses. These safeguards focus on safety, leadership, staffing, organizational support for ongoing learning and decision support, interdisciplinary collaboration, work design that promotes safety, and organizational culture that improves safety (IOM, 2004). A clear identification of the importance of relationships among nurses in the discussion of the IOM literature does not exist. Instead, when speaking of relationships among professionals the focus is on that of nurses
with other members of the interdisciplinary team. A focus on positive nurse to nurse relationships may be a necessary addition to these recommendations.

The American Association of Critical Care Nurses (AACN) established standards for a Healthy Working Environment (2005). Six standards were developed and described as: Skilled communication, true collaboration, effective decision making, appropriate staffing, meaningful recognition, and authentic leadership. In the discussion of the standards, particular attention is paid to the importance of positive working relationships. According to these standards, “inattention to work relationships creates obstacles that may become the root cause of medical errors, hospital-acquired infections and other complications, patient readmission and nurse turnover” (p. 11). These standards do not use the term collegiality. Additionally, most of the focus in terms of working together is approached in terms of nurses working with physicians. Again, similarly to IOM, these standards may benefit from additional content discussing the importance of nurses working well with other nurses.

Kramer and Schmalenberg (2008) describe magnet attributes that staff nurses described as essentials in the work environment. These “Essentials of Magnetism” are as follows: culture in which concern for patients takes precedence, support for staff education, supportive nurse managers, working with clinically competent nurses, control over nursing practice, staffing perceived as adequate, clinical decision making/autonomy. Noticeably absent are discussions of peer-to-peer relationships, thus exploring collegiality has the potential to add a new dimension to the profession’s conceptualization of the work environment.
The nursing shortage is expected to continue to be a problem. Nurse retention becomes very important during nursing shortages. Negative work environments have been linked to intent to leave, nurse turnover, burnout and lower rates of job satisfaction (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Lake, 2007; Manojlovich, 2005; Stone et al., 2007; Strachota, Normandin, O’Brien, Clary, & Krukow, 2003). In times of shortage, factors that contribute to a positive practice environment receive attention. Lake (2007) explained that supportive peer relationships really should be one piece of a positive practice environment in nursing. If collegiality is found to be as influential to nursing productivity as other factors within the nursing work environment, it may become commonplace to include this factor in the discussion of a positive practice environment. If that is the case, work focusing on retaining nursing and drawing individuals into the profession may demonstrate a value for collegiality within the profession.

**Nursing Education**

This study may have an impact on nursing education by providing faculty with additional information related the occurrence and effects of positive peer relationships among nurses. If collegiality is found to have favorable outcomes, educators will have empirical evidence related to the importance of teaching students the components of a positive peer relationship. A current movement in healthcare education is the focus on interprofessional education (Manojlovich, 2010; Petri, 2010; Thistlethwaite, 2012). Educating nurses from the onset of their education on the importance of learning to work well with one another may not only impact the nursing work relationship but also transfer into the peer relationships with other members of the healthcare team. Nurses work at
several different levels (practical nurses, registered nurses, nurse practitioners) and in differing capacities (staff nurse, managers, administration). Focusing on nursing working with nurses within these differing levels and capacities may be necessary in addition to the need for nurses to learn to work with other members of the interprofessional team.

Nursing Policy

Empirical literature demonstrating the importance of a positive peer relationship among nurses could influence hospitals to create internal policies related to expectations of nurses regarding the way they conduct themselves when interacting with their peers. Currently, the focus of major organizations such as the IOM, the American Association of Critical Care Nurses and the American Nurse Credentialing Center is to improve working environments in healthcare in an effort to improve patient safety. When discussing interpersonal relationships, the key focus among these organizations currently lies in interdisciplinary relationships. If collegiality is found to be an influential factor within the work environment, major organizations could begin identifying intraprofessional relationships as something of importance. The American Nurses Association (2010b) removed collegiality as a standard of practice in the most recent version of this document. The expectations of nurses within relationships among their peers was instead placed within the code of ethics for nurses (ANA, 2010a). The visibility of the term collegiality has diminished since it is no longer found in the table of contents of these publications or as bold headings within the text. Should findings of this study reveal major benefits of collegial relationships among nurses, they may influence a change within the organization of the standards of practice and code of ethics. Terming an item a standard of practice signifies a much greater importance than dispersing the
information within the text of the code of ethics. Additionally, if collegiality is found to have a relationship to the practice environment and missed nursing care it may influence the direction of funding from governmental organizations. Funding may be directed towards gaining additional evidence to support the understanding of the state, outcomes, and creation of collegiality.

**Nursing Science**

Demonstrating the existence of collegiality and the relationship this concept has with other variables within the work environment can provide the basis for further research in this area. If collegiality is not found to better productivity within the nursing work environment further study of this variable may not be necessary or it may need to be approached through a different lens. Perhaps, if collegiality is not found to have a significant influence on the nurses’ ability to provide patient care it may be influential in other important areas such as job satisfaction, nurse retention and possibly even patient satisfaction. Further studies investigating collegiality and other outcome variables may be warranted. Future studies could include nursing outcomes such as: job satisfaction, intent to leave, and burnout. Future studies could also examine nurse sensitive patient outcomes such as: patient falls, nosocomial infections, and pressure ulcers.

Should collegiality be related to higher levels of nurse productivity, an opportunity to replicate and further validate results of this study will exist. If an environment rich with collegiality is shown to have beneficial effects, collegiality will likely receive increased attention. Researchers may want to determine what settings are associated with the highest levels of collegiality and work towards determining how to foster collegiality within the nursing work environment. Once it is understood what
factors in work environments help to foster collegiality, intervention studies could be undertaken to provide empirical evidence supporting the need to create environments rich in collegiality. Demonstrating outcomes of a positive peer relationship will likely lead nursing researchers to discover interventions helpful in creating these types of peer relationships among nurses.

**Chapter Summary**

The statement of the problem, including the gaps that currently exist in nursing literature regarding peer relationships among nurses, was presented. An overview of the purpose of the study, research questions and theoretical framework was also provided. Lastly, a discussion of the significance this research may have on the future of nursing practice, education, policy and science was explicated. Limited empirical evidence is available related to nurses work relationships with other nurses. The majority of the literature that is available is focused on the existence of negative work relationships. This study will provide empirical evidence in regards to the existence of collegiality in the nursing work environment and the relationship between levels of perceived collegiality, missed nursing care, and the practice environment of nurses. This non-experimental, descriptive correlational study will be the first step to approach peer relationships from a positive perspective and will serve as foundational knowledge for future intervention studies if results indicate the need for such studies.
Chapter Two

Review of Literature

The purpose of this study was to describe collegiality among registered nurses working at the bedside in the hospital environment. Specifically, this study aimed to gain an understanding of: (1) the perceptions of hospital nurses regarding the presence of collegiality in their environment; (2) whether differences exist among nurse’s perceptions of collegiality and personal characteristics (age, years nursing experience, educational preparation, and gender) or workplace characteristics (years at current place of employment, hours worked per week, model of care delivery, and shift); (3) the relationships among nurses’ perceptions of collegiality and the nursing practice environment; (4) the influence of working environment factors on missed nursing care; and (5) collegiality’s influence as a mediator to the effect of the nursing practice environment on missed nursing care. Likert’s model of highly effective workgroups serves as the theoretical framework for this study (Likert, 1961).

In this chapter, existing published literature regarding concepts central to this study, including collegiality, missed nursing care and the practice environment, are discussed. Literature is organized by describing how the search was conducted followed by a discussion of potential theoretical approaches to studying collegiality along with the reasoning for choosing Likert’s model. Literature on the topic of collegiality will be reviewed in depth due to the limited amount of literature published. The discussion of collegiality and missed nursing care will be organized as follows: theoretical and opinion based literature, empirical literature, and a critique of the existing literature.
The presentation of practice environment literature will be different since such a large number of studies have been published on this topic. The practice environment literature will instead be synthesized and separated into the five factors of the practice environment: nurse participation in hospital affairs, nursing foundations of quality care, nurse manager ability, leadership, support and staffing adequacy and collegial nurse-physician relations.

This literature review includes published research, theses, dissertations, articles and books that aid in the understanding of collegiality, missed nursing care, and the professional practice environment. This literature search included the following electronic databases: the Cumulative Index to Nursing and Applied Health Literature (CINAHL), the medical index (Medline), and the American Psychological Association’s psychological database (PsychInfo). Keywords used in the literature search included: collegiality, intraprofessional relationships, working relationships, missed nursing care, errors of omission, and the nursing practice environment. As the retrieved literature was reviewed, reference lists revealed other relevant sources not first discovered in the organized literature search. These sources were obtained and included in the review. Although literature published within the last ten years was preferred, this search was not limited by date of publication due to a limited amount of literature specifically addressing the concepts of interest.

**Theoretical Framework**

An agreed upon framework for studying collegiality is not apparent in the existing literature. The following discussion will provide an overview of the frameworks that have been used and justification for the framework chosen in this study. Collegiality can
be considered a positive interpersonal working relationship (Beyer, 1979, 1981; Halstead, 1991; Hansen, 1995). The components that comprise this concept are not described consistently in all published literature (American Nurses Association, 2004; Beyer, 1981; Halstead, 1991; Hansen, 1995). The lack of theory development in this area may be partially to blame for this lack of conceptual clarity. The conceptualization that has been employed the most in nursing literature is that of Beyer (1979; 1981). Beyer (1979, 1981) describes collegiality as a relationship that consists of confidence and trust among group members, team efforts toward goal achievement, open communication, mutual help, mutual support, creativity, freedom from threat, friendliness and enjoyment. The following discussion will present several potential theoretical approaches to this study and explain why the chosen approach best fits this study.

Theoretically, discussion of the positive peer relationship has occurred rarely in the nursing literature. Kanter’s Structural Theory of Organizational Empowerment (Kanter, 1977; 1993) has been used to explain ideas related to empowerment of nurses but also has implications for peer relationships among nurses. According to Kanter’s theory, the work environment structure influences employee behaviors and attitudes. These behaviors and attitudes depend on the presence of power and opportunity. Opportunity is described as the ability for growth, mobility and the chance to increase knowledge and skills. Power is the accessibility of resources, information and support. Kanter’s theory further divides power into two components: formal power and informal power. Formal power comes from a job that allows flexibility, visibility and creativity. It also comes from jobs that are considered relevant and central to the organization.
Informal power is truly the portion of this theory that directly relates to peer relationships. Informal power comes from relationships with peers, subordinates, and superiors within and outside of the organization. Kanter affirms that having access to these sources of power and opportunity empowers workers to contribute to the organizational goals. Workers who do not have power and opportunity often have feelings of powerlessness, failure and frustration. They may feel there is no way out of their current job and additionally may lack the motivation to effectively accomplish the organizational goals. Laschinger, Sabiston, and Kutscher (1997) conducted a study testing Kanter’s theory and confirmed that positive relationships with people higher in the organization, peers, and subordinates are essential and contribute to organization communication and success.

A second theoretical approach to the peer relationship comes from Hansen (1991, 1995). Hansen developed and completed preliminary testing of a model of collegiality for staff nurses. The outcomes of this project resulted in a conceptual model describing collegiality as consisting of work group cohesion, job involvement, and substantive exchange. According to this model, a collegial work environment would result in a cohesive work group. Also, group members would be psychologically involved in their job. Lastly, nurses “would participate in an ongoing exchange of work-related, personal, and social give-and-take of benefits, including professional expertise, information, advice, mutual support, and assistance” (p. 17).

Sociology of Interaction Theory (Weber, 1969) was employed by Jacobs (1999) when studying collegiality among staff nurses using a qualitative approach. This theory involves analyzing the relationships existing among communication, interpretation, and
adjustment that occur between people. Jacobs theoretical approach is explained through the lens of symbolic interactionism where together the mind, self, and society determine interaction. This symbolic interactionist approach to understanding the interactions of staff nurses focuses on comprehension based on symbols, their intragroup experience, and processing of interpretations. Due to the complexity of the interaction piece of this framework, it may be most appropriately used in qualitative research.

The Nursing Worklife Model (Leiter & Laschinger, 2006) has been used to study working environments in the nursing discipline as well. This model explains how the five magnet hospital practices (Lake, 2002) interact to influence burnout among nurses. The five worklife factors include (1) nurse manager ability, leadership and support, (2) staff participation in hospital affairs, (3) collegial nurse-physician relations, (4) staffing resource and adequacy, and (5) nursing foundations for quality care (Manojlovich & Laschinger, 2008). The magnet characteristics listed do not focus on nurses working with other nurses. Ideas closely related to collegiality such as nurses’ relationships with members of other disciplines and leadership are part of the model. However; nurses’ relationships with their peers are not discussed.

The ideas of Rensis Likert (1961) have also been used to describe peer relationships within an organization. Likert was an organizational psychologist who developed a management theory referred to as Likert’s ideal model of highly effective work groups (Likert, 1961). This model focused on several variables: managerial leadership, organizational climate, peer behavior, group processes, and general satisfaction. According to this model, all processes within an organization need to be supportive in order for it to be effective and productive. Likert describes effective and
productive organizations as those where experiences and relationships allow workers to maintain a sense of self-worth and importance by contributing to their values, goals, expectations and aspirations. Although Likert is well known for his work surrounding management and leadership, this model incorporates the importance of interpersonal processes of and between all members of the workgroup. Likert (1961) explains, “every organization is a human enterprise whose success depends upon the coordinated efforts of its members” (p. 178). According to Likert (1961), groups possessing these characteristics are more likely to be effective and productive in terms of meeting the goals of the group.

Likert’s model contains several properties and performance characteristics of the ideal highly effective group. As mentioned in Chapter One, Beyer (1979, 1981) focused on the ‘peer behavior’ piece of Likert’s model and clarified and elaborated upon his work to describe how the model could be applied to the discipline of nursing. Beyer’s work resulted in eight components of collegiality that were drawn from Likert’s model; confidence and trust, team efforts toward goal attainment, open communication, mutual help, mutual support, creativity, freedom from threat, and friendliness and enjoyment. The original work of Likert (1961) is connected with the articulated components of collegiality (Beyer, 1979; 1981) drawn from Likert’s work in Table 1.

According to Beyer, all interactions among colleagues influence the concept of collegiality. Beyer and Marshall (1981) describe collegiality as a three dimensional concept involving interpersonal relations, decision making, and professionalism. The authors further elaborate on the meaning of the components of collegiality. Confidence and trust are described as aspects of peer relationships that demand honesty,
dependability and openness. Mutual help requires a willingness to share knowledge, lend assistance, help solve problems, assist others to do their best work, orient new members and assume one’s fair share of the workload.

Table 1

Collegiality and Likert’s Model of Highly Effective Workgroups

<table>
<thead>
<tr>
<th>Beyer’s Components of Collegiality (Beyer, 1979; 1981)</th>
<th>Relevant Discussion from Likert’s Model of Highly Effective Workgroups (Likert, 1961)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence and trust</td>
<td>The group members have a high degree of confidence and trust in each other.</td>
</tr>
<tr>
<td>Team efforts toward goal attainment</td>
<td>All group members accept willingly and without resentment the goals and expectations established by the group.</td>
</tr>
<tr>
<td>Open communication</td>
<td>High motivation and genuine interest in giving and receiving communication exists.</td>
</tr>
<tr>
<td>Mutual help</td>
<td>Members of the group will help one another when needed to successfully accomplish goals.</td>
</tr>
<tr>
<td>Mutual support</td>
<td>All interaction, problem solving, and decision making activities of the group occur in a supportive atmosphere.</td>
</tr>
<tr>
<td>Creativity</td>
<td>The highly effective workgroup stimulates creativity among members. The group attaches high value to new and creative approaches and solutions to its problems.</td>
</tr>
<tr>
<td>Freedom from threat</td>
<td>When disagreements occur, the group focuses on finding solutions rather than creating conflict. A cooperative rather than competitive relationship exists among group members.</td>
</tr>
<tr>
<td>Friendliness and enjoyment</td>
<td>Group members are attracted to the group and are loyal to all members.</td>
</tr>
</tbody>
</table>

Mutual support calls for a willingness to listen, to give recognition, praise, and positive feedback, and receptiveness to the opinions and ideas of others. Friendliness and enjoyment are aspects of the peer relationship that develop from warm, relaxed face-to-face interactions that express respect, interest in and concern for others. Team efforts
toward goal achievement involve coordination, cooperation, and encouragement of the best work of others. Creativity requires an atmosphere that allows, encourages, supports and values original perspectives. Open communication assumes a free exchange of ideas, the security to discuss problems, the sharing of important information, receptivity to information from others, and the ability to deal with conflict openly and objectively. Freedom from threat involves the ability to resolve differences peacefully and without interpersonal/intrapersonal loss or damage, a feeling of safety and security with colleagues, a non-stressful work atmosphere, and constructive criticism (Beyer & Marshall, 1981).

Comparison of the Presented Theoretical Approaches

Several potential theoretical approaches to peer relationships among nurses exist. Kanter’s Theory of Structural Empowerment (Kanter, 1993) is helpful in understanding several components of the organization and how the influence the sense of empowerment among nurses. Although the component of Kanter’s Theory focused on informal power is related to the positive peer relationships it is only one piece of the theory. The complexity and multiple variables in Kanter’s Theory are described in terms of how they interact together to influence organizational goals. It is unknown if the one component of informal power, which relates to peer relationships, would continue to have the same influence on organizational goals. Hansen’s conceptual model of collegiality shows potential for use in a study of nursing work relationships. However, the ideas presented by Hansen do not help inform the researcher of the potential outcomes of collegiality. Instead, the focus of this model is on describing the intricate pieces that make up the
Using Likert’s Theory of Highly Effective Workgroups along with the elaborations of the theory presented in Beyer’s work would likely be the most appropriate approach. This would allow a researcher to not only thoroughly describe the components of a collegial relationship but also to hypothesize what outcomes may result from a collegial environment. A researcher could hypothesize that an environment of collegiality would be a more productive environment.

Using Likert’s model (1961) as a framework in this study allowed for the examination of several working environment variables. The variable collegiality was used to examine the peer behavior piece of Likert’s model. Three other factors of the model were examined through the practice environment variable: managerial leadership, organizational climate, and group processes. The combination of these variables was used to look at effectiveness and productivity through the lens of missed nursing care. One element of Likert’s model, general satisfaction, was not used in this study.

**Collegiality**

**Theoretical and Opinion Based Literature**

Styles (1982) stated “professionalism of nursing will be achieved only through the professionhood of its members (p. 8).” Styles explained professionalism as a concept central to the individual and professionhood as a concept central to group with members acting on similar ideals and involving unity among its members. However, 30 years ago, Styles did not believe the profession of nursing had reached the level of professionhood required to encourage collegiality among its members. In her explanation of collegiality,
Styles offers that nurses are trained in compassion towards patients but often lack in demonstrating these ideals towards colleagues. She states that nurses have not developed a strong camaraderie. Peer relationships among nurses can be broken through jealousy and disagreement. Collegiality involves de-emphasizing differences, focuses on function, shares information, seriously considers the opinions of others, takes seriously the work of others, values constructive criticism, encourages risk taking, problem solving and mutual support, and stresses remediation rather than blame setting.

The discipline, for example, has had expectations regarding collegiality among its members for many years. Collegiality was the tenth standard of the Scope and Standards of Nursing Practice published by the American Nurses Association (ANA) for several years (1991, 1998, & 2004). However, the most recent edition (2010) eliminated collegiality as a standard. While ideas that create an environment of collegiality are present in other portions of the ANA’s documents, removing this as a standard seems to have diminished its importance. Previous editions of the ANA’s standards had two pages devoted to collegiality, its definition, and expectations in terms of fostering collegial interactions among nurse peers. The information regarding relationships with other nursing professionals is now part of the ANA’s Code of Ethics (2010). In the *Code of Ethics*, the ideas surrounding relationships are presented in pieces across different sections of the document. When collegiality was presented as a standard of professional performance, the nurse was expected to: share his or her knowledge with other nurses, provide feedback to peers regarding their performance, interact with colleagues to enhance one’s own practice, maintain compassionate caring relationships with peers, contribute to an environment that is conducive to the education of healthcare
professionals, and contribute to supportive healthy work environments (ANA, 2004). Including this information within the code of ethics removes the clarity present in previous documents and does not seem to signify the same level of importance as previous publications.

Williams (1997) argues about encouraging collegiality within the nursing profession. She talks about the need to have a shared understanding of what collegiality is, identifying barriers to achieving a collegial environment, and understanding avenues to facilitate collegiality. Presented in this article are thirteen steps to collegiality drawn from the work of Tierney and Rich (1992). These thirteen steps include ideas previously discussed but add items such as: strategies to connect new nurses with colleagues, building unity and pride, recognition, leadership assistance in dealing with struggles, debriefing after critical incidents, developing relationships across units, and yearly paid unit retreats.

Baltimore (2006) questions whether collegiality is fact or fiction in the title of her article. She confirms that in her experience nurses do ‘eat their young’. Baltimore explains that tenured staff often make the assumption that less experienced nurses are incompetent when what they truly need is support. The author discusses the presence of horizontal violence and describes this as the opposite of collegiality. Baltimore discusses the notion that this horizontal violence stems from academia which is also described in the work of Halstead (1991). In academia, the student’s workload is often unmanageable. Additionally, faculty may abuse their power and act in a superior way. In turn, as students graduate, this attitude of superiority is carried into the clinical setting.
These nurses, who in the past suffered as students and new nurses, then create the similar struggles for those for whom they are responsible to mentor and precept.

Academicians discuss collegiality as a potential criterion for evaluation and tenure (Hatfield, 2006). This discussion involves adding collegiality as a ‘fourth’ criterion of evaluation. Doing so would be in addition to the existing criteria of teaching, scholarship, and service. Similar to the insight gained in most existing literature, Hatfield (2006) explains that a lack of collegiality is easier to identify when outcomes such as isolation, dissatisfaction, and conflict are present. Hatfield argues that the lack of conceptual clarity and subjectivity involved in detecting collegiality is a hindrance to the implementation of this as a fourth criterion for evaluation.

Hudec (2006) addresses collegiality as a possible answer to twenty-first century management theories. Collegiality is defined in this article as a respectful environment in which each person is able to contribute through an open, honest atmosphere that supports informed, different views and opinions. Hudec indicates that a collegial environment provides many benefits to a place of business including greater productivity through improved morale, increased innovation and insight, willingness to accept and support change through participation, genuine interest in customers improving communication, more active interaction with suppliers, reduced costs, and increased revenues.

Dawson (2008) discusses the need for nurses with differing areas of expertise to collaborate in a collegial manner to influence patient outcomes. This author uses the terms collegiality and collaboration interchangeably. He presents the argument that physicians collaborate more frequently than do nurses. In the opening of his article
Dawson discusses the cordial exchanges among physicians and the fact that often a ‘thank-you’ is even placed in the patient’s chart when a physician consults another physician. He argues that physicians are more willing to ask for the expertise of another physician and believes this does not take place in nursing. Anecdotally, this article states collegial interactions among nurses result in positive patient outcomes, however, no empirical evidence was presented in this article.

**Empirical Literature**

Beyer (1979; 1981) studied nurses in academia to assess the presence of and satisfaction with collegial communication using the Survey of Collegial Communication (SCC). She distributed a cross sectional mail survey using a random sample of 222 full time female educators in baccalaureate schools of nursing in Texas. Inspection of findings of this study indicated faculty felt as though collegial relationships were important, however, participants were dissatisfied with collegial interactions and felt as though interpersonal interactions among colleagues were less supportive than desired. The degree of involvement in curriculum revision and perceptions of faculty effectiveness in achieving goals explained the most variance in collegial interactions. Perceptions of effectiveness and years of experience were found to explain the most variance in satisfaction with collegial communication. This study is the first empirical work found in the discipline of nursing. It is set in the context of nursing education and provides valuable information in terms of the reliability and validity of the SCC, and faculty members’ satisfaction with collegiality. Results of this study do not provide the discipline with an understanding of collegiality among staff nurses. Nor do the findings aid in the understanding of the potential outcomes of a collegial environment. Beyer
changed her research trajectory after completing this single study and did not further study the concept of collegiality.

Dick (1986) studied collegiality among nursing faculty members employed in schools of nursing accredited by the National League for Nursing (N=200). In this descriptive correlational study, burnout and the relationships burnout had with management style, collegial support and workload were examined. Collegial support in this study was measured using an abbreviated version of the Survey of Collegial Communication (SCC). This abbreviated version consisted of the items rated as being most important to the participants in Beyer’s (1979; 1981) study. Collegial support was defined as, “the character of interaction between faculty members based upon understanding, trust, and openness of communication” (p. 253). Burnout was divided into three categories; emotional exhaustion, depersonalization, and personal accomplishment. Collegial support was negatively correlated with emotional exhaustion ($r = -.41$) and depersonalization ($r = -.26$). A positive correlation was shown between collegial support and personal accomplishment ($r = .21$). Using regression analysis, collegial support was found to be a stronger predictor of burnout than management style. With emotional exhaustion, collegial support was a predictor ($\beta = -.33$) and management style was also a significant predictor ($\beta = -.18$). Beta values are not stated for depersonalization and personal accomplishment, however, the report states collegial support remained a stronger predictor than did management style.

Dick (1992) replicated her study with a sample of 400 nurse faculty members who were members of the American Nurses Association with results consistent with the finding of her 1986 study. These studies aid in the understanding of collegiality and its
relationship to the concept of burnout. As participants were nursing faculty, the results are not inherently generalizable to acute care staff nurses since the day to day work of an academic is so different from that of the work of a bedside nurse.

Halstead (1991) studied collegiality between students \((n=104)\) and faculty \((n=45)\) in a baccalaureate nursing program. Halstead framed her work in the context of role modeling. She believed that faculty behaviors influence students in that role modeling socialized nursing students to behave in non-collegial ways. This socialization was then transferred into the clinical setting. An interesting finding of Halstead’s study was the difference in perceptions of collegiality among the faculty and students studied. Although faculty felt as though a collegial relationship existed, students did not. This study is helpful in studying collegiality in that it adds to one’s knowledge of the concept of collegiality and how it may relate to the nursing discipline; however, the sample was outside of clinical nursing thus the context of the study does not really aid in understanding collegiality among nurses practicing in the hospital setting. Halstead does discuss her belief that this lack of collegiality is transferred to the clinical setting. This belief, however, is not investigated empirically through this research.

Chapman (1993) used the SCC (Beyer, 1979; 1981) to study collegial support among 200 staff nurses. She found a negative relationship between collegial support and perceptions of job stressors. In addition, nurses under the age of 25 had the highest levels of stress and lowest levels of collegial support. Nurses over the age of 50 in this study had the lowest levels of stress and highest levels of collegial support. Also, those who did not rotate shifts had higher levels of collegial support. Unfortunately, the published
report did not provide any detail about statistical findings which raises questions about the validity of the findings.

Hansen (1991, 1995) developed and completed preliminary testing of a model of collegiality for staff nurses. The result was a conceptual model describing collegiality as consisting of work group cohesion, job involvement, and substantive exchange. A collegial work environment would then have a cohesive work group. Also, group members would be psychologically involved in their job. Lastly, nurses “would participate in an ongoing exchange of work-related, personal, and social give-and-take of benefits, including professional expertise, information, advice, mutual support, and assistance” (p. 17). This author developed her own instrument and this appears to be the only study in which her instrument has been used (Hansen, 1991; 1995). No further work has been reported. Theoretically, this study is helpful to the discipline, however, the investigator did not study any outcomes associated with collegiality and the lack of further research utilizing this model creates questions regarding its currency today.

Jacobs (1999) completed a complex mixed methods study of collegiality among staff nurses that included multiple steps. Jacobs created a quantitative instrument to study collegiality among staff nurses (N = 142). The report describes the quantitative data as mainly being used to clarify the qualitative data. Qualitative data collection included participant observation and the use of the internet (Nursenet). The internet data collection included gathering information found on three different websites discussing issues such as; communication, role autonomy, eating their young, males in nursing and abuse in nursing.
Inspection of the findings resulted in the creation of a model of collegiality involving structure, culture, and behavior. Jacobs described structure as that which produces the professional culture that affects the behavior of nurses. Jacobs spends time explaining both the positive and negative aspects of the peer relationships that exist among staff nurses. Collegiality is constructed at different levels. The levels described are the staff level, unit level, hospital level, and professional level. At the individual level, collegiality involves staff-to-staff interaction where nurses experience having to complete tasks together and also experience social exchange. Social exchange, in this model, is subjective and influenced by the history the staff members have with each other. Unit level collegiality is described as the expected behaviors of the entire unit involving but not limited to values of equality, support, and direct communication patterns rather than gossip. Collegiality at the hospital level involved staff nurses involvement in committees, unit to unit communications, and unity among the entire nursing staff. Collegiality at the professional level involved items such as participation in national nursing organizations, willingness to share ideas and challenge the ideas of nursing leadership.

The work of Jacobs is thorough and informative in terms of describing collegiality in nursing from the perspective of staff nurses. This is a qualitative study that contributes to the theoretical and conceptual understanding of collegiality. This study was completed over a decade ago and no further publications or studies have been found. The findings of this study contribute to the science of understanding and describing collegiality but it does not help the discipline understand the outcomes of a collegial environment on nurses, patients or the healthcare industry in general.
Duddle and Boughton (2007) did not specifically focus on positive or negative relationships but rather discussed relationships among nurses from a neutral standpoint using the phrase intraprofessional relations in nursing. These qualitative researchers found that nurses navigate their way through the workplace by means of a series of complex negotiations. Nurses develop skills to assess the potential outcome of an interaction prior to approaching another nurse. Nurses also develop some level of resilience in their workplace and generally accept relationship issues as a part of working life (Duddle & Boughton, 2007). Outcomes of this study reinforce an understanding that peer relationships among nurses are extremely complex. After this qualitative study, these authors made a step towards furthering nursing science in this area by creating a quantitative tool to measure intraprofessional relations in nursing. The Nursing Workplace Relational Environment Scale (NWRES) was developed and psychometrically tested (Duddle & Boughton, 2009), however, further use of the tool by these authors did not occur because of new career paths for the researchers (M. Duddle, personal communication, September 24, 2012). A copy of the tool was received and reviewed by this author. This tool contained several items that were very similar to the SCC. However, it was not as comprehensive as the SCC nor was it divided into the eight components of collegiality.

Padgett (2013) completed an ethnographic case study involving participant observation, semi-structured interviews, and policy analysis on an inpatient unit in an urban teaching hospital. The purpose of this study was “to understand how staff nurses manage variations in practices within the group, and negotiate the rules-in-use for quality of care, collegiality, and accountability” (p. 1407). Staff exhibited a dependence on
mutual assistance, however, an absence of a system of group practice resulted in barriers to the availability of mutual assistance. This led to what is referred to by the author as ‘mutual deference’; a strategy of reciprocal tolerance and non-interference that gave wide discretion to each nurse’s decisions about care. Padgett reports that in order to improve professional accountability attention will need to be paid to material constraints, the organization of nursing work, communication and leadership skills.

**Critique of Existing Literature**

Although literature discussing collegiality among nurses is limited, one can draw some conclusions from what has been published. Collegiality involves interactions. Individuals involved in these interactions may not have the same perception of this experience. Such a perspective was evident with the study completed by Halstead (1991) in which faculty perceived interactions to be collegial and students did not. Discussions of collegiality in nursing academia may not be seen as pertinent to clinical nursing practice. However, Halstead (1991) and Baltimore (2006) argue that the non-collegial behaviors seen in academia by students will then be utilized in clinical practice. Collegiality was negatively related with stress (Chapman, 1993) and burnout (Dick, 1986). Baltimore (2006) and Dawson (2008) both use the term collegiality and candidly discuss the topic. However, no research was conducted or presented in these articles. In order to demonstrate the importance of collegiality, learn the effects of a collegial environment, and foster the growth of collegial relationships a focus on generating empirical studies on this topic is necessary.

Empirical literature on the topic of collegiality is rare with only a few studies being published per decade. Such a record impedes advancement of the science.
Although data are lacking, conceptually the discipline has been fairly consistent describing what collegiality means. Collegiality, in the current study, is defined as a positive interpersonal working relationship (Beyer, 1979; 1981; Halstead, 1991; Hansen, 1991, 1995). Several authors have used the Survey of Collegial Communication (SCC) developed by Beyer (1981). However, the focus of investigations have varied, contributing to difficulty in comparing results and drawing conclusions about collegiality within the nursing profession. The most agreed upon understanding of the components of a collegial relationship in nursing can be attributed to Beyer (1979; 1981). Thus, a collegial relationship would involve confidence and trust, teamwork, open communication, mutual help, mutual support, creativity, freedom from threat, and friendliness and enjoyment. Beyer was focused on studying nursing academics; however, this definition of collegiality has been used when examining collegiality in practice as well.

Hansen (1995) looked at collegiality from the perspective of a staff nurse. Hansen’s conceptual model of collegiality meshes well with that of Beyer. The first component of Hansen’s model is work group cohesion. Work group cohesion is the degree to which an individual feels integrated into the work group. Beyer’s components of mutual help, mutual support, and teamwork all fall under this component. The second component of Hansen’s model is job involvement. This is described as the degree of personal psychological identification with the current job. The logical connection between this component and Beyer’s involves the idea of creativity. Allowing the nurse to function with a degree of creativity will likely help them to feel connected to their work. Substantive exchange is the third component of Hansen’s model and is described
as the degree of give-and-take among coworkers of valued work-related, social and personal benefits. This can be connected with the following components of Beyer’s model: open communication, confidence and trust, freedom from threat, and friendliness and enjoyment.

Nursing cannot fully understand the influence that collegiality has on work environments and patient outcomes until a body of literature providing empirical data exists. Quantitative research correlating collegiality with pertinent phenomena must be considered to truly understand the implication of collegiality in nursing work environments. In order to focus on this idea and make it generalizable to all environments of nursing, the definition of collegiality must be consistent throughout the literature. Even though the empirical data are lacking, several professional organizations have identified the need for improvement of the working environments of nurses. The current conceptualization of the nursing practice environment is lacking collegiality among nurses as a component (Lake, 2002).

Missed Nursing Care

Theoretical Based Literature

A concept analysis of missed nursing care was published in 2009 (Kalisch, Landstrom, & Hinshaw). Missed nursing care is described as a patient safety issue involving errors of omission on the part of nurses. Missed nursing care is defined as “any aspect of required patient care that is omitted (either in part or in whole) or delayed” (p. 1509).

The Missed Nursing Care Model (Kalisch, Tschannen, Lee, & Friese, 2011) was developed based on the results of two studies (Kalisch, 2006; Kalisch, & Williams,
The model is organized into three concepts. The first concept, structure, includes hospital and unit and staff characteristics. These are thought to lead to the second concept, process, which is made up of the missed nursing care. Missed nursing care in turn is thought to influence the third concept, outcome, which includes both staff and patient outcomes. Although the model is not described as such, it seems to be based on Donabedian’s model, which is also organized into the concepts of structure, process, and outcome (Donabedian, 2003).

Ironically, while in the midst of studying missed nursing care, Dr. Kalisch became a patient herself. She provides narrative reflections of her experiences as a patient (Kalisch, 2010a; 2010b). In these two articles, Kalisch explains that, while in the hospital, the nurses missed care such as ambulation, oral care, turning, and provided little emotional support or empathy for her situation. She recalls a situation where she had to wait over two hours for pain medication even though she requested medication countless times. The experiences Kalisch had as a patient and her moving descriptions depicting the substandard care she received further emphasized the importance of studying the concept of missed nursing care.

**Empirical Literature**

Empirical investigation into the concept of missed nursing care began in 2006 when Kalisch conducted a qualitative study. She sought to determine the frequency and type of care that was missed by nurses along with their perceptions of the reasons for missed nursing care. Inspection of results identified nine elements of regularly missed nursing care: ambulation, turning, delayed or missed feedings, patient teaching, discharge planning, emotional support, hygiene, intake and output documentation and surveillance.
Seven themes emerged as reasons for the missed nursing care and included: too few staff, time required for a nursing intervention, poor use of existing staff resources, it’s not my job syndrome, ineffective delegation, habit, and denial.

Building on the results of this qualitative study, a survey to measure missed nursing care was created. This survey, titled the MISSCARE Survey, is a quantitative tool demonstrating acceptable reliability and validity (Kalisch & Williams, 2009). The survey has two sections: the first examined the nurses’ perceptions of what nursing care was missed; and the second looks at the perceived reasons for missed nursing care. This survey has been used to gain a better understanding of missed nursing care and the connection it has to other variables in the nursing work environment. Tschannen, Kalisch, and Lee (2010) found that units with higher levels of missed care and absenteeism had more staff with intention to leave.

Kalisch, Landstrom and Williams (2009) reported nursing assessments were missed by 44% of nurses. Interventions, basic care, and planning were reported to have been missed by greater than 70% of the respondents. Reasons for the missed care included labor resources (85%), material resources (56%), and communication (38%). Additionally, associate degree prepared nurses reported missing more nursing care than baccalaureate and diploma prepared nurses.

Continuing, Kalisch (2009) sought to learn more about the RNs (n=13) versus nursing assistants’ (NA) (n=9) perceptions of the elements and reasons for missed care. She also sought to understand how differences in these perceptions explained issues underlying teamwork. Although the RNs and NAs were providing their impressions of the same elements of nursing care, the RNs reported more missed nursing care than did
NAs. Kalisch (2009) believed these findings indicate a lack of teamwork within the nursing work environment. This led to a 2010 study (Kalisch & Lee) aimed at better understanding the impact of teamwork on missed nursing care. Teamwork was assessed using the Nursing Teamwork Survey (NTS) (Kalisch, Lee, & Salas, 2010). Predictors of missed nursing care were analyzed using multivariate analyses and indicated teamwork alone accounted for 11% of missed nursing care.

A 2011 study conducted by Kalisch, Tschannen, Lee and Friese was helpful in understanding the relationships among missed nursing care and several other variables. The type of nursing care most frequently missed was ambulation with 32.7% of nurses reporting they always or frequently missed this task. Attendance at care conferences was frequently or always missed by 31.8% of nurses and mouth care was frequently or always missed by 25.5% of nurses. Care that was rarely missed included patient assessments, glucose monitoring, and vital signs. The top reasons for missed nursing care were inadequate labor resources (93.1%), inadequate material resources (89.6%) and lack of communication (81.7%). Nurse reported an unexpected rise in patient volume and/or acuity as the top reason for missed nursing care within the labor resources subscale (94.9%). Staff with fewer years of experience reported less missed nursing care. Additionally, night shift nurses missed less nursing care. Nurses who were absent two or more shifts in the past three months reported more missed care. When nurses viewed staffing levels as adequate they missed less nursing care. The authors concluded that this research is helpful since understanding variables that have a relationship with missed nursing care may allow for quality improvement within institutions.
Less missed nursing care has been found to occur in magnet hospitals (Kalisch & Lee, 2009). Areas with the least missed nursing care were found to have higher levels of teamwork according to one study (Kalisch, Gosselin, & Choi, 2012).

**Critique of Existing Literature**

Missed nursing care is a fairly new concept used as a variable in nursing research. The research trajectory has taken a respectable course including a qualitative study to learn more about the components of the concept (Kalisch, 2006), a concept analysis to clearly define the concept and lay the groundwork for survey development (Kalisch, Landstrom, & Hindshaw, 2009), the development of a quantitative survey including a published article analyzing psychometrics (Kalisch & Williams, 2009), and finally several reports of research aimed at exploring the relationships that exist among missed nursing care and other variables in the nursing work environment. The state of knowledge development surrounding this concept is a great foundation for any researcher wishing to utilize this concept as either an outcome or predictor variable in future studies including the study proposed in this paper.

**The Nursing Practice Environment**

**Theoretical Literature**

The nursing practice environment, conceptualized by Lake (2002), has its theoretical foundations in the sociology of organizations, occupations and work. Hospital administrators must make decisions about how to organize teams of workers to carry out large tasks, how to organize professional staff, and how to organize unpredictable, complex workloads. The nursing practice environment can be defined as, “the organizational characteristics of a work setting that facilitate or constrain professional
nursing practice” (Lake, 2002, p. 178). Lake’s (2002) nursing practice environment is based on a professional model of work organization that is a goal centered approach emphasizing individual qualifications and collegial control systems operating within the professional staff. The nursing practice environment is composed of five factors: nurse participation in hospital affairs, nursing foundations for quality of care, nurse manager ability, leadership and support of nurses, staffing and resource adequacy, and collegial nurse-physician relations.

Lake (2002) elaborates on the meaning of each factor of the nursing work environment. Nurse participation in hospital affairs involves the inclusion of nurses in activities such as internal governance, policy decisions, and committees. Nurses in such environments have opportunities for advancement and are able to communicate openly with nursing administration who are in turn responsive to the nurses’ ideas and concerns. Nurse executives are powerful, visible and accessible (Lake, 2002).

The second factor, nursing foundations of quality care, emphasizes a high standard of patient care. Care is based upon a nursing model, rather than a medical model of care. Nurses are clinically competent. A formal quality assurance program exists. Also, new staff are provided with what they need to practice and continuing education is provided for all staff (Lake, 2002).

The third factor, nurse manager ability, leadership, and support of nurses, involves nurses perceiving their manager as both a good manager and a good leader. In addition, the nurses must feel supported by the manager. This includes support when conflict with a physician occurs, support when nurses make mistakes, and being recognized for a job well done (Lake, 2002).
The fourth factor, staffing and resource adequacy, suggests that staffing and support resources must be adequate to provide quality patient care. This involves having enough nurses working at any given time. Nurses also need to have the ability to spend time with patients and be able to discuss patient care problems with other nurses (Lake, 2002).

The fifth factor, collegial nurse-physician relations, involves the existence of positive working relationships between nurses and physicians. The existence of such a relationship was found to be important to nurses (Lake, 2002).

Lake (2007) reviewed tools that may be used to study the practice environment. She concludes that the PES-NWI (Lake, 2002) is the most appropriate tool available, however, the practices from Lake (2002) may not be comprehensive enough to describe the working environment as a whole. She suggests that four key factors may be missing, they are: autonomy, recognition/advancement of nurse preparation and expertise, professional development, and supportive relationships with peers.

**Empirical Literature**

The nursing practice environment was first conceptualized in an effort to produce a succinct and psychometrically sound tool to measure factors in the nursing work environment. The Practice Environment Scale (PES) (Lake, 2002) was derived from the Nursing Work Index (NWI). The NWI was developed during the nursing shortage of the 1980s with a goal of measuring hospital characteristics which aided in attracting and retaining nurses (Kramer & Hafner, 1989; McClure, Poulin, Sovie, & Wandelt, 1983). The shorter practice environment scale was needed in order to provide a measure suitable
for outcomes research aimed at demonstrating connections between the nursing practice environment and nurse and practice outcomes.

Since the creation of the PES-NWI (Lake, 2002), the practice environment has been studied extensively in relation to both nursing and patient outcomes. A positive practice environment contributes to nurses’ job satisfaction (Lake, 2007; Manojlovich, 2005). Negative outcomes associated with a poor practice environment include: nurses’ intent to leave (Stone et al., 2007), higher levels of burnout among nurses (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002), and turnover (Strachota, Normandin, O’Brien, Clary, & Krukow, 2003). As far as the patients are concerned, hospitals with poorer nursing practice environments have been shown to have higher mortality rates (Aiken, Clarke, Sloane, Lake & Cheney, 2008; Aiken, Smith, & Lake, 1994; Friese, Lake, Aiken, Silber, & Sochalski, 2008), and increased odds of failure to rescue (Aiken et al, 2008; Friese et al, 2008). Those with better practice environments have been found to have reduced numbers of nurse sensitive patient outcomes such as catheter associated urinary tract infections (Stone, Mooney-Kane, Larson, Horan, Glance, Zwanziger & Dick, 2007). It is evident that the practice environment as a whole is related to both nurse and patient outcomes.

Many investigators have included all factors of the practice environment in their studies through the use of the PES. Conversely, some authors have examined the relationship individual factors of the practice environment have with nurse and patient outcomes. Increased nurse participation in hospital affairs has been associated with lower mortality rates and decreased failure to rescue (Friese, Lake, Aiken, Silber, & Sochalski, 2008). However, other studies have found no connection among nurse

Environments where quality of clinical care is emphasized have been found to be associated with patient outcomes such as patient mortality and failure to rescue. Aiken, Clarke, Sloane, Lake and Cheney (2008) found a negative relationship between patient mortality and an environment focused on quality of care while Friese, Lake, Aiken, Silber, and Sochalski (2008) found a negative relationship between an environment focused on quality of care and failure to rescue. Laschinger and Leiter (2006) found fewer nurse reported adverse events in an environment where quality of care was emphasized. In addition, hospital acquired infection rates were lower in such environments (Stone et al, 2007).

Patient mortality, failure to rescue, and catheter associated urinary tract infections have been shown to be lower when nurses report higher levels of nurse manager support (Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Friese, Lake, Aiken, Silber, & Sochalski, 2008; Stone et al., 2007). However, no relationship was found between supportive managers and patient outcomes by other authors (Capuano, Bokovoy, Hitchings, & Houser, 2005; Gardner, Fogg, Thomas-Hawkins, & Latham (2007); Manojlovich & DiCicco, 2007). Adequate staffing has been shown to have a strong association with both nurse and patient outcomes (Aiken, Sloane, Lake, Sochalski, & Weber, 2008; Aiken, Smith, & Lake, 1994; Lake & Friese, 2006). Sasichay-Akkadechanunt, Scalzi, and Jawad (2003) reported a relationship between inpatient hospital nurse staffing and patient
morality. Inadequate staffing has also been associated with burnout and job dissatisfaction among nurses (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). Collegial nurse-physician relations were found to positively correlate with patient outcomes such as decreased patient mortality, failure to rescue, catheter-associated urinary tract infections and improved patient health status after discharge (Aiken, Sloane, Lake, Sochalski, & Weber, 2008; Friese, Lake, Aiken, Silber, & Sochalski, 2008; Stone et al., 2007).

**Critique of Existing Literature**

Collegiality among nurses is not part of the nursing practice environment literature. Lake (2007) admits that the practice factors from Lake (2002) may not be comprehensive enough to describe the working environment as a whole. One area lacking in the five factors previously described is that of supportive peer relationships among nurses (Lake, 2007). Lake (2007) also explains that the practice environment should include autonomy, recognition/advancement of nurse preparation and expertise, professional development, and supportive relationships with peers. Lake does not further describe the meaning of these potential additions but instead simply states these factors should be included in future assessment of the practice environment. The existing practice environment literature has demonstrated that the practice environment does have an influence on nurse and patient outcomes. This body of literature could be improved by providing empirical data to support the areas of the practice environment not included in the current version of the practice environment scale and the relationship of these factors to nurse and patient outcomes. Investigating the concept of collegiality among nurses is one step towards improving the knowledge base in this area of nursing science.
Chapter Summary

A detailed literature review of the concept of collegiality as well as identification of the role select factors may exert on this concept are presented in this chapter. Literature regarding concepts similar to collegiality, missed nursing care, and the professional practice environment were also reviewed. Theoretical and opinion based literature, empirical evidence and finally a critique of the existing published literature was provided in each section of this chapter. This literature review provides the familiarity necessary to fully understand the concepts under investigation in this study.
Chapter Three

Methods

The purpose of this study was to describe collegiality among registered nurses working at the bedside in the hospital environment. Specifically, this study aimed to gain an understanding of: (1) the perceptions of hospital nurses regarding the presence of collegiality in their environment; (2) whether differences exist among nurse’s perceptions of collegiality and personal characteristics (age, years nursing experience, educational preparation, and gender) or workplace characteristics (years at current place of employment, hours worked per week, model of care delivery, and shift); (3) the relationships among nurses’ perceptions of collegiality and the nursing practice environment; (4) the influence of working environment factors on missed nursing care; and (5) collegiality’s influence as a mediator to the effect of the nursing practice environment on missed nursing care.

The research methods used to gain information about collegiality among staff nurses and the relationship between collegiality, missed nursing care, and the practice environment are described in this chapter. The design, sample selection procedure, details of instruments utilized, data collection methods, and data analysis techniques are explicated.

Research Design

A non-experimental, descriptive, correlational design was employed in this study (Shadish, Cook, & Campbell, 2002). This design was chosen because little research has been done in the area of collegiality and gaining a better understanding of the state of collegial relationships among staff nurses working in the hospital setting is needed. This
design allows for the understanding of both the current state of collegiality in nursing work environments and the influence collegiality has on missed nursing care when compared with other nursing work environment factors.

**Sample**

Inclusion criteria consisted of registered nurses working in the hospital setting who practice at the bedside and are employed at least 20 hours per week. Bedside nurses were chosen because the day-to-day work of a bedside nurse is likely to require a great deal of colleague interaction. Exclusion criteria included nursing personnel who are not registered nurses, nurses who work in settings other than a hospital, and registered nurses who do not provide bedside nursing care such as managers and hospital administrators. The sample was limited to bedside hospital nurses in an effort to maintain consistency in the work setting and working relationships. However, it was noted that even within the hospital setting nurses work under different care delivery models. Thus, an item was placed on the survey to determine what type of care delivery model was being used (ie: team nursing or primary nursing).

Only surveying bedside nurses controlled for many possible confounding variables. Nurses working in administration, management, home care, extended care, and outpatient clinics may have very different work environments and the type of interactions and work may differ greatly. Only nurses who work 20 or more hours per week were included to ensure the participants are present in the work setting often enough to be familiar with their coworkers and the environment. Organizational characteristics may influence results as well. Utilizing a large statewide sample of nurses working at a variety of institutions would decrease the likelihood of organizational characteristics
having a significant influence on the overall results. Additionally, a statewide sample
from a variety of hospitals was sought due to the ability to generalize the findings of this
study to the nursing discipline as a whole (Shadish, Cook, & Campbell, 2002).
However, due to recruitment issues, a nationwide sample was obtained which may serve
to increase the generalizability of the results.

Sample size was determined with an understanding of the statistical analyses
planned. The most advanced statistical technique used for this study was stepwise
multiple regression. Tabachnich and Fidell (2013) explain that when using multiple
regression, as many as 40 participants are needed for each predictor variable. Six
predictor variables were included in this study, meaning a sample of 240 was necessary.
Using an a priori power analysis with an effect size of .05, power or .80, six predictors
and a probability of .05, a minimum of 278 participants were required. The obtained
sample exceeded both a priori recommendations. Although a sample of 779 was
obtained, the usable sample was decreased to 557 after the data set was cleaned. The six
predictor variables in this study were: collegiality, nursing foundations of quality care,
nurse manager ability, leadership, and support, staffing and resource adequacy, and
collegial nurse-physician relations.

Recruitment for this study was originally planned to involve only members of one
state nursing association. This sample was chosen because the vast majority of nurses
who are part of this organization meet the inclusion criteria for the study. The
organization is made up of 10,000 nurses, so an adequate sample size was likely to be
achieved, and the organization agreed to provide the survey link to all members whom
they could reach through electronic mail invitation (Appendix D). This invitation was to
be sent to members by the director of the state nursing association. Receiving the electronic mail from a leader in the organization was seen as a superior method to receiving an invitation from a stranger (Dillman, 2009).

The invitation email was to be sent to members of the organization on December 2, 2013. A follow-up email was also created (Appendix E) by the primary investigator and was to be sent to members of the MNA approximately two weeks after the initial email. The email containing a link to the survey was sent to the Associate Executive Director of Nursing Practice for the MNA on December 2, 2013. However, given priority needs of the MNA a delay in distribution of the survey occurred.

A link to the survey was posted on MNA’s website and Facebook page on December 12, 2013 without previously notifying the primary investigator. It is unclear whether or not an email was sent. An amendment to the IRB was submitted on January 10, 2014 (Appendix F). This amendment was approved and allowed for the sample to be recruited through Facebook and the MNA website. After gaining this approval, the primary investigator shared the survey link via Facebook. This resulted in a snowball effect in that acquaintances of the primary investigator began sharing the survey on their Facebook pages. This recruitment strategy resulted in approximately 180 completed responses to the survey over approximately six weeks.

Recruitment was slowing, and after consultation with the committee, a decision was made to access another organization: the American Association of Critical Care Nurses (AACN). Following receipt of a second IRB amendment (Appendix G), the survey link was posted to the AACN’s Facebook page and Twitter feed. An email was sent to all AACN members on February 6, 2014. An adequate sample was achieved and
data collection for this study ceased on February 8, 2014. Refer to Table 2 for a description of the actual and planned recruitment for this study.

**Table 2**

*Comparison of Intended and Actual Timeline for Data Collection and Recruitment*

<table>
<thead>
<tr>
<th>Intended data collection timeline</th>
<th>Actual data collection timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/2/13 Survey link sent to MNA by primary investigator (PI), MNA to forward to all members</td>
<td>12/2/13 Survey link sent to MNA</td>
</tr>
<tr>
<td>12/16/13 Reminder email to be sent to MNA by PI, MNA to forward to all members</td>
<td>12/12/13 Survey link posted to MNA Facebook page and website</td>
</tr>
<tr>
<td>1/10/14 Tentative data collection completion date pending adequate sample size</td>
<td>1/10/14 Facebook link through MNA shared on Facebook by PI</td>
</tr>
<tr>
<td>1/28/14 Survey link shared by AACN on Facebook and Twitter</td>
<td>2/6/14 AACN shared survey link via email with all AACN members</td>
</tr>
<tr>
<td>2/8/14 Data collection ceased as adequate sample size was reached</td>
<td></td>
</tr>
</tbody>
</table>

All participants were provided an opportunity to be part of a recruitment incentive involving a drawing for ten $50 Amazon.com gift cards. In order to allow for anonymity while still collecting contact information, two different Qualtrics surveys were created. One survey contained the research materials. A second, and completely separate survey, requested contact information from those who chose to take part in the prize drawing. After completion of the research portion of the survey, participants were provided with a link to a contact information Qualtrics survey. Participation in this recruitment drawing was voluntary and those who chose not to participate were directed not to follow the link.
or provide any contact information. After data collection was complete, the Qualtrics contact information survey was exported to Statistical Program for Social Sciences version 21 (SPSS). SPSS was then used to select 10 cases at random and the selected cases were provided with a $50 amazon.com gift card.

**Procedures for Data Collection**

Permission to conduct the study with exempt status was obtained from the University of Wisconsin-Milwaukee (UWM) Institutional Review Board (IRB) (Appendix H). The instruments were entered into Qualtrics, a web based tool for building surveys. Once the survey was built, a link was created allowing potential participants to click on the link and immediately access the survey. Completion and submission of the survey served as consent for participation. Participants were informed of the risks and benefits of the study in the first item of the Qualtrics survey. The text for this item can be found in Appendix I.

**Instrumentation**

Three surveys were used to gather data and were administered in the following order: the Survey of Collegial Communication (SCC) (Beyer, 1979) (Appendix A), the Practice Environment Scale (PES) of the Nursing Work Index (NWI) (Lake, 2002) (Appendix B), and the MISSCARE Survey (Kalisch & Williams, 2009) (Appendix C). In addition, a personal and workplace characteristics questionnaire was used (Appendix J). The primary variable of interest in this study was collegiality that was measured by the SCC (Beyer, 1979).
The Survey of Collegial Communication

Description of the instrument. The Survey of Collegial Communication (SCC) was developed by Dr. Judith Beyer (1979) and was used to measure collegiality. The SCC was modified from the Survey of Organizations that was developed by the Institute for Social Research at the University of Michigan (1972). The SCC consists of 40 items divided into eight categories, called components (refer to Table 3 for a list of the components and corresponding items). Each of the 40 items begins with “to what extent.” The participants then provide their response according to an “extent scale” with the following response options: to a very little extent (1), to a little extent (2), to some extent (3), to a great extent (4), to a very great extent (5).

Table 3

<table>
<thead>
<tr>
<th>Component</th>
<th>Corresponding Items</th>
<th>Subscale Reliabilities from Beyer (1979; 1981) (N=222)</th>
<th>Subscale Reliabilities in current study (N=502)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence/Trust</td>
<td>4, 5, 21, 26, 39</td>
<td>.84</td>
<td>.89</td>
</tr>
<tr>
<td>Teamwork</td>
<td>7, 14, 22, 25, 35</td>
<td>.85</td>
<td>.89</td>
</tr>
<tr>
<td>Open Communication</td>
<td>3, 11, 15, 29, 33</td>
<td>.83</td>
<td>.80</td>
</tr>
<tr>
<td>Mutual Help</td>
<td>1, 2, 12, 19, 37</td>
<td>.83</td>
<td>.82</td>
</tr>
<tr>
<td>Mutual Support</td>
<td>6, 13, 23, 27, 28</td>
<td>.86</td>
<td>.90</td>
</tr>
<tr>
<td>Creativity</td>
<td>8, 16, 17, 31, 40</td>
<td>.87</td>
<td>.87</td>
</tr>
<tr>
<td>Freedom from Threat</td>
<td>9, 18, 20, 24, 32</td>
<td>.82</td>
<td>.85</td>
</tr>
<tr>
<td>Friendliness/Enjoyment</td>
<td>10, 30, 34, 36, 38</td>
<td>.88</td>
<td>.86</td>
</tr>
</tbody>
</table>

Reliability. Reliability estimates using the Cronbach alpha coefficient for the various subscales of the SCC in previous studies resulted in .98 for the total SCC. Component subscales Cronbach alphas ranged from .82 to .88 (Beyer, 1979; 1981). In the current study, the Cronbach alpha for the total SCC was .98 and subscale values ranged from .80 to .90 (N = 557).
**Validity.** Both face and content validity were established by a panel of three independent judges (Beyer, 1979; 1981). As the instrument is somewhat dated, additional analyses and updating were undertaken to ensure currency in assessing collegiality in nursing. Additionally, the instrument as used by Beyer (1979; 1981) was geared towards nursing faculty. It was necessary to gain an understanding of whether the items would be appropriate for a patient care setting. A methodological study to establish content and construct validity was conducted (Menard, 2013). Content validity analysis (CVA) was completed using a panel of five experts including; a staff nurse, three nurse researchers with experience in work environments, and one nurse educator. Content validity indices (CVI) were calculated for each item and qualitative comments were considered. Additionally, construct validity was examined by conducting two focus groups with practicing staff nurses from two different institutions. A structured interview guide was used to gain an understanding of how the staff nurses would define the concept of collegiality and how it applies to current nursing practice.

Item specific CVA resulted in indices ranging from .6 to 1. Total scale relevance resulted in a CVI of 1. As a result of the CVIs and qualitative data, two items were deleted. Two additional items were created and the wording of eleven items was revised. Focus group data were transcribed and analyzed for themes. Each theme clearly matched one of the eight components of the SCC demonstrating construct validity of the instrument. The revised SCC remains a 40 item survey with five items measuring each of the eight components.

Content and construct validity of the SCC have now been supported through minor revisions to the instrument. The revised instrument contains the same eight
components as the original SCC and include: confidence and trust, teamwork, open communication, mutual help, mutual support, creativity, freedom from threat, and friendliness and enjoyment.

**Scoring.** The SCC was scored by calculating an overall SCC mean. Additionally, means for all eight component subscales were calculated and used in analysis. Total potential scores can range from 40 to 200. The higher the score on this instrument the higher the level of collegiality in the nurses work environment.

**The Practice Environment Scale of the Nursing Work Index**

**Description of the instrument.** The Practice Environment Scale (PES) was derived from the Nursing Work Index (NWI) by Lake (2002). The NWI was developed during the nursing shortage of the 1980s with a goal of measuring hospital characteristics which aided in attracting and retaining nurses (Kramer & Hafner, 1989; McClure, Poulion, Sovie, & Wandelt, 1983). Lake (2002) explains that the development of the PES was necessary for two reasons: (1) the substantive factors of the NWI were not identified empirically and no reference values were available; and, (2) the NWI was 65 items in length, which is burdensome for respondents. Thus, the PES was created based on the previous psychometric analyses of the NWI and is described as a succinct, psychometrically sound instrument containing empirically derived subscales. Lake (2002) also created reference values which allow hospitals to understand how well they were doing and what areas are in need of improvement.

Additionally, the PES has been cited to have been used in a multitude of practice settings both in the United States and internationally (Warshawsky & Havens, 2010) and has been recommended as a psychometrically sound tool to study the practice
environment (Bonneterre, Liaudy, Chatellier, Lang, & Gaudemaris, 2008; Lake, 2007). The five factor PES is currently used by 50 percent of hospitals in the United States to collect data regarding the practice environment and is recommended for use by the National Database of Nursing Quality Indicators research team (E. Cramer, personal communication, April 28, 2014). The factors that make up the PES also correlate well with Likert’s Model. Specifically, Likert’s model involves managerial leadership, organizational climate, and group processes which are all measured through the PES.

The 31-item instrument consists of five subscales with three to 10 items each. These subscales were identified as: Nurse Participation in Hospital Affairs (nine items), Nursing Foundations of Quality of Care (10 items), Nurse Manager Ability, Leadership, Support (five items), Staffing and Resource Adequacy (four items) and Collegial Nurse-Physician Relations (three items). Participants indicate to what extent each item is present in their current job by responding on a four point likert scale. Responses include (1) strongly disagree, (2) disagree, (3) agree, or (4) strongly agree.

**Reliability.** Reliability testing was completed using a Cronbach’s alpha for the overall scale and was reported as 0.82. Subscale Cronbach’s alpha scores ranged from 0.71 to 0.84. Intraclass correlation coefficients (ICC) ranged from 0.64 to 0.91 (Lake, 2002). This exceeds the minimum criteria for an ICC of at least 0.60 (Chinn, 1991). Further reliability testing has been completed by other researchers with excellent results. For example, total scale Cronbach’s alpha was reported as 0.93 by Manojlovich and Laschinger (2007). The PES-NWI has been used widely over the last decade. The scale has been widely used in studies across a variety of different settings and with nurses both on a national and international level (Warshawsky & Havens, 2010).
In this study, the total PES Cronbach’s alpha was .95 (N=525). Subscale reliabilities were: Nurse Participation in Hospital Affairs (.89), Nursing Foundations of Quality of Care (.83), Nurse Manager Ability, Leadership, and Support of Nurses (.88), Staffing and Resource Adequacy (.86), and Collegial Nurse-Physician Relations (.87).

Validity. Items of the PES were chosen after review of the NWI by a team of researchers. This team chose items from the NWI that were determined to evaluate some portion of the practice environment. The nursing practice environment is “the organizational characteristics of a work setting that facilitate or constrain professional nursing practice” (Lake, 2002, p. 178). Following the item selection process further psychometric evaluation included exploratory factor analysis, and confirmatory factor analysis with a second data set. Confirmatory factor analysis completed by Gajewski, Boyle, Miller, Oberhelman, and Dunton (2010) provides further evidence that the factor structure is valid. Magnet facilities have been identified as having superior nursing practice environments; thus, the survey achieved construct validity when participants from magnet facilities rated their practice environments higher than those working in non-magnet facilities (Lake, 2002). Lake’s (2002) findings for nurses working in magnet and non-magnet facilities are compared with the findings in the current study in Table 4. It is unknown what portion of nurses in this study were employed in magnet facilities.

Scoring. The overall potential range of scores is from 31 to 124, however, this overall total scoring was not used in any analysis for this study. The higher the score the more favorable the nurse has rated his or her practice environment.
**MISSCARE Survey**

**Description of the Instrument.** The **MISSCARE** Survey (Kalisch & Williams, 2009) was used as an outcome measure of nursing effectiveness and productivity.

Table 4

*Comparison of Current Study’s PES Scores with Lake (2002) Magnet Hospital and Non-Magnet Hospital PES Scores*

<table>
<thead>
<tr>
<th></th>
<th>Lake (2002): Magnet Hospital scores used as reference values</th>
<th>Lake (2002): Non-Magnet Hospital results</th>
<th>Current Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Participation in Hospital Affairs</td>
<td>2.76</td>
<td>2.44</td>
<td>2.53</td>
</tr>
<tr>
<td>Nursing Foundations of Quality Care</td>
<td>3.09</td>
<td>2.83</td>
<td>2.82</td>
</tr>
<tr>
<td>Nurse Manager Ability, Leadership, and Support</td>
<td>3.00</td>
<td>2.68</td>
<td>2.59</td>
</tr>
<tr>
<td>Staffing and Resource Adequacy</td>
<td>2.88</td>
<td>2.49</td>
<td>2.47</td>
</tr>
<tr>
<td>Collegial Nurse-Physician Relations</td>
<td>2.99</td>
<td>2.82</td>
<td>2.89</td>
</tr>
<tr>
<td>Overall Mean PES</td>
<td>2.95</td>
<td>2.65</td>
<td>2.66</td>
</tr>
</tbody>
</table>

Results of a qualitative study indicated that on a regular basis nurses did not complete portions of nursing care assigned to them (Kalisch, 2006). Based on these findings a quantitative instrument was developed and is now used to measure both the nursing care which is missed (part A) and the reasons for missing nursing care (part B) (Kalisch & Williams, 2009). The **MISSCARE** is a self-administered survey consisting of 24 items in section A (missed nursing care) and 17 items in section B (reasons for missed nursing care). Part A of the instrument lists various nursing care tasks which are often missed and allows the following responses; (1) always missed, (2) frequently missed, (3) occasionally missed, (4) rarely missed, and (5) never missed.
Part B addresses the reasons nurses might miss nursing care. The reasons for missed nursing care were not of interest in this study. Additionally, psychometric analyses of this section of the survey have resulted in less than favorable results. Internal consistency measurements for Part B of the MISSCARE survey were reported according to the three subscales; communication, material resources, and labor resources. Cronbach’s alpha for the three subscales were .86, .71, and .64 respectively (Kalisch & Williams, 2009). Internal consistency of the labor resources subscale falls slightly below the benchmark of .70 (DeVellis, 2003). Further analysis reported the Cronbach alpha for this subscale at .69 (Kalisch, Terzioglu, & Duygulu, 2012). Yet another study eliminated items from this subscale due to results of factor analysis and internal consistency (Castner, 2012). Due to the lack of relevance to this study and the less than ideal psychometrics of Part B, it was not be used in this study.

**Reliability.** Psychometric analysis of this instrument was completed by Kalisch (2009). Test-retest reliability ($N=34$) yielded a Pearson correlation coefficient of .87 for part A of the survey (Kalisch & Williams, 2009). Measures of internal consistency were not previously reported for the MISSCARE survey. In this study, the Cronbach’s alpha for the total MISSCARE survey was .94 ($N=502$).

**Validity.** Validity was also established by Kalisch (2009). Content validity analysis by 19 experts resulted in a content validity index of 0.89 which is above the benchmark of 0.8 set by Waltz, Strickland, and Lenz (2010). Factor analysis was completed on Part A of the survey with differing results in the two studies reported in Kalisch (2009). Kalisch believed the series of nursing actions addressed in Part A often
had no relationship to one another, thus she decided that further factor analysis was not relevant to the validity of this survey.

**Scoring.** Section A of the *MISSCARE* survey addresses the frequency of missed nursing care. The response to all 24 items are added to create a total *MISSCARE* score. The higher the score on this section, the less often nursing care was missed. Potential scores range from 24 to 120.

**Data Analysis**

Prior to data analysis, data from Qualtrics were exported to Statistical Package for the Social Sciences version 21 (SPSS) on a password secured computer. A codebook was developed to identify each variable, its definition, and its level of measurement. Frequencies and minimum and maximum values were obtained for all variables to look for outliers and errors. Continuous variables were transformed into categorical variables for data analysis when appropriate. This was done using the visual binning function on SPSS (Pallant, 2010). This function categorizes the data into a number of groups set by the investigator and in doing so determines the appropriate cutoffs to create comparable group sizes. The significance level used for analysis was set at $p < 0.05$.

This non-experimental, descriptive correlational study employed descriptive and inferential statistical analyses to seek answers to research questions presented. SPSS was used for statistical analysis and continues to be used for data storage.

**Data Cleaning and Coding**

Data cleaning involved several steps. The process began with 779 cases. The first step was to eliminate cases that did not meet the inclusion criteria. Nurses who described themselves as working in areas outside of acute care and/or where direct
patient care was not routinely provided were deleted. Examples of these included nurses who worked in outpatient dialysis, extended care and physician’s offices. This resulted in the removal of 22 cases with 757 cases remaining. Next, cases where nurses reported working less than 20 hours per week were removed. This resulted in the removal of 9 cases with 748 cases remaining. The variable, age, was entered by participants as free text. This number was revised to include only numeric characters and rounded to a whole year (0.5 and higher were rounded up). The same process was used for the variables years working as an RN, years employed in current unit of employment, and number of hours worked per week. In the free text of the years working as an RN variable, one nurse identified him or herself as retired and two identified themselves as licensed practical nurses. These three cases were deleted with a remaining 745 cases. When reviewing the variable, years employed as an RN, three cases were deleted. These cases included one who identified him or herself as a nurse practitioner, one stated they were a nurse anesthetist and another stated they were retired. This resulted in 742 remaining cases. If a potential participant followed the link to the survey, but never started the survey, the case was present in the data set. Cases where no data were present were deleted resulting in 649 cases remaining. Refer to Figure 4 for a flowchart providing information on data cleaning and dealing with missing data.

**Missing Data**

Data were screened for inaccurate data, outliers and missing data (Mertler & Vannatta, 2010). Data were examined to determine if information missing occurred randomly or if some pattern was present. Through examining frequencies of all items on the survey it appeared as though missing data occurred when participants simply stopped
answering questions and left the end of the survey unfinished. Collegiality was the primary variable in this study and was measured through the Survey of Collegial Communication (SCC). The SCC involved the first 40 items of the 104 item survey. The SCC data were needed for almost all statistical analyses. Therefore, cases with missing data on the SCC were removed. This resulted in a sample of 557 participants. The SCC was the first instrument of the survey, thus cases existed where the SCC was complete,

Figure 4

Data Cleaning and Missing Data

| 779 | Number of individuals who followed the link to begin the study instrument |
| 757 | Cases remaining after eliminating nurses who stated they worked in areas outside of acute care or where direct care is not routinely provided |
| 748 | Cases remaining after removing cases where nurses stated they worked less than 20 hours per week |
| 745 | Cases remaining after deleting cases where one nurse stated being retired and two stated they were licensed practical nurses |
| 742 | Cases remaining after deleting cases where one nurse stated being a nurse anesthetist and another stated currently retired |
| 649 | Cases remaining after removal of cases where no data were present |
| 557 | Cases remaining after removal of all cases where the SCC was incomplete |

but other data were missing. The number of participants who provided completed answers to each section of the survey are presented in Table 5.

Further analysis of the missing data using Little’s Chi-Square test to determine if data were Missing Completely At Random (MCAR) was conducted. Little’s Chi-Square
was 667.5 (p = 1). Since missing data were MCAR, Expectation-Maximization (EM) method of imputing missing values was used (Tabachnick & Fidell, 2013). This resulted in a complete dataset with a sample size of 557. Data were imputed for all continuous variables study variables with the exception of workplace and personal characteristics.

Table 5

*Number of Completed Surveys prior to Imputation in Order of Administration*

<table>
<thead>
<tr>
<th>Survey</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey of Collegial Communication</td>
<td>557</td>
</tr>
<tr>
<td>Practice Environment Scale</td>
<td>525</td>
</tr>
<tr>
<td><em>MISSCARE</em> Survey</td>
<td>502</td>
</tr>
<tr>
<td>Personal and Workplace Characteristics Questionnaire</td>
<td>425</td>
</tr>
</tbody>
</table>

**Descriptive Data Analysis**

Descriptive statistics were used to describe characteristics of the participant sample. Descriptive data analyses included obtaining frequency distributions and measures of central tendency for all study variables (Mertler & Vannatta, 2010). Data were assessed for normality assumptions based on the statistical techniques being utilized in this study. These assumptions included: normal distribution (lack of skewness), collinearity, and homoscedasticity (Field, 2009). Data were not found to violate any assumptions of the statistical procedures planned.

**Research Question #1:** *What are the perceptions of hospital nurses regarding collegiality in their environment?* To gain answers to this question the mean scores for the overall SCC and each subscale of the SCC were calculated and analyzed.
Inferential Data Analysis

Research Question #2: What differences exist among nurse’s perceptions of collegiality and personal and workplace characteristics? This question was addressed using a one way analysis of variance (ANOVA) (Mertler & Vannatta, 2010). The variables identified as personal characteristics included age, years of nursing experience, educational preparation and gender. The workplace characteristics included years at current place of employment, hours worked per week, model of care delivery, educational preparation, and shift.

In order to conduct statistical analyses using analysis of variance, continuous variables (age, years of nursing experience, years at current place of employment and number of hours worked per week) were transformed into categories in preparation for analysis. Transformation of these variables was done using SPSS’s visual binning function to create the number of groups dictated by the researcher and ensure that the groups are fairly similar in size (Pallant, 2010). Age was divided into three groups: less than or equal to 35 (young) \((n=184)\), 36 to 49 (middle age) \((n=168)\), and 50 and above (older) \((n=163)\). Years of nursing experience was divided into three groups: less than or equal to seven \((n=190)\), eight to 19 \((n=163)\), and 20 or greater \((n=171)\). Years at current place of employment was divided into two groups: less than or equal to six \((n=273)\) and seven or greater \((n=249)\). Number of hours worked per week was divided into two groups; less than or equal to 36 \((n=310)\) and 37 or more \((n=204)\).

Research Question #3: What relationships exist among nurses’ perceptions of collegiality and nurses’ perceptions of the practice environment? This question was addressed by computing several Pearson Product correlation coefficients (Shadish, Cook,
The data were normally distributed, lacked outliers, and demonstrated a linear relationship.

**Research Questions #4: What working environment factors are the best predictors of missed nursing care?** This question was analyzed using hierarchical regression to gain an understanding of influence of the predictor variables on missed nursing care. Regression analysis utilized six predictor variables consisting of the five factors of the practice environment and collegiality. The regression equation was:

- \( \text{MISSCARE} = b_0 + b_1(\text{SCC}) + b_2(\text{Nurse Participation in Hospital Affairs}) + b_3(\text{Nursing Foundations of Quality of Care}) + b_4(\text{Nurse Manager Ability, Leadership, and Support}) + b_5(\text{Staffing and Resource Adequacy}) + b_6(\text{Collegial Nurse-Physician Relations}) \)

The hierarchical method was used to perform this multiple regression analysis. Assumptions of multiple regression were not violated within the data set. These assumptions include normality, linearity, multicollinearity and homoscedasticity. The sample size surpassed the necessary 240 participants suggested by Tabachnich and Fidell (2013) when using six predictor variables in a regression analysis. Additionally, the a priori power analysis reported earlier in this paper resulted in the need for a sample of 278 participants. Multicollinearity was not an issue as demonstrated by tolerance levels that were all greater than 0.1 (Pallant, 2010). Additionally, the variance inflation factor (VIF) results were all less than 10 further validating that multicollinearity does not exist within this data set (Pallant, 2010). The normal probability plot of the regression standardized residual resulted in a diagonal straight line from the bottom left to the top right indicating no deviations from normality were present. The scatterplot of
standardized residuals was roughly rectangularly distributed with most scores concentrated in the center (Pallant, 2010).

**Research Question #5: How does collegiality mediate the effect of the nursing practice environment on missed nursing care?** This research question involved four hypotheses: (1) the nursing practice environment has a direct effect on collegiality, (2) collegiality has a direct effect on missed nursing care, (3) the nursing practice environment has a direct effect on missed nursing care, and (4) collegiality mediates the effect of the nursing practice environment on missed nursing care.

This final research question involved conducting a path analysis (Mertler & Vanatta, 2010; Plichta & Kelvin 2013) to analyze the relationships among collegiality, the nursing practice environment, and missed nursing care (Figure 4). This model was created based on the theoretical framework of this study, Likert’s Ideal Model of Highly Effective Workgroups (Likert, 1961) and existing literature surrounding concepts closely related to the concepts in this study. Collegiality was depicted as a mediator to the relationship between the nursing practice environment (Lake, 2002) and missed nursing care (Kalisch, Landstrom, & Hindshaw, 2009). In this model, collegiality and the practice environment served as exogenous (or predictor) variables. Missed nursing care served as an endogenous (or dependent) variable. The practice environment had both a direct and indirect effect on missed nursing care in this model. The indirect effect the practice environment had on missed nursing care is mediated by collegiality. The path analysis was completed by running a series of regression analyses to determine relationships among the variables within the model. Path coefficients were determined
by calculating the standardized beta coefficients for the regression analysis shown in each path of the model (Figure 5).

Figure 5

*Path Diagram being analyzed in this study*

Note: The path diagram as a whole addresses collegiality as a mediator to the effect the nursing practice environment has on missed nursing care. $P_{c,p} =$ collegiality regressed on the nursing practice environment; $P_{m,c} =$ missed nursing care regressed on collegiality; $P_{m,p} =$ missed nursing care regressed on the nursing practice environment.

**Research Design Threats**

The use of a convenience sample limits the generalizability of the findings (Field, 2009). It was impossible to calculate a response rate since it is unknown how many nurses the survey link may have reached. The newly revised SCC was used for the first time in this study. Controlling for organizational characteristics that influence nurse perceptions of the work environment was not be feasible, however, the large sample of nurses from a variety of organizations contributes to minimizing any potential effects of organizational characteristics.
Chapter Summary

The goal of this non-experimental, descriptive, correlational study was to fill gaps currently existing in available literature. This chapter provided an overview of the sample, procedures for data collection, and instrumentation employed in this study. Also provided are a review of data analysis techniques used in this study, the steps involved in data cleaning and handling of missing data. Finally, this chapter included the identified research design threats in this study.
Chapter Four

Results

The purpose of this study was to describe collegiality among registered nurses working at the bedside in the hospital environment. Specifically, this study aimed to gain an understanding of: (1) the perceptions of hospital nurses regarding the presence of collegiality in their environment; (2) whether differences exist among nurse’s perceptions of collegiality and personal characteristics (age, years nursing experience, educational preparation, and gender) or workplace characteristics (years at current place of employment, hours worked per week, model of care delivery, and shift); 3) the relationships among nurses’ perceptions of collegiality and the nursing practice environment; (4) the influence of working environment factors on missed nursing care; and (5) collegiality’s influence as a mediator to the effect of the nursing practice environment on missed nursing care. The results of this descriptive, correlational study are presented in this chapter. Sample characteristics are presented first, followed by discussion of research questions.

Sample Characteristics

The sample was limited to registered nurses currently employed at the bedside in the hospital setting for 20 or more hours per week. Data describing the continuous variables describing the sample in this study are presented in Table 6. Descriptive data on behalf of the categorical variables of the personal and workplace characteristics survey can be found in Table 7. The typical participant in this study was a 42 year old female working an average of 37 hours per week with 15 years of RN experience, nine of those years in the current place of employment.
Table 6

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

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of RN experience</td>
<td>524</td>
<td>14.52</td>
<td>11.58</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Years on unit of employment</td>
<td>522</td>
<td>8.77</td>
<td>8.83</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td>515</td>
<td>42.21</td>
<td>11.47</td>
<td>42</td>
<td>34</td>
</tr>
<tr>
<td>Hours worked per week</td>
<td>514</td>
<td>37.01</td>
<td>8.14</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>

*Note: n values vary due to missing data*

Table 7

*Number and Percent for Categorical Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>%</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model of Care Delivery (n=523)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Nursing</td>
<td>129</td>
<td>19.9</td>
<td>24.7</td>
</tr>
<tr>
<td>Total Patient Care</td>
<td>362</td>
<td>55.8</td>
<td>69.2</td>
</tr>
<tr>
<td>Other</td>
<td>32</td>
<td>4.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Hospital Unit of Work (n=523)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult ICU</td>
<td>239</td>
<td>36.8</td>
<td>45.7</td>
</tr>
<tr>
<td>ER</td>
<td>44</td>
<td>6.8</td>
<td>8.4</td>
</tr>
<tr>
<td>Medical</td>
<td>55</td>
<td>8.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Surgical</td>
<td>20</td>
<td>3.1</td>
<td>3.8</td>
</tr>
<tr>
<td>OR</td>
<td>10</td>
<td>1.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>10</td>
<td>1.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Neonatal or Peds ICU</td>
<td>33</td>
<td>5.1</td>
<td>6.3</td>
</tr>
<tr>
<td>Other</td>
<td>112</td>
<td>17.3</td>
<td>21.4</td>
</tr>
<tr>
<td>Highest Level of Nursing Education (n=521)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADN</td>
<td>139</td>
<td>21.4</td>
<td>26.7</td>
</tr>
<tr>
<td>BSN</td>
<td>282</td>
<td>43.5</td>
<td>54.1</td>
</tr>
<tr>
<td>MSN</td>
<td>87</td>
<td>13.4</td>
<td>16.7</td>
</tr>
<tr>
<td>DNP</td>
<td>8</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>PhD</td>
<td>5</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Gender (n=524)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>49</td>
<td>7.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Female</td>
<td>475</td>
<td>73.2</td>
<td>90.6</td>
</tr>
<tr>
<td>Shift (n=520)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days</td>
<td>295</td>
<td>45.5</td>
<td>56.7</td>
</tr>
<tr>
<td>Evenings</td>
<td>37</td>
<td>5.7</td>
<td>7.1</td>
</tr>
<tr>
<td>Nights</td>
<td>163</td>
<td>25.1</td>
<td>31.3</td>
</tr>
<tr>
<td>Rotating</td>
<td>25</td>
<td>3.9</td>
<td>4.8</td>
</tr>
</tbody>
</table>

To gather data regarding the nursing practice environment, the PES was used.

This survey contains five factors: nurse participation in hospital affairs, nursing
foundations of quality of care, nurse manager ability, leadership and support, staffing and resource adequacy, and collegial nurse-physician relations. Item level means were calculated. Subscale scores were calculated as a mean of all item means within the subscale. This allowed for comparison among subscales since varying numbers of items are present in each of the subscales. An overall PES-NWI composite score was calculated by computing a mean of the five subscale scores. This allowed for equal weight to be provided to each subscale. Descriptive findings for the PES can be found in Table 8.

Table 8

*Descriptive Statistics and the Practice Environment Scale*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>$n$</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Participation in Hospital Affairs</td>
<td>557</td>
<td>2.53</td>
<td>2.56</td>
<td>2.67</td>
<td>0.6</td>
</tr>
<tr>
<td>Nursing Foundations of Quality Care</td>
<td>557</td>
<td>2.82</td>
<td>2.80</td>
<td>3.00</td>
<td>0.48</td>
</tr>
<tr>
<td>Nurse Manager Ability, Leadership, Support</td>
<td>557</td>
<td>2.59</td>
<td>2.60</td>
<td>3.00</td>
<td>0.73</td>
</tr>
<tr>
<td>Staffing and Resource Adequacy</td>
<td>557</td>
<td>2.47</td>
<td>2.50</td>
<td>3.00</td>
<td>0.69</td>
</tr>
<tr>
<td>Collegial Nurse-Physician Relations</td>
<td>557</td>
<td>2.89</td>
<td>3.00</td>
<td>3.00</td>
<td>0.66</td>
</tr>
<tr>
<td>Mean of PES</td>
<td>557</td>
<td>2.66</td>
<td>2.69</td>
<td>2.04</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Part A of the MISSCARE survey was used to gather data regarding missed nursing care. This survey contains 25 items addressing portions of nursing care that are
commonly delivered during a shift for an acute care patient. Frequencies for each nursing action missed were calculated to determine which actions are missed most frequently and whether any particular pattern of missed nursing care was present. Also, because previous literature indicated that patterns often occur in the missing data for this survey, frequencies were examined to determine if any pattern existed within this study. Patterns of missing data did not exist. The descriptive statistics for the MISSCARE survey can be found in Table 9. In this study, patient assessments were the least missed portion of nursing care and ambulation was missed most often.

**Research Questions**

**Research Question #1:**

*What are the perceptions of hospital nurses regarding collegiality in their work environment?* Collegiality was rated on a 5-point Likert scale using the 40-item Survey of Collegial Communication. Higher scores on this survey indicate higher levels of collegiality among nurses. This scale includes eight components. Mean scores on these components ranged from 2.79 to 3.49 with an overall mean of 3.20 (Table 10). The component of collegiality receiving the highest rating was teamwork \(^\text{M} = 3.49, \text{SD} = .71\). The component receiving the lowest rating was freedom from threat \(^\text{M} = 2.79, \text{SD} = .71\). Although potentially scores could have reached 200, the total scores on the SCC ranged from 40-196 with a mean of 128.

**Research Question #2:**

*What differences exist among nurses’ perceptions of collegiality based on personal and workplace characteristics?* This question was addressed by performing two separate one way analyses of variance (ANOVA) (Mertler & Vannatta, 2010) in
<table>
<thead>
<tr>
<th>Description</th>
<th>n</th>
<th>M</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulation three times per day or as ordered</td>
<td>557</td>
<td>2.80</td>
<td>3</td>
<td>3</td>
<td>.95</td>
</tr>
<tr>
<td>Turning patient every 2 hours</td>
<td>557</td>
<td>3.19</td>
<td>3</td>
<td>3</td>
<td>.91</td>
</tr>
<tr>
<td>Feeding patient when the food is still warm</td>
<td>557</td>
<td>3.18</td>
<td>3</td>
<td>3</td>
<td>.89</td>
</tr>
<tr>
<td>Setting up meals for patient who feeds themselves</td>
<td>557</td>
<td>3.74</td>
<td>4</td>
<td>4</td>
<td>.92</td>
</tr>
<tr>
<td>Medications administered within 30 minutes before or after scheduled time</td>
<td>557</td>
<td>3.19</td>
<td>3</td>
<td>3</td>
<td>.81</td>
</tr>
<tr>
<td>Vital signs assessed as ordered</td>
<td>557</td>
<td>3.89</td>
<td>4</td>
<td>4</td>
<td>.82</td>
</tr>
<tr>
<td>Monitoring intake/output</td>
<td>557</td>
<td>3.64</td>
<td>4</td>
<td>4</td>
<td>.94</td>
</tr>
<tr>
<td>Full documentation of all necessary data</td>
<td>557</td>
<td>3.30</td>
<td>3</td>
<td>4</td>
<td>.87</td>
</tr>
<tr>
<td>Patient teaching about illness, tests, and diagnostic studies</td>
<td>557</td>
<td>3.19</td>
<td>3</td>
<td>3</td>
<td>.88</td>
</tr>
<tr>
<td>Emotional support to patient and/or family</td>
<td>557</td>
<td>3.51</td>
<td>4</td>
<td>4</td>
<td>.89</td>
</tr>
<tr>
<td>Patient bathing/skin care</td>
<td>557</td>
<td>3.52</td>
<td>4</td>
<td>4</td>
<td>.83</td>
</tr>
<tr>
<td>Mouth care</td>
<td>557</td>
<td>3.20</td>
<td>3</td>
<td>4</td>
<td>.91</td>
</tr>
<tr>
<td>Hand washing</td>
<td>557</td>
<td>3.80</td>
<td>4</td>
<td>4</td>
<td>.82</td>
</tr>
<tr>
<td>Patient discharge planning and teaching</td>
<td>557</td>
<td>3.83</td>
<td>4</td>
<td>4</td>
<td>.94</td>
</tr>
<tr>
<td>Bedside glucose monitoring as ordered</td>
<td>557</td>
<td>4.09</td>
<td>4</td>
<td>4</td>
<td>.68</td>
</tr>
<tr>
<td>Patient assessments performed each shift</td>
<td>557</td>
<td>4.35</td>
<td>4</td>
<td>5</td>
<td>.74</td>
</tr>
<tr>
<td>Focused reassessments according to patient condition</td>
<td>557</td>
<td>3.94</td>
<td>4</td>
<td>4</td>
<td>.82</td>
</tr>
<tr>
<td>IV/central line site care and assessments according to hospital policy</td>
<td>557</td>
<td>3.84</td>
<td>4</td>
<td>4</td>
<td>.79</td>
</tr>
<tr>
<td>Response to call light is initiated within 5 minutes</td>
<td>557</td>
<td>3.58</td>
<td>4</td>
<td>4</td>
<td>.99</td>
</tr>
<tr>
<td>PRN medication requests acted on within 15 minutes</td>
<td>557</td>
<td>3.53</td>
<td>4</td>
<td>4</td>
<td>.85</td>
</tr>
<tr>
<td>Assess effectiveness of medications</td>
<td>557</td>
<td>3.34</td>
<td>3</td>
<td>4</td>
<td>.84</td>
</tr>
<tr>
<td>Attend interdisciplinary care conferences whenever held</td>
<td>557</td>
<td>2.99</td>
<td>3</td>
<td>2</td>
<td>1.05</td>
</tr>
<tr>
<td>Assist with toileting needs within 5 minutes of request</td>
<td>557</td>
<td>3.49</td>
<td>3.85</td>
<td>4</td>
<td>.85</td>
</tr>
<tr>
<td>Skin/Wound care</td>
<td>557</td>
<td>3.68</td>
<td>4</td>
<td>4</td>
<td>.74</td>
</tr>
</tbody>
</table>
order to determine if differences existed in the nurses’ perceptions of collegiality among groups (years nursing experience, years at current place of employment, hours worked per week, current place of employment, model of care delivery, educational preparation, shift, age and gender). The variables identified as personal characteristics were age, years of nursing experience, educational preparation and gender. The workplace characteristics were unit of employment, years at current place of employment, hours worked per week, model of care delivery, educational preparation, and shift. Continuous variables were transformed into categorical variables for these analyses. No statistically significant differences were found.

Table 10

*Descriptive Statistics and the Survey of Collegial Communication*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>Median</th>
<th>Mode</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence/Trust</td>
<td>557</td>
<td>3.24</td>
<td>3.4</td>
<td>3.0</td>
<td>.68</td>
</tr>
<tr>
<td>Teamwork</td>
<td>557</td>
<td>3.49</td>
<td>3.6</td>
<td>4.0</td>
<td>.71</td>
</tr>
<tr>
<td>Open Communication</td>
<td>557</td>
<td>3.2</td>
<td>3.2</td>
<td>3.2</td>
<td>.67</td>
</tr>
<tr>
<td>Mutual Help</td>
<td>557</td>
<td>3.49</td>
<td>3.6</td>
<td>3.6</td>
<td>.68</td>
</tr>
<tr>
<td>Mutual Support</td>
<td>557</td>
<td>3.13</td>
<td>3.2</td>
<td>3.4</td>
<td>.79</td>
</tr>
<tr>
<td>Creativity</td>
<td>557</td>
<td>2.95</td>
<td>3.0</td>
<td>3.0</td>
<td>.71</td>
</tr>
<tr>
<td>Freedom from Threat</td>
<td>557</td>
<td>2.79</td>
<td>2.8</td>
<td>3.0</td>
<td>.71</td>
</tr>
<tr>
<td>Friendliness/Enjoyment</td>
<td>557</td>
<td>3.34</td>
<td>3.4</td>
<td>3.8</td>
<td>.73</td>
</tr>
<tr>
<td>Survey of Collegial</td>
<td>557</td>
<td>128.08</td>
<td>131</td>
<td>119</td>
<td>25.51</td>
</tr>
<tr>
<td>Communication total score</td>
<td>557</td>
<td>3.20</td>
<td>3.28</td>
<td>2.98</td>
<td>.64</td>
</tr>
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<td>Survey of Collegial</td>
<td>557</td>
<td>3.20</td>
<td>3.28</td>
<td>2.98</td>
<td>.64</td>
</tr>
<tr>
<td>Communication mean</td>
<td>557</td>
<td>3.20</td>
<td>3.28</td>
<td>2.98</td>
<td>.64</td>
</tr>
</tbody>
</table>
Research Question #3:

What relationships exist between nurses’ perceptions of collegiality and nurses’ perceptions of the practice environment? The relationship between collegiality (as measured by the Survey of Collegial Communication) and the nursing practice environment (as measured by the Practice Environment Scale) was analyzed using Pearson Product-Moment correlation coefficients. There was a strong, positive correlation between the mean level of collegiality (as measured by the SCC) and the mean score on the PES ($r = .59, n = 557, p < .01$). Nurses who reported higher levels of collegiality also reported more favorable practice environments. Additionally, correlations among the eight components of collegiality and the five factors of the practice environment were analyzed for relationships. Results of these analyses can be found in Table 11. As with the overall correlations of the SCC and PES, all components of the SCC were significant and positively correlated with one another.

Research Question #4:

What working environment factors are the best predictors of missed nursing care? Hierarchical regression was used to assess the influence of the five factors of the nursing practice environment and collegiality on missed nursing care. The aim of this research question was to gain an understanding of the influence the practice environment exudes on missed nursing care.

The five factors of the PES were entered into the regression model one by one in the following order: Nurse Participation in Hospital Affairs (PES1), Nurse Manager Ability, Leadership, and Support (PES3), Nursing Foundations of Quality of Care (PES2), Staffing and Resource Adequacy (PES4), and Collegial Nurse-Physician
Table 11
Pearson Product-Moment Correlations between subscales of the SCC and the PES

<table>
<thead>
<tr>
<th></th>
<th>Confidence/Trust</th>
<th>Teamwork</th>
<th>Open Communication</th>
<th>Mutual Help</th>
<th>Mutual Support</th>
<th>Creativity</th>
<th>Freedom From Threat</th>
<th>Friendliness/Enjoyment</th>
<th>Nurse Participation in Hospital Affairs</th>
<th>Nursing Foundations for Quality of Care</th>
<th>Nurse Manager Ability, Leadership, and Support of Nurses</th>
<th>Staffing and Resource Adequacy</th>
<th>Collegial Nurse-Physician Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence/Trust</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Teamwork</td>
<td>.79</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Communication</td>
<td>.76</td>
<td>.74</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutual Help</td>
<td>.80</td>
<td>.81</td>
<td>.79</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutual Support</td>
<td>.82</td>
<td>.81</td>
<td>.74</td>
<td>.79</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td>.81</td>
<td>.73</td>
<td>.79</td>
<td>.77</td>
<td>.80</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freedom from Threat</td>
<td>.80</td>
<td>.73</td>
<td>.84</td>
<td>.75</td>
<td>.78</td>
<td>.82</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendliness/Enjoyment</td>
<td>.79</td>
<td>.78</td>
<td>.81</td>
<td>.79</td>
<td>.75</td>
<td>.75</td>
<td>.78</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Participation in Hospital Affairs</td>
<td>.44</td>
<td>.42</td>
<td>.43</td>
<td>.44</td>
<td>.41</td>
<td>.45</td>
<td>.43</td>
<td>.44</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Foundations for Quality of Care</td>
<td>.48</td>
<td>.49</td>
<td>.48</td>
<td>.51</td>
<td>.45</td>
<td>.48</td>
<td>.46</td>
<td>.47</td>
<td>.75</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Manager Ability, Leadership, and Support of Nurses</td>
<td>.50</td>
<td>.46</td>
<td>.46</td>
<td>.49</td>
<td>.47</td>
<td>.49</td>
<td>.47</td>
<td>.50</td>
<td>.70</td>
<td>.62</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staffing and Resource Adequacy</td>
<td>.38</td>
<td>.38</td>
<td>.34</td>
<td>.35</td>
<td>.33</td>
<td>.31</td>
<td>.33</td>
<td>.37</td>
<td>.54</td>
<td>.53</td>
<td>.52</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Collegial Nurse-Physician Relations</td>
<td>.43</td>
<td>.41</td>
<td>.45</td>
<td>.43</td>
<td>.37</td>
<td>.37</td>
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<td>.47</td>
<td>.54</td>
<td>.46</td>
<td>.38</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: All values are significant at $p < .001$, $n = 557$, the shaded area represents data associated with research question #3.
Relations (PES5). This order was determined based on how highly correlated the factor was with overall PES mean. The most highly correlated factor was entered first and the least highly correlated factor was entered last. Much discussion in this paper has aimed to justify collegiality as a factor of the practice environment not conceptualized by Lake (2002) and not currently measured by the PES. To gain a beginning understanding of influence collegiality has on missed nursing care the mean overall SCC score was then entered into the regression analysis.

The regression model was found to be significant ($p < .001$) (Table 12). Thirty seven percent of variance in missed nursing care was explained by the full model, $F (1, 550) = 53.24$. Of primary interest, the final model in which collegiality was added to the equation resulted in a significant $F$ change ($p < .001$). Collegiality contributed to approximately 2% of the variance in missed nursing care. In addition, five of the predictor variables made a significant contribution to missed nursing care ($p < .05$):

- Nursing Foundations of Quality Care
- Staffing and Resource Adequacy
- Collegiality
- Nurse Participation in Hospital Affairs
- Nurse-Physician Relations was not found to be a significant predictor of missed nursing care. The resulting regression equation is as follows:

$$
\text{MISSCARE} = 35.936 + 11.396 \text{ (Nursing Foundations of Quality of Care)} + 5.88 \text{ (Staffing and Resource Adequacy)} + 3.42 \text{ (Collegiality)} - 2.524 \text{ (Nurse Participation in Hospital Affairs)} - 2.243 \text{ (Manager Ability, Leadership, and Support)}
$$
Table 12

*Hierarchical Regression of the Practice Environment Factors and Collegiality on Missed Nursing Care*

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>β</th>
<th>R² Change</th>
<th>R²/Adjusted R²</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PES1</td>
<td>8.35</td>
<td>.38</td>
<td>.14</td>
<td>.141/.140</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PES1</td>
<td>6.60</td>
<td>.30</td>
<td>.06</td>
<td>.148/.145</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES3</td>
<td>2.05</td>
<td>.11</td>
<td></td>
<td></td>
<td>.043*</td>
</tr>
<tr>
<td><strong>Model 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES1</td>
<td>-1.11</td>
<td>-.05</td>
<td>.132</td>
<td>.280/.276</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES3</td>
<td>.21</td>
<td>.01</td>
<td></td>
<td></td>
<td>.42</td>
</tr>
<tr>
<td>PES2</td>
<td>15.48</td>
<td>.56</td>
<td></td>
<td></td>
<td>.83</td>
</tr>
<tr>
<td><strong>Model 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES1</td>
<td>-2.48</td>
<td>-.11</td>
<td>.066</td>
<td>.345/.341</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES3</td>
<td>-1.14</td>
<td>-.06</td>
<td></td>
<td></td>
<td>.22</td>
</tr>
<tr>
<td>PES2</td>
<td>13.38</td>
<td>.48</td>
<td></td>
<td></td>
<td>.000**</td>
</tr>
<tr>
<td>PES4</td>
<td>6.17</td>
<td>.32</td>
<td></td>
<td></td>
<td>.000**</td>
</tr>
<tr>
<td><strong>Model 5</strong></td>
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<td></td>
<td></td>
<td></td>
<td><strong>.000</strong></td>
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<tr>
<td>PES1</td>
<td>-2.56</td>
<td>-.12</td>
<td>.005</td>
<td>.351/.345</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES3</td>
<td>-1.39</td>
<td>-.08</td>
<td></td>
<td></td>
<td>.14</td>
</tr>
<tr>
<td>PES2</td>
<td>12.47</td>
<td>.45</td>
<td></td>
<td></td>
<td>.000**</td>
</tr>
<tr>
<td>PES4</td>
<td>6.04</td>
<td>.31</td>
<td></td>
<td></td>
<td>.000**</td>
</tr>
<tr>
<td>PES5</td>
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<td>.09</td>
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<td>.035*</td>
</tr>
<tr>
<td><strong>Model 6</strong></td>
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<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES1</td>
<td>-2.52</td>
<td>-.11</td>
<td>.017</td>
<td>.367/.360</td>
<td><strong>.000</strong></td>
</tr>
<tr>
<td>PES3</td>
<td>-2.24</td>
<td>-.12</td>
<td></td>
<td></td>
<td>.05*</td>
</tr>
<tr>
<td>PES2</td>
<td>11.40</td>
<td>.41</td>
<td></td>
<td></td>
<td>.02*</td>
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<tr>
<td>PES4</td>
<td>5.88</td>
<td>.30</td>
<td></td>
<td></td>
<td>.000**</td>
</tr>
<tr>
<td>PES5</td>
<td>1.18</td>
<td>.06</td>
<td></td>
<td></td>
<td>.000**</td>
</tr>
<tr>
<td>Collegiality</td>
<td>3.42</td>
<td>.16</td>
<td></td>
<td></td>
<td>.000**</td>
</tr>
</tbody>
</table>

*Note: *p < .05; **p < .001, N = 557*
Research Question #5:

How does collegiality mediate the effect of the nursing practice environment on missed nursing care? The hypothesized path is presented in Figure 6. Four hypotheses were tested through this path analysis: (1) nursing practice environment has a direct effect on collegiality; 2) collegiality has a direct effect on missed nursing care; 3) the nursing practice environment has a direct effect on missed nursing care; and 4) collegiality mediates the effect of the nursing practice environment on missed nursing care.

Figure 6

Path Model being Analyzed in this Study with Hypotheses

Note: The path model as a whole represents hypothesis 4

The analyses for this question were conducted in the following manner. First, Pearson’s product-moment correlation coefficients were obtained to determine the strength of the relationship between all three variables in the path diagram: the practice environment, collegiality and missed nursing care. Correlation results can be found in
Table 13. The variables showed a large correlation according to Cohen’s (1988) criteria. Although the resultant correlation can be considered large according to Cohen

Table 13

*Pearson Correlation Coefficient of Variables involved in Path Analysis*

<table>
<thead>
<tr>
<th></th>
<th>Collegiality</th>
<th>The Nursing Practice Environment</th>
<th>Missed Nursing Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collegiality</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Nursing Practice Environment</td>
<td>.59*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Missed Nursing Care</td>
<td>.40*</td>
<td>.51*</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note: *p < .01, N = 557

(1988), Pallant (2010) suggests that variables correlated at 0.7 or less may be used together as predictor variables in a regression analysis without concerns of collinearity.

Simple linear regression analyses were conducted to determine the path coefficients for each path found within the model (Table 14). A regression analysis was conducted using collegiality as a dependent variable and the practice environment as the predictor variable. This resulted in a significant (p < .001) model with a path coefficient (described as a standardized coefficient Beta on the SPSS output) of .59. Inspection of results showed an R² of .35 meaning that the practice environment explains 35% of the variance in the collegiality. A second regression was conducted using collegiality as the predictor variable and missed nursing care as the dependent variable. This resulted in a significant model with a path coefficient of .40. This model yielded an R² value of .16 meaning that collegiality explains 16% of the variance in missed nursing care. A third regression was completed using the practice environment as a predictor variable and missed nursing care as a dependent variable. This also resulted in a significant model
with a path coefficient of .51. This model yielded an $R^2$ value of .26 meaning that collegiality explains 26% of the variance in missed nursing care. All analyses reached significance at the $p < .001$ level. Figure 6 provides the path model with resulting path coefficients.

Table 14

*Linear Regression Analysis of Variables used in Path Analysis*

<table>
<thead>
<tr>
<th></th>
<th>$N$</th>
<th>$r$</th>
<th>$R^2$</th>
<th>$F$ Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice Environment $\rightarrow$ Collegiality</td>
<td>557</td>
<td>.59</td>
<td>.35</td>
<td>303.33*</td>
</tr>
<tr>
<td>Collegiality $\rightarrow$ Missed care</td>
<td>557</td>
<td>.40</td>
<td>.16</td>
<td>108.45*</td>
</tr>
<tr>
<td>Practice environment $\rightarrow$ Missed care</td>
<td>557</td>
<td>.51</td>
<td>.26</td>
<td>194.85*</td>
</tr>
</tbody>
</table>

Note: * $p < .001$

Figure 7

*Path analysis results*

Note: The path diagram as a whole addresses collegiality as a mediator to the effect the nursing practice environment has on missed nursing care. $P_{c,p} =$ collegiality regressed on the nursing practice environment; $P_{m,c} =$ missed nursing care regressed on collegiality; $P_{m,p} =$ missed nursing care regressed on the nursing practice environment.
Next, to determine the mediating effect of collegiality on the practice environment, a hierarchical regression analysis was performed. This final regression analysis examined first, the effect of the practice environment on missed nursing care, followed by the added effect of collegiality to the regression model. Results of this regression analysis can be found in Table 15. Model one of the hierarchical regression is identical to what took place when analyzing hypothesis three discussed previously. Model two aims to explain whether collegiality among nurses serves as a mediator to the practice environment. The addition of collegiality did not result in the practice environment becoming non-significant, however, it did result in a significant $R^2$ change statistic of .02 and a significant $F$ change statistic of 12.13 ($p = .001$). Additionally, the regression coefficient decreased from .51 to .42 when collegiality was entered into the equation. The substantive change in the magnitude of the coefficient provides beginning evidence of collegiality as a mediator of the relationship between the practice environment and missed nursing care (Plitcha & Kelvin, 2013; Von eyse, Mun, & Mair, 2009).

Table 15

*Hypothesis Four of Path Analysis*

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>$\beta$</th>
<th>$R^2$ Change</th>
<th>$R^2$/Adjusted $R^2$</th>
<th>F Change</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice</td>
<td>13.52</td>
<td>.51</td>
<td>.51</td>
<td>.26/.26</td>
<td>194.85*</td>
<td>.000*</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice</td>
<td>11.05</td>
<td>.42</td>
<td></td>
<td></td>
<td></td>
<td>.000*</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collegiality</td>
<td>3.28</td>
<td>.16</td>
<td>.02</td>
<td>.28/.28</td>
<td>12.13*</td>
<td>.001*</td>
</tr>
</tbody>
</table>

*Note: * $p \leq .001$
Chapter Summary

The findings of this study were presented in this chapter. Findings include descriptive information on the characteristics of the participant sample and results specific to each research question posed in this study. Preliminary tests were conducted prior to further data analysis to ensure the data met assumptions of statistical analyses being performed.
Chapter Five

Discussion, conclusions, and recommendations

The purpose of this study was to describe collegiality among registered nurses working at the bedside in the hospital environment. Specifically, this study aimed to gain an understanding of: (1) the perceptions of hospital nurses regarding the presence of collegiality in their environment; 2) whether differences exist among nurse’s perceptions of collegiality and personal characteristics (age, years nursing experience, educational preparation, and gender) or workplace characteristics (years at current place of employment, hours worked per week, model of care delivery, and shift); 3) the relationships among nurses’ perceptions of collegiality and the nursing practice environment; 4) the influence of working environment factors on missed nursing care; and 5) collegiality’s influence as a mediator to the effect of the nursing practice environment on missed nursing care.

Likert’s Ideal Model of Highly Effective Workgroups was used as a framework for this study. This study was conducted using online survey methodology employing a nationwide convenience sample of registered nurses in the United States of America. Data were collected by means of a personal and workplace characteristics questionnaire, the Survey of Collegial Communication, the Practice Environment Survey, and the MISSCARE Survey. An online program, Qualtrics, was used to collect data. Study participants consisted of 557 registered nurses working at least 20 hours a week providing direct patient care in the hospital setting. Discussion of the findings is presented along with conclusions, limitations and implications.
Discussion

This is the first recent study to look at collegiality among nurses, thus, the findings of this study provide a baseline level of collegiality in the hospital setting. In this study, nurses described collegiality as being present to some extent in their workplace. It is apparent that many of nurses rated collegiality very close to the middle of the Likert scale or a rating of three. The rating of three corresponds with a response of ‘to some extent’. It is unclear what this means about the peer relationships among nurses and whether or not this is a satisfactory level of collegiality. It may also be that nurses who were indifferent about their responses to items or tired of completing the lengthy instrument (104 items in length) may have responded with a three. No items on the SCC are reverse scored. Revision of the instrument to include reverse scored items could clarify whether this is truly the state of collegiality or if participants were not truly engaged in the survey and this played a role in these results.

Previous use of the SCC does not give researchers a standard for a satisfactory level of collegiality. The version of the SCC used by Beyer (1979; 1981) asks the respondents to provide three responses to each of the 40 items. The possible responses are: This is how it is now, this is how I’d like it to be, and this is how important it is. Asking for these three responses allowed Beyer to determine the participants’ level of satisfaction with collegiality. Asking for three responses was not reasonable in this study due to the already lengthy survey at 104 items. Participants only provided a response as to what extent each item was present at the current time in the practice environment. In the future, it may benefit this area of nursing science if the survey was administered to
staff nurses including all three responses to each item. This may allow for the creation of benchmark levels of collegiality for use with quality improvement in the hospital setting.

The highest rated components of collegiality were teamwork and mutual help. These components are similar yet have a slightly different focus. The items found within the teamwork component are focused on nurses working together as a team to carry out the duties or tasks associated with nursing care. The items within the mutual help component focus on nurses helping one another in ways other than nursing tasks such as orienting new staff members, sharing knowledge, and coming up with solutions to problems.

The lowest rated component of collegiality was freedom from threat (2.79). Freedom from threat involves groups finding solutions during disagreement rather than creating conflict. It is the presence of a cooperative rather than a competitive relationship (Beyer, 1979; 1981). It is not surprising this area was rated the lowest with the existence of many publications identifying the presence of lateral and horizontal violence, bullying and incivility within the nursing profession (Farrell, 2006; Hutton & Gates, 2008; Johnson, 2009; Lewis & Malecha, 2011).

Lake (2002) used a sample of nurses from magnet hospitals and non-magnet hospitals. Part of the reasoning for this sample was to establish reference values for PES. Comparing these reference values with the findings in this study was done in Table 4. Magnet hospitals are generally thought to have ideal practice environments. Total and subscale means in the current study are slightly lower than the expected results for a magnet hospital, however, the current study results closely align with the non-magnet results from Lake’s work. The sample in this study was a nationwide sample from a
variety of institutions. Participants were not asked to divulge whether they worked in a magnet hospital. Based on these results, one could expect that much of the sample in this study was working in non-magnet facilities. Given reference values have not been established for the collegiality (as measured by the SCC), differentiating levels of collegiality in magnet and non-magnet hospitals may be another avenue for further exploration.

Two variables in this study, nursing practice environment and collegiality, were significantly related ($r = .59$) as were the respective subscales of the PES and SCC. Using Cohen’s (1988) criteria for interpreting the strength of the relationship between the practice environment and collegiality, one could conclude that a moderate relationship exists. This moderate relationship indicates that collegiality and the practice environment are related to one another but not so strongly that they measure the same concept. This finding is consistent with the theoretical framework used in this study. According to Likert’s model (1961), peer behavior is one aspect of a highly effect workgroup as are factors of the practice environment measured by the PES. Peer behavior in this study was termed collegiality and measured with the SCC. Further understanding of the relationships between these variables will be addressed when discussing research question four and the regression analysis.

Initial review of the literature demonstrated differences may exist in peer relationships in different environments. For example, teamwork (a concept closely related to collegiality) was found to be higher among ICU nurses than nurses who worked in other areas of the hospital (Kalisch & Lee, 2010). Additionally, Farrell (2001), who focuses on aggression in the clinical setting, discusses generational differences in peer
relationships. Findings such as these led this investigator to analyze whether differences in levels of collegiality were present among differing groups. Personal and workplace characteristics (age, years as an RN, years on unit of employment, hours worked per week, shift, gender, unit of employment, model of care delivery) were addressed in terms of their relationship to a collegial environment through analysis of variance. No significant relationship between collegiality and any of these characteristics existed. This finding may be due to the fact that collegiality truly is a different concept than other peer relationship concepts that have been studied, thus, may not be as sensitive to personal and workplace characteristics. The fact that no differences existed in the results of this study leaves much to be understood about what environments might foster collegial relationships. Perhaps the personal and workplace characteristic variables were not as specific as they needed to be to be able to detect differences or the selected variables were not the best. In this study, collegiality was described and was also used as a predictor variable for missed nursing care. It may be useful in the future to use collegiality as an outcome variable to better understand what leads to these types of environments.

Forty-six percent of the sample in this study was made up of nurses who worked in the adult ICU setting. This was likely due to the fact that the recruitment strategy changed to involve the American Association of Critical Care Nurses. This limits the generalizability of the findings. However, using critical care nurses as a sample likely served as an advantage in the study as well. All items of the MISSCARE survey may not be relevant to all specialty nursing settings. For example, nurses who work in the emergency room and operating room do not routinely ambulate, toilet, or complete
dressing changes on patients. When nurses from these settings complete the MISSCARE survey they are forced respond to how often they miss these pieces of nursing care even if they are not relevant. Therefore, missing or inaccurate data on the MISSCARE may be found when a sample is made up of nurses who work in settings where not all items are relevant. This did not present as an issue in this study, due in part to the fact that much of the sample was made up of ICU nurses.

Thirty-seven percent of variance in missed nursing care was explained by the combination of five predictor variables (Nursing Foundations of Quality of Care, Staffing and Resource Adequacy, Collegiality, Nurse Manager Ability, Leadership, and Support and Nurse Participation in Hospital Affairs). Collegiality among nurses was a significant contributor to the nursing work environment. Interestingly, collegiality played a more significant role than other factors of the practice environment. This result supports Lake (2007) who stated supportive peer relationships among nurses, which could be reflective of collegiality, should be added to the PES if a more comprehensive picture of the practice environment is truly going to be assessed by this scale. Lake (2007) also recommends the addition of three other key practice environment factors not addressed with the current version of the PES; Autonomy, recognition/advancement of nurse preparation and expertise, and professional development.

Additionally, findings addressing the role of collegiality in conjunction with the practice environment lend support to the framework guiding this study. When components of Likert’s Model of Highly Effective Workgroups (1961) are supportive, organizations are more effective and productive. Components of Likert’s model were measured by means of two instruments, the SCC and the PES, designed to address
collegiality among nurses and the nursing practice environment. The outcomes of a highly effective work group are described by Likert as increased effectiveness and productivity. Effectiveness and productivity were addressed by measuring missed nursing care utilizing the MISSCARE survey. In this study, variables reflective of Likert’s model did explain 37% of the variance in missed nursing care. Lake (2002) describes nurses’ relationships with physicians as one factor of the practice environment. Such a relationship is not evident in Likert’s model. Interestingly, nurse-physician relations is the only predictor variable entered into the regression analysis that did not significantly influence missed nursing care.

Findings provide beginning evidence that collegiality could be an influential factor for determining the amount of missed nursing care. Collegiality is more influential than three factors of the practice environment; nurse manager ability, leadership, and support, nurse-physician collegial relations, and nurse participation in hospital affairs. Nursing foundations of quality of care and staffing and resource adequacy were more influential to determining the amount of missed nursing care than collegiality among nurses. Such findings challenge investigators to be more inclusive when assessing the practice environment, and to consider the role that peer relations could play.

Existing literature focuses on the need to have positive working relationships among physicians and nurses to provide safe quality care (Manojlovich, 2005, 2010; Thistlethwaite, 2012). In this study, nurse-to-nurse collegiality influenced missed nursing care to a greater degree than did nurse-physician collegial relationships. Of note, when reviewing existing literature to support the development of the path model as presented in chapter one, it was possible to connect all factors of the practice
environment with missed nursing care except nurse-physician collegial relations. This provides beginning evidence that nurse-to-nurse working relationships should be considered important in terms of the nurses ability to successfully complete all nursing care, in addition to nurse-physician relationships. Moreover, these findings are consistent with the opinion literature of Campbell-Heider and Pollack (1987) and Nolan (1976). According to these authors, nurses must learn to work effectively within their own discipline before it will be possible for them to work effectively outside of the discipline. If this is true, nursing as a discipline and leaders within the discipline need to put forth time, energy, and resources to create collegial relationships within the discipline so that nursing care can be improved and so that nurses can begin to work more effectively with those outside of the discipline.

Castner (2012) used missed nursing care as an outcome variable and found variables such as RN experience, RN education, RN supplies problems, RN communication problems, unit workload, skill mix and critical care to be a predictors of missed nursing care. The main goal in this study was to develop an understanding of collegiality among staff nurses, thus a large sample of nurses from a variety of settings was sought. Unlike the study of Castner (2012), data in this study were only collected from individual RNs and did not include hospital and unit level data from specific institutions. Collecting data in a more controlled setting might lead to a greater understanding of the variance in missed nursing care.

Existing literature demonstrates multiple variables that play a role in missed nursing care. For example, Kalisch, Gosselin, and Choi (2012) conducted a qualitative study to gain an understanding of the differences in patient care units that had the most
missed nursing care with those with the least missed nursing care. The investigators identified ten themes: staffing levels, communication, collective orientation, backup, monitoring, leadership, long tenure, unit size, trust and accountability. Kalisch and Lee (2010) found teamwork to be a significant predictor of missed nursing care. In addition, Kalisch and Lee (2012) found that magnet hospitals had significantly less missed nursing care than non-magnet hospitals. This study adds to existing literature by demonstrating both the nursing practice environment as a whole and collegiality among nurses are significant predictors of missed nursing care. With this knowledge, future efforts in the nursing discipline may be directed towards gaining a better understanding of collegiality, its impact on patient care, and ways in which the discipline can begin to foster collegiality within the nursing work environment.

Not only are the practice environment and collegiality related as a whole but actually collegiality influences the relationship the practice environment has on missed nursing care. Inspection of the findings revealed that collegiality does partially mediate the effect the nursing practice environment has on missed nursing care, and is an important factor in the nursing practice environment. Based on this finding, it may be prudent for researchers to conceptualize the practice environment of nurses to include six factors: (1) nurse participation in hospital affairs, (2) nursing foundations of quality of care, (3) nurse manager ability, leadership, and support, (4) staffing and resource adequacy, (5) collegial nurse-physician relations, and finally, (6) collegial nurse-nurse relations. In order to address this as a researcher, the PES could be revised to contain a subscale addressing nurse-nurse collegiality. In the meantime, collegiality among nurses could be examined using the SCC.
The mediation effect of collegiality is tentative given the tenuous linkages available in current literature among the variables in this study. The literature used to connect collegiality to both missed nursing care and the practice environment was related literature rather than literature that addressed collegiality as it was defined in this study (Bogaert et al., 2013). Also, it required one to make the assumption that the existence and outcomes of negative peer relationships (incivility, bullying, lateral violence) resulted in the opposite effect of what a collegial environment would generate (Diaski, 2004; Embree & White, 2010; Farrel, 2006; Lewis & Malecha, 2011). Probably the largest assumption, is that those negative peer relationships exist in environments where collegiality does not. Existing literature has not surfaced that aids in the understanding of whether collegiality may exist in environments where negative peer relationships also exist.

**Conclusions**

1. Collegiality exists within nursing work environments to some extent.

2. No significant differences in perceptions of collegiality exist between nurses based on personal or workplace characteristics (years nursing experience, years at current place of employment, current place of employment, model of care delivery, educational preparation, shift, age, and gender).

3. A significant positive relationship exists between collegiality and the nursing practice environment.

4. Five variables were found to be influential factors in determining the amount of missed nursing care: (1) nursing foundations of quality care, (2) staffing and resource adequacy, (3) collegiality, (4) nurse manager ability, leadership, and
support, and (5) nurse participation in hospital affairs, and were also influential factors in determining missed nursing care.

5. Collegiality partially mediates the relationship among the nursing practice environment and missed nursing care.

Limitations

A convenience sample of nurses was utilized in this study. Due to unexpected changes in recruitment a snowball technique resulted and it was impossible to control for who gained access to the survey and also impossible to determine a response rate. This was the first time using the revised version of the SCC in a study. The survey containing a combination of four instruments was lengthy and did not contain any reverse scored items. This may have created response bias and resulted in participants submitting responses without fully engaging in the question presented. Not all items on the MISSCARE survey were relevant to all nursing work environments, this resulted in missing data and serves as a limitation in this study.

Implications

Nursing Practice

Findings from this study provide beginning evidence that there is a role for collegiality in the nursing work environment. Higher levels of collegiality were associated with less missed nursing care and a more positive practice environment. Nurse scientists may now want to focus on finding ways to foster collegiality within their nursing work environments and nursing leaders may want to consider rewarding those individuals who contribute to such a peer relationship among nurses. Contributions to a collegial environment could be measured through evaluations by management and peers.
As a highly valued behavior, when interviewing potential staff, managers may begin to evaluate interviewees’ attitudes toward peer relationships and favor those applications with respect for collegial environments. Rewards for contributions to a collegial environment could consist of monetary rewards, recognition among staff and patients, or advancement within a clinical ladder system.

Professional organizations who have developed standards for a positive work environments (IOM 2000, 2004; AACN, 2005; ANCC, 1983, 2011) may want to consider the influence of nurse-to-nurse peer relationships in future revisions of these documents. Collegiality among nursing staff has not been the focus in any of these models. Of focus in all of these models are the relationships among nurses and physicians. Findings of this study suggest that nurse to nurse collegial relations are of more importance than nurse-physician collegial relations in determining the amount of missed nursing care. In fact, nurse-physician collegial relations were not found to be a significant predictor of missed care. This finding provides evidence that fostering collegial relationships among nurses is warranted and is possibly more important than fostering positive relations among nurses and physicians.

In 2004, the IOM published a document highlighting the need to transform the work environment of nurses in order to keep patients safe. Nurses were noted to make up 54% of the health care workforce. This report recommends several necessary patient safeguards in the working environments of nurses. These safeguards focus on governing boards with a focus on safety, leadership, staffing, organizational support for ongoing learning and decision support, interdisciplinary collaboration, work design that promotes safety, and organizational culture that improves safety (Institute of Medicine, 2004). A
clear identification of the importance of relationships among nurses in the discussion of
the IOM literature does not exist. Instead, when speaking of relationships among
professionals the focus is on that of nurses with other members of the interdisciplinary
team. As demonstrated through the findings of this study, a focus on collegial nurse-to-
nurse relationships may be warranted as an addition to these recommendations.

The American Association of Critical Care Nurses (AACN) established standards
for a Healthy Working Environment (2005). Six standards were developed and described
as: Skilled communication, true collaboration, effective decision making, appropriate
staffing, meaningful recognition, and authentic leadership. In the discussion of the
standards, particular attention is paid to the importance of positive working relationships.
According to these standards, “inattention to work relationships creates obstacles that
may become the root cause of medical errors, hospital-acquired infections and other
complications, patient readmission and nurse turnover” (p. 11). These standards do not
use the term collegiality. Additionally, most of the focus in terms of working together is
approached in terms of nurses working with physicians. Again, similarly to IOM, these
standards could be revised to reflect additional content discussing the importance of
nurses working well with other nurses.

Kramer and Schmalenberg (2008) describe magnet attributes that staff nurses
described as essentials in the work environment. These “Essentials of Magnetism” are
as follows: culture in which concern for patients takes precedence, support for staff
education, supportive nurse managers, working with clinically competent nurses, control
over nursing practice, staffing perceived as adequate, clinical decision making/autonomy.
Noticeably absent are discussions of peer-to-peer relationships, thus adding collegiality as another dimension to these magnet attributes may be necessary.

The nursing shortage is expected to continue to be a problem. Nurse retention becomes very important during nursing shortages. Negative work environments have been linked to intent to leave, nurse turnover, burnout and lower rates of job satisfaction (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Lake, 2007; Manojlovich, 2005; Stone et al., 2007; Strachota, Normandin, O’Brien, Clary, & Krukow, 2003). In times of shortage, factors that contribute to a positive practice environment receive attention. Work focusing on retaining nurses and drawing individuals into the profession may need to begin demonstrating a value for collegiality within the profession.

**Nursing Education**

Now that empirical evidence is available to link collegiality with favorable nursing outcomes, educators may want to begin teaching students the components of a positive peer relationship. A current movement in healthcare education is the focus on interprofessional education (Baggs et al., 1999; Interprofessional Education Collaborative Expert Panel, 2011; Manojlovich, 2010; Petri, 2010; Thistlethwaite, 2012). Educating nurses from the onset of their education on the importance of learning to work well with one another may not only impact the nursing peer relationship but also apply to working relationships with other members of the healthcare team. Nurses are prepared to work at several different levels (practical nurses, RNs, nurse practitioners) and in differing capacities (staff nurse, managers, administration). Focusing on nursing working with nurses within these differing levels and capacities is a necessary in addition to the need for nurses to learn to work with other members of the interprofessional team.
Nursing Policy

The creation of internal policies related to expectations of nurses in regards to the way they conduct themselves when interacting with their peers may be warranted based on the findings of this study. Goals put forth by major organizations focused on hospital work environments such as the IOM, the American Association of Critical Care Nurses and the American Nurse Credentialing Center, are to improve practice environments in healthcare in an effort to improve patient safety. When discussing interpersonal relationships, the key focus among these organizations currently lies in interdisciplinary relationships. Now that collegiality can be cited as an influential factor within the work environment, major organizations could begin identifying intraprofessional relationships as something of importance. The American Nurses Association (2010b) removed collegiality as a standard of practice in the most recent version of this document and the next revision may be improved with the reinstatement of this item as a standard of nursing practice. Based on the findings of this study, one can state that collegiality is associated with less missed nursing care. Other nursing and patient outcomes associated with collegiality have not yet been studied. It may be beneficial for future funding to be directed towards gaining additional evidence to support the understanding of the state, outcomes, and creation of collegiality.

Nursing Science

Further study of collegiality and the nursing practice environment using an outcome variable other than missed nursing care would add to the science of nursing work environments. The MISSCARE survey was a good fit for this study due to the ease of gaining information on all variables from each nurse participant. The survey served
as an outcome variable of the nurses’ ability to complete work expected of nursing during each shift. However, measuring perceptions of missed nursing care after the fact may not be the most accurate way to obtain this sort of data. Measuring the nurses’ frequency of missing care could likely be measured in other ways such as: productivity reports from hospitals or by observing nurses during their shift. In the future, using other more rigorous methods to obtain outcome variable data would add to this area of nursing science. However, using the MISSCARE survey allowed for the collection of data from a national sample of nurses. It would have been impossible to obtain a sample this large if observing nursing care or obtaining hospital’s nursing productivity reports was necessary. However, the MISSCARE survey depends on the nurse estimating the frequency of missing required nursing care after the fact. Relying on nurses’ memory may create inaccuracies in the information obtained. Additionally, nurses may not even realize they have missed certain aspects of nursing care and in turn that information would not be reported in this method of data collection. Future studies could include nursing outcomes such as: job satisfaction, intent to leave, and burnout. Future studies could also examine nurse sensitive patient outcomes such as: patient falls, nosocomial infections, and pressure ulcers.

The examination of the regression model indicates collegiality is influential to missed nursing care. The practice environment was also shown to be influential. Two factors of the practice environment were found to contribute to missed nursing care at a higher level than collegiality (Nursing Foundations for Quality of Care and Staffing and Resource Adequacy). However, three factors of the nursing practice environment were found to make less of a contribution to missed nursing care than collegiality (Nurse
Participation in Hospital Affairs, Nurse Manager Ability, Leadership, and Support of Nurses, and Collegial Nurse-Physician Relations). This may warrant the addition of an additional factor (nurse-nurse collegiality) to the practice environment scale. Lake (2007) previously indicated that nurse to nurse relationships may be a necessary addition to the PES and the findings of this study validate that thought.

An opportunity to replicate and further validate results of this study exists. Personal and workplace characteristics demonstrated little to no relationships with collegiality in this study. Further study of what factors lead to a collegial relationship is warranted. Once it is understood what factors in work environments help to foster collegiality, intervention studies will be warranted to provide empirical evidence supporting the need to create environments rich in collegiality.

Further psychometric testing of the Survey of Collegial Communication may benefit the science surrounding collegiality. The revised SCC was used for the first time in this study. Pearson correlations among components of this tool ranged from .73 to .84 which could indicate multicollinearity. In this study, the SCC was always used in analyses as a mean score so it is unlikely that this multicollinearity caused issues. However, further analysis could aid in the understanding of whether the eight components of the concept are truly different from one another or whether this concept could be measured using a more succinct scale. Exploratory and confirmatory factor analysis could be used to better understand the components of the survey. Findings of this study demonstrate the importance of collegiality when missed nursing care is used as an outcome variable. However, it is unknown what relationship collegiality has to other nursing sensitive outcomes. Repeated studies to gain a better understanding of
collegiality are warranted. If further study continues to demonstrate collegial relationships among nurses are important, it would be necessary to begin to research ways in which the discipline can begin to foster these sorts of relationships within the nursing work environment.

Findings of this study provide a baseline for levels of collegiality among hospital nurses, however, these findings do not aid in the understanding of whether these levels of collegiality are satisfactory. Additional research addressing satisfactory levels of collegiality among nurses is warranted. The SCC as used by Beyer (1979) included the ability for respondents to address their level of satisfaction with collegiality. This was done using three responses to each item, these responses included: this is how it is now, this is how I’d like it to be, and this is how important it is to me. Administering the SCC in this way would allow for the creation of benchmark levels of collegiality.

The focus of the current study was to gain a beginning understanding of collegiality among hospital nurses. Throughout the journey of creating and conducting this research an understanding of the relationship among collegiality and other factors of the practice environment became clear. The analyses in this study were fairly simplistic and it is clear now that to truly understand the practice environment as a whole, a more complex conceptualization may be necessary such as the complexity of the variables involved in the study done by Bogaer et al. (2013). However, findings of this study do aid in understanding that collegiality deserves a place in this more complex conceptualization.
Chapter Summary

Discussion of key findings of this study and the relationship of these findings to limited existing literature available was presented. Implications of these findings to nursing practice, education, science, and policy were explicated. Recommendations for future research were discussed within the implications of nursing science section of this chapter.

This investigation provided empirical evidence that collegiality among nurses influences missed nursing care. Additionally, collegiality is an important factor of the nursing practice environment. This likely warrants revision of the current conceptualization of the nursing practice environment to include collegiality among nurses.
References


Appendix A

Survey of Collegial Communication

(pages 132-136 included the SCC)

*2011 Revision by Menard of the instrument previously adapted by Judith E. Beyer, RN, PhD from the 1974 version of the Survey of Organizations with permission from Dr. David G. Bowers of the Institute for Social Research, University of Michigan, 1978
Katherine Menard RN, MSN, CCRN  
Assistant Professor  
Northern Michigan University  
21 Carrie Road  
Negaunee, MI 49866 

Dear Ms. Menard,  

I was pleased to hear that you are moving on to the proposal submission for your doctoral dissertation. I understand that you are interested in using the Survey of Collegial Communication for your study. You have my full permission to use the Survey for your purposes with all the instrument revisions we have discussed previously. You also have my full permission to perform any statistics you choose in your analysis, including any and all psychometric evaluations.

I send you my best wishes for a smooth proposal defense and dissertation process. I hope that you will enjoy the use of the Survey as much as I did in 1978-1979!

Sincerely,  

Judith E. Beyer, RN, PhD, Retired  
7706 Ward Parkway  
Kansas City, MO 64114
Appendix B

The Professional Practice Environment Scale of the Nursing Work Index

(pages 137-139 included the PES scale)

Permission to Use the Professional Practice Environment Scale

Hi Katie,

The PES is publicly available, so you don't need permission to use it. I recommend getting the instrument directly from Lake’s 2002 article in Research in Nursing and Health, to be certain you’re using the original, validated instrument.

Hope this helps.

Emily Cramer, PhD
Research Assistant Professor
National Database for Nursing Quality Indicators School of Nursing University of Kansas Medical Center
Appendix C

MISSED NURSING CARE (The MISSCARE Survey)

Author: Beatrice J. Kalisch
(Pages 140 – 142 included the scale)

Permission to Use the MISSCARE Survey

Yes you have permission and keep me informed of your progress.

Bea
Beatrice J. Kalisch, RN, PhD, FAAN
Director, Innovation and Evaluation and Titus Professor of Nursing University of Michigan School of Nursing
400 N. Ingalls
Ann Arbor, MI 48109

734 255 5998
bkalisch@umich.edu

-----Original Message-----
From: Katherine Menard [mailto:kmenard@nmu.edu]
Sent: Monday, May 06, 2013 1:52 PM
To: kalisch, Beatrice
Cc: 'Betsy Hetrick'
Subject: Approval to use the Missed Nursing Care Survey

Dr. Kalisch-
I am wondering if I have your permission to use the Missed Nursing Care survey in my dissertation research? We spoke on the phone a few weeks ago and Betsy has sent me the appropriate form. I just need verification from you that I have permission to use this tool in my dissertation.

Thanks so much for your help,

Katie Menard RN, MSN, CCRN
Assistant Professor
Northern Michigan University
2310 New Science Facility
kmenard@nmu.edu
Office: (906)227-1372
Cell: (517)930-4225
Appendix D
Electronic Mail to Potential Participants

Hello!

The purpose of this email is to invite you to participate in a research study entitled The Relationships among Collegiality, the Practice Environment and Missed Nursing Care. I would greatly appreciate your participation.

The purpose of this research study is to describe collegiality among staff nurses in hospitals and the relationship collegiality has to the practice environment and missed nursing care. You are being asked to participate in this study because you are a member of the Michigan Nurses Association. It is understood that members of this organization are practicing nurses who spend their days caring for patients. This study will take place online by following the link contained in this email. This will take about 20 minutes of your time.

Minimal risk is associated with this study. The study can be completely anonymous if you choose, you will not be required to provide your name. There are no direct benefits of participation in this study. The results may influence nursing practice in the future. When you participate, you may choose to provide contact information. This will allow you to be placed in a drawing. Ten participants will be chosen at random to receive $50 amazon.com gift cards.

Participation is completely voluntary. You have the right to refuse to answer any question(s) for any reason, without penalty. You also have the right to withdraw from the research study at any time without penalty. If you are not interested in participating, you may choose to simply not respond in any way to this email invitation.

If you have any questions or would like additional information about this research, please contact me at Katie Menard (517-930-4225, 21 Carrie Road, Negaunee, MI 49866, kimenard@uwm.edu). The University of Wisconsin-Milwaukee Institutional Review Board (IRB) for Human Subjects Research has approved this project.

By proceeding to the electronic component of this study, you are indicating that you understand the above information and have had all of my questions about participation in this research study answered. By completing the electronic component of this study, you voluntarily agree to participate in the research study described above and verify that you are 18 years of age or older.

Please retain this email invitation to participate in the research study for your records and as evidence of informed consent.

Thank you for your consideration,
Katie Menard
PhD candidate, University of Wisconsin-Milwaukee
Appendix E

Follow-up Email to Participants

Hello! You may recall hearing from me a few weeks back in regards to a research study I am currently conducting. My name is Katie Menard and I am a Registered Nurse from Upper Michigan. I am collecting data for my dissertation research and would be very appreciative of your input! I am passionate about improving the working environment of nursing. In this specific study, I want to understand how the relationships nurses have with each other influence the care they provide to patients. **If you have already taken the time to fill out the online survey, thank you! Please do not complete the survey more than once.** If you have not yet completed the survey, I would greatly appreciate your time, energy, and honest answers. The survey will be available until January 10th, 2014. If you plan to participate, please do so at your earliest convenience. Participation in this study involves the completion of an online survey that should take about 20 minutes of your time. Upon completion of the survey you will have the opportunity to submit your contact information in a drawing for one of ten $50 amazon.com gift cards! Please follow the link below to learn the details of this study and complete the survey if you decide to participate.

www.qualtrics.com

Thank you in advance for taking the time and energy to improve the work environments of nurses!

Katie Menard RN, MSN, CCRN
PhD Student, University of Wisconsin-Milwaukee
Assistant Professor, Northern Michigan University
Staff RN, Marquette General Duke-Lifepoint
kimenard@uwm.edu
(517)930-4225
Appendix F

IRB Amendment #1

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  

Department of University Safety & Assurances  
Modification/Amendment Notice of IRB Exempt Status  

Date: January 10, 2014  
To: Karen Morin, PhD  
Dept: College of Nursing  
Cc: Katherine Menard  
IRB#: 14.168  

Title: Collegiality, the Nursing Practice Environment, and Missed Nursing Care  
After review of your proposed changes to the research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol still meets the criteria for Exempt Status under Category 2 as governed by 45 CFR 46.101 subpart b, and your protocol has received modification/amendment approval for:  
• Expand recruitment by posting link to survey on MNA’s website and facebook page  

Unless specifically where the change is necessary to eliminate apparent immediate hazards to the subjects, any proposed changes to the protocol must be reviewed by the Institutional Review Board before implementation.  
Please note that it is the principal investigator’s responsibility to adhere to the policies and guidelines set forth by the University of Wisconsin – Milwaukee and its Institutional Review Board. It is the principal investigator’s responsibility to maintain proper documentation of its records and promptly report to the Institutional Review Board 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 your responsibility to adhere to UWM, 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.).  
Contact the IRB office if you have any further questions. Thank you for your cooperation and best wishes for a successful project.  
Respectfully,  
Jessica Rice  
IRB Administrator
Appendix G

IRB Amendment #2

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

Department of University Safety & Assurances

Modification/Amendment Notice of IRB Exempt Status

Date: January 22, 2014

o: Karen Morin, PhD

Dept: College of Nursing

Cc: Katherine Menard

IRB#: 14.168

Title: Collegiality, the Nursing Practice Environment, and Missed Nursing Care

After review of your proposed changes to the research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol still meets the criteria for Exempt Status under Category 2 as governed by 45 CFR 46.101 subpart b, and your protocol has received modification/amendment approval for:

• Expand recruitment by allowing the American Association of Critical Care Nurses to email the survey link to their members, post the link to survey on their twitter and facebook accounts

Unless specifically where the change is necessary to eliminate apparent immediate hazards to the subjects, any proposed changes to the protocol must be reviewed by the Institutional Review Board before implementation.

Please note that it is the principal investigator’s responsibility to adhere to the policies and guidelines set forth by the University of Wisconsin – Milwaukee and its Institutional Review Board. It is the principal investigator’s responsibility to maintain proper documentation of its records and promptly report to the Institutional Review Board 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 your responsibility to adhere to UWM, 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.).

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

Respectfully,
Jessica Rice
IRB Administrator
Appendix H

Initial IRB Approval

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

Department of University Safety & Assurances
New Study - Notice of IRB Exempt Status

Date: November 26, 2013
To: Karen Morin, PhD
Cc: Katherine Menard, MSN
IRB#: 14.168

Title: Collegiality, the Nursing Practice Environment, and Missed Nursing Care

After review of your research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol has been granted Exempt Status under Category 2 as governed by 45 CFR 46.101(b).

In addition, your protocol has been granted Level 3 confidentiality for Payments to Research Subjects per UWM Accounting Services Procedure: 2.4.6.

This protocol has been approved as exempt for three years and IRB approval will expire on November 25, 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, please respond to the IRB's status request that will be sent by email approximately two weeks before the expiration date. If the study is closed or completed before the IRB expiration date, you may notify the IRB by sending an email to irbinfo@uwm.edu with the study number and the status, so we can keep our study records accurate.

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 I

First Item of Qualtrics Survey

Thank you for taking the time to learn more about this research study. I am hopeful you will decide to participate in my research study entitled *The Relationships among Collegiality, the Nursing Practice Environment and Missed Nursing Care*. The following text provides information regarding the study. By proceeding to the next item on this survey you are providing your consent for participation as outlined below.

The purpose of this research study is to describe collegiality among staff nurses in hospitals and the relationship collegiality has to the practice environment and missed nursing care. You are invited to participate if you are a registered nurse who works at the bedside providing direct patient care for 20 or more hours per week. This study will take place online and will take about 20 minutes of your time.

Minimal risk is associated with this study. The study can be completely anonymous if you choose, you will not be required to provide your name. There are no direct benefits of participation in this study. The results may influence nursing practice in the future. When you participate, you may choose to provide contact information. This will allow you to be placed in a drawing. Ten participants will be chosen at random to receive $50 amazon.com gift cards.

Participation is completely voluntary. You have the right to refuse to answer any question(s) for any reason, without penalty. You also have the right to withdraw from the research study at any time without penalty. If you are not interested in participating, you may choose to simply not to proceed to the survey.

If you have any questions or would like additional information about this research, please contact me at Katie Menard (517-930-4225, 21 Carrie Road, Negaunee, MI 49866, kimenard@uwgm.edu). The University of Wisconsin-Milwaukee Institutional Review Board (IRB) for Human Subjects Research has approved this project.

By proceeding to the next item in this survey, you are indicating that you understand the above information and have had all of your questions about participation in this research study answered. By completing the electronic component of this study, you voluntarily agree to participate in the research study described above and verify that you are 18 years of age or older.

Thank you for your consideration,

Katie Menard

PhD candidate, University of Wisconsin-Milwaukee
Appendix J

Personal and Workplace Characteristics Questionnaire

How many years of total nursing experience do you have? ________ (years)
How long have you been working as an RN in your current place of employment? ________ (years)
What type of care delivery model does your workplace use to provide nursing care?
   Team nursing (collaborating to provide patient care with an RN, LPN and/or unlicensed assistive personnel)
   Primary nursing (Providing the vast majority of care on your own with limited assistance from LPNs or unlicensed assistive personnel)
   Other _____________________________________________

Hospital Work Unit that most closely matches your work environment (choose one)
   Adult ICU
   ER
   Medical
   Surgical
   OR
   Pediatrics
   Neonatal or Pediatric ICU
   Other_____________________

What is your highest level of nursing education?
  ♦ LPN
  ♦ ADN
  ♦ BSN
  ♦ MSN
  ♦ DNP
  ♦ PhD

How old are you? ________ (years)

Gender: Male Female

How many hours do you typically work per week? ______

What shift do you work most often? Days Evenings Nights Rotating
Katherine I. Menard MSN, RN, CCRN

Education
University of Wisconsin- Milwaukee
Milwaukee, WI
Major: PhD in Nursing
Anticipated Completion: Coursework 2011, Dissertation 2014

Eastern Michigan University (2005-2008)
Ypsilanti, MI
Major: MSN (Adult Health-CNS track)/Teaching in Health Care Systems
Completed: July 2008

Marquette, MI
Major: Nursing/BSN
Completed: May 2003

Fellowship
Sigma Theta Tau International Nurse Faculty Mentored Leadership Development Program (March 2010-October 2011)
Description: Accepted as a scholar and assigned a mentor through this program. Worked through an 18 month curriculum geared towards developing and fostering leadership qualities among new nursing faculty members.

Graduate Assistant
Eastern Michigan University (January-December 2007)
Duties: Skills lab instruction and evaluation of BSN students. Assist with coordination of the nursing programs (Traditional BSN, RN to BSN, and Second degree BSN). Coordination entailed clinical placement, health requirements, proctoring of ATI testing, etc.

Freshman Fellowship Program
Northern Michigan University (July 1998-May 1999)
Duties: Assisted with the collection of data for a group of nursing faculty studying the effects of home health care on patients following CABG.

Internship
Mayo Clinic: Summer III Internship
St. Mary’s Hospital (June-August 2002)
Duties: Assisted nursing personnel with care of patients on cardiothoracic transplant ICU.

Nurse Residency Program
Sparrow Hospital (June-August 2003)
Duties: Worked with a preceptor on a variety of floors as a bridge from student to professional.

**Eastern Michigan University**  
**Teaching Practicum (Preceptor: Professor Michael Williams PhD, RN, CCRN)**  
Fall 2006-135 hours  
Duties: Assisted to teach two courses at Eastern Michigan University under the supervision and guidance of preceptor. Courses included:  
*Fundamentals in Nursing*: A lecture course meeting once a week for beginning nursing students.  
*Essentials in Nursing*: A theory course taught in seminar style covering such topics as APA, care planning, introductory research, writing, communication, and issues in nursing today.

**Critical Care Medicine Unit: Clinical Nurse Specialist**  
**University of Michigan Hospital**  
Winter 2007-45 hours  
Duties: Completed clinical time with clinical nurse specialist. Assisted in the development of the rapid response team. Began to learn the role of an advanced practice nurse. Assisted with literature searching, chart review, problem-solving in regards to patient care and nursing competence.

**Trauma Burn Intensive Care Unit/Acute Care Unit: Clinical Nurse Specialist**  
**University of Michigan Hospital**  
Fall 2007-45 hours  
Duties: Completed clinical time with clinical nurse specialist. Rounded with physicians, provided input regarding patient care from an advanced practice perspective. Used evidence based practice to assist in determining best items to stock on the unit while keeping in mind and completing cost analysis. Assisted with the education of nursing staff regarding care planning using NIC, NOC, and NANDA.

**Cardiovascular Intensive Care Unit: Acute Care Nurse Practitioner**  
**University of Michigan Hospital**  
Winter 2008-135 hours  
Duties: Attend rounds and contribute ideas from an advanced practice nursing perspective. Assist NP with writing orders, following up on labs, vitals, consults, etc. Provide nursing staff with an educational program regarding ICU delirium. Recognize educational needs in nursing staff and provide necessary resources to enable competent nursing care.

**Licensure and Certification**  
RN ID # 4704240055  
BCLS  
ACLS  
TNCC
Professional Relevant Experience

Private Duty Aide
Duties: Assisted patients with ADLs, shopping, household chores, cooking, etc.

CENA
Eastwood Nursing Center (2001-2003)
Duties: Assisting patients with ADLs

Registered Nurse
Surgical Intensive Care Unit
Ingham Regional Medical Center (2003-2004)
Duties: RN caring for patients after surgical procedures requiring critical care, also caring for other ICU overflow patients. Trained to titrate a variety of gtts, care of ventilated patients, IABP, and post-op care of open heart patient.

Registered Nurse
Critical Care Medicine Unit
University of Michigan Hospital (January 2005-August 2008)
Duties: RN caring for patients with complex medical conditions requiring ICU care. Responsible for coordinating care among interdisciplinary teams and advocating for patients. Trained to titrate a variety of gtts, manage CVVHD, sedation of patients, assist with a variety of procedures, hemodynamic monitoring and care of ventilated patients. Responsible for interviewing and training new staff.

Nursing Instructor-Adjunct Lecturer
Eastern Michigan University (January 2008-May 2008)
Nursing 405: Medical-Surgical Nursing II
Duties: Clinical instructor on a respiratory step-down unit. Responsible for teaching, supporting, and evaluating senior level nursing students in the clinical setting.

Nursing Instructor-Adjunct Lecturer
Eastern Michigan University (January 2008- May 2008)
Nursing 209 and Nursing 251: The Art and Science of Nursing I & II
Duties: Instructor in skills lab for fundamentals students. Responsible for teaching clinical skills, medication math, and assessing competency of skills.

Nursing Instructor-Adjunct Faculty
Jackson Community College (January 2008-August 2008)
LPN/MA141: Body Structure and Function
Duties: Responsible for 3 sections of this introductory anatomy and physiology course. Prepared all lectures, tests, quizzes and group activities.
Registered Nurse
Intensive Care Unit and Acute Care Unit
Bell Memorial Hospital (August 2008-January 2014)
Duties: Provide contingent coverage of the intensive care and acute care unit at a small community hospital. Management of acute and critical medical and surgical patients.

Registered Nurse
Intensive Care Unit, Coronary Care Unit and Stepdown Unit
Marquette General Duke Lifepoint Hospital (April 2012-Present)
Duties: Provide contingent nursing coverage caring for critically ill patients.

Assistant Professor-Full Time Faculty
Northern Michigan University (August 2008-present)
NE200L Health Assessment Lab
NE201 Introduction to Nursing Concepts
NE202 Introduction to Nursing Skills I
NE204 Introduction to Nursing Skills II
NE312 Adult Health Nursing Clinical
NU211 Foundations of Professional Nursing Practice- Theory
NU212 Foundations of Professional Nursing Practice- Clinic
NU302 Adult Health I Nursing Clinical
NU431 Adult Health II Nursing Theory
Duties: Responsible for teaching the above classes. Prepared lectures, tests, quizzes and group activities.

Professional Affiliations
AACN- American Association of Critical Care Nurses
AAUP- American Association of University Professors
Upper Peninsula Chapter of AACN (Charter President 2011/2012, Secretary 2012/2013, President 2013/2014)
Xi Sigma- NMU Chapter of Sigma Theta Tau International (Vice President 2010-present)
Zonta- Member and Negaunee High School z-club advisor 2008-2011

Poster Presentations:

Poster Presentation, October 2011: “Adaptation and implementation of the AACN’s healthy working environment standards in academia.” Presented at the Sigma Theta Tau International Nursing Honor Society’s Biennial convention in Grapevine, Texas.

Poster Presentation, November 2013: “Collegiality: Through the eyes of the staff nurse.” Chosen by the University of Wisconsin-Milwaukee’s Eta Nu Chapter of STTI to present in the category of ‘rising stars of scholarship and research’ at the Biennial convention of the Sigma Theta Tau International Honor Society.

Oral Presentations:

Oral Presentation, April 2008: “Delirium in the ICU”: Lecture provided to ICU nurses at the University of Michigan regarding delirium assessment and treatment in the ICU. Presentation was approved to provide 1 CEU for nurses in attendance.

Oral Presentation, November 2011: “A collaborative project to teach intradisciplinary teamwork through simulation.” Co-presenter: Nancy Maas. Presented at a meeting of the Northern Michigan University’s Student Nurses’ Association.

Oral CEU Presentation, December 2011: “Healthy working environments in nursing.” To be presented as a continuing educational offering at Marquette General Hospital in collaboration with the Upper Peninsula Chapter of AACN and the Marquette General Staff Council.

Publications: