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Relational Coordination: The Perception and Experiences of Student Nurses and Nursing Faculty in a Hospital Setting

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RELATIONAL COORDINATION: THE PERCEPTIONS AND EXPERIENCES OF
STUDENT NURSES AND NURSING FACULTY IN A HOSPITAL SETTING

A Dissertation Presented

by

CLARE LAMONTAGNE

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

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DEDICATION

I would like to dedicate my dissertation to my wonderful daughter, Lisa Lamontagne.
Lisa greets each day with grace, enthusiasm, and courage. She is an inspiration to me
and my greatest source of pride.

ACKNOWLEDGMENTS

I would like to thank my dedicated committee for their hard work and tireless efforts on my behalf. I would also like to thank my loving family and friends for their ongoing support.

ABSTRACT

RELATIONAL COORDINATION: THE PERCEPTIONS AND EXPERIENCES OF STUDENT NURSES AND NURSING FACULTY IN A HOSPITAL SETTING

SEPTEMBER 2014

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The purpose of this study was to describe and measure student nurses' and nursing faculty experiences and perceptions of relational coordination during their most recent clinical experience in a hospital setting. The complexity of healthcare settings in the United States necessitates a coordinated approach to patient care in order to meet the divergent needs of its citizens. Healthcare students and professionals need to be prepared to work collaboratively and communicate proficiently and effectively.

The theory of relational coordination states that, in a well-functioning organization, members of the healthcare team engage in frequent, timely, accurate, and problem-solving communication and have high levels of shared knowledge, shared goals, and mutual respect.

This descriptive, exploratory study, conducted between May 2012 and December 2013, utilized Gittell's relational coordination instrument to explore the relational coordination experienced by nursing students at several levels in their program in two

pre-licensure schools of nursing in Massachusetts, which included a community college offering an associate degree in nursing and a university offering a bachelor of science degree in nursing. Participants were a convenience sample from each of these institutions. Nursing students and faculty in these programs completed the study survey. Data were collected through Survey Monkey. An analysis of variance and thematic review were used for data analysis.

The analysis of variance performed to analyze student nurse reports of relational coordination with other student nurses, unlicensed assistive personnel, staff nurses, and nursing faculty in traditional clinical hospital settings revealed significant results. Post-hoc analyses revealed that student nurses in the traditional clinical setting reported lower relational coordination scores with staff nurses than those in the dedicated educational unit ($p = .015$).

This study indicates that both nursing faculty and student nurses are experiencing ineffective communication in some clinical environments. Since student nurses in this study reported that increased time and familiarity with staff improved communication and relationships, nurse educators should develop educational models that increase that opportunity.

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CHAPTER 1

INTRODUCTION

Background of Study

The complexity of healthcare settings in the United States (U.S.) and the divergent needs of its citizens require that healthcare professionals and students be prepared to coordinate and implement patient care that is safe, timely, effective, efficient, equitable, and patient centered (Committee on Quality of Health Care in America, Institute of Medicine, 2001). This coordination of care requires the effective use of timely, accurate, and problem-solving communication (Gittel, 2002a, 2002b). Studies have shown that, when there is good communication between nurses and physicians, patient outcomes improve (Arford, 2005; Baggs et al., 1999; Carroll, 2007). In addition, a growing body of evidence indicates that poor communication between healthcare providers significantly contributes to decreased safety in the increasingly complex and technological U.S. healthcare system (Leape, 1994; Page, 2004; Tammelleo, 2001, 2002). Eighty-five percent of physicians surveyed indicated that uncoordinated care results in one or more adverse outcomes stemming from patients receiving contradictory information from healthcare providers (Partnership for Solutions, 2002). Poor communication is identified by the Joint Commission as the “primary root cause of sentinel events.” (Joint Commission, 2007) Large studies done in New York using 1984 data and Colorado and Utah using 1992 data indicated that 44,000 to 98,000 people die yearly in the United States due to preventable medical errors (Brennan et al., 1991; Leape et al., 1991; Thomas et al., 1999). The total cost of preventable medical errors is between 17 and 29 billion each year (Thomas et al. 1999). Medication errors alone lengthen a

patient's hospital stay by 4.6 days at a cost of \$4,685 per patient (Foote & Coleman, 2008). Benner, Sutphen, Leonard, and Day (2010) state that in today's healthcare settings "as the technical and instrumental nature of the knowledge and skilled know-how increase, so does the need for effective communication and relational skills" (p. 24). This new healthcare reality necessitates that the current curriculum used in nursing education effectively prepare nursing students for the demands of the current healthcare environment (Benner et al., 2010).

The complexity within U.S. healthcare settings is manifested in organizations that are hierarchal, interdependent, complicated, technologically sophisticated, ever changing, time restricted, and rapid paced (Benner, et al. 2010; Gittell, 2009). In her research, Gittell (2009) has identified the healthcare and airline organizations as two industries meeting these characteristics of complexity. Furthermore, individuals within these challenging environments are found to be particularly vulnerable to the consequences of ineffective coordination and communication due to the sensitive nature of their work (Cameron, Estryng-Behar, Conway, van Der Heijden, & Hasselhorn, 2008; Gillespie, Chaboyer, Longbottom, & Wallis, 2010). The Committee on Quality of Health Care in America, Institute of Medicine Report, *Crossing the Quality Chasm: A New Health System for the 21st Century* (2001) identified this lack of effective coordination and communication between healthcare providers as one of the most serious problems affecting patient care in the U.S. today:

In the current system, care is taken to protect professional prerogatives and separate roles. The current system shows too little cooperation and teamwork. Instead each discipline and type of organization tends to defend its authority at the expense of the total system's function... Patients suffer through lost continuity, redundancy, excess costs, and miscommunication. (p. 83)

Leaders within healthcare settings have increasingly cited skill deficits in healthcare workers. These deficits include technical and computer skills, critical thinking, communication, management, delegation and supervision skills, and a systems perspective (National Council for State Boards of Nursing, 2001). Benner et al. (2010) found “that a significant gap exists between today’s nursing practice and the education for that practice” (p. 4). These challenges and deficiencies within healthcare require a coordinated effort by all members of the healthcare community to effect change. As the largest group of healthcare providers, nurses have the opportunity to play an important role in the development and implementation of models for effective interprofessional and intraprofessional coordination, and communication (U.S. Department of Labor, 2003).

Gittell (2009) described relational coordination (RC) as an effective way to coordinate work in environments that are highly interdependent, uncertain, and time constrained. The healthcare system and the airline industry both share these characteristics (Gittell 2003, 2009). The theory of relational coordination proposes that participants in these kinds of work environments should engage in frequent, timely, accurate, and problem-solving communication, supported by relationships of shared knowledge, shared goals, and mutual respect. These seven components define relational coordination. Gittell (2000, 2009) reported that, in a surgical context, RC was associated with the positive outcomes of improved quality (as measured by patient satisfaction, pain levels, and functional ability following surgery) and efficiency (as measured by length of hospitalization). In the airline industry, positive outcomes of RC were reported to be quality (as measured by decreased customer complaints, mishandled bags, and late

arrivals) and efficiency (as measured by shorter aircraft turnaround times and higher employee productivity; Gittell, 2003).

The theory of relational coordination was originally developed and tested in the context of air travel (Gittell, 2001, 2003), surgical care (Gittell et al. 2000), medical care (Gittell, Weinberg, Bennett, & Miller, 2008), long-term care (Gittell, Weinberg, Pfefferle, & Bishop, 2008), care across the continuum (Weinberg, Gittell, Lusenhop, & Kautz, 2007), and the criminal justice system (Bond & Gittell, 2010). Within the healthcare setting, Gittell (2009) studied the experience of RC among nurses, social workers, physicians, and case managers. Two important participants in the healthcare team who have not been studied up to this point are student nurses and nursing faculty. As future providers of care in interdependent, time-restricted, and ever-changing work environments, nursing students must be prepared to communicate effectively with all members of the healthcare team. Understanding students' perceptions of the elements of RC during their experiences in the healthcare system would help nurse educators better prepare nursing students for effective communication. This research study describes the necessity of and the process for studying the effects of relational coordination among nursing students, faculty and other healthcare providers.

Statement of the Problem

Historically, educating healthcare professionals was carried out in isolation by specific disciplines (Miller, Riley, & Davis, 2009). This silo format for education limited the interaction between healthcare providers in their student roles. Consequently, healthcare students had little understanding of their colleagues' roles and may lack appreciation for the uniqueness and importance of each provider's contribution to patient

care. Furthermore, the educational emphasis has been on knowledge acquisition and expert skill development with little attention being given to the development of expertise in coordination, collaboration, and communication (Miller, et al., 2009). Wass, Van der Vleuten, and Jones (2001) found that, while healthcare faculty continue to use lecture as the primary means of imparting information, lecture does not provide students with a way to incorporate that information into practice. Furthermore, student nurses in clinical experiences and new graduate nurses reported they often do not have the necessary abilities to coordinate patient care and communicate effectively with other members of the healthcare team (Benner et al., 2010; Clark, 2008; Thomas & Burk, 2009). These findings suggest that students may lack the skill set necessary to implement the constructs of relational coordination in their everyday practice.

Studies indicated that student nurses were not participating in a community of practice that fostered and employed effective communication (Clark, 2008; Thomas & Burk, 2009). Thomas and Burk (2009) studied 221 junior nursing students in a bachelor of science program to determine their perception of being treated justly as members of the healthcare team. Content analysis was used to code the thematic elements of the students' stories. Incidences of unjust treatment involved doctors, instructors, patients, ancillary personnel, and registered nurses (RNs). However, the most frequently reported perpetrators of unjust behavior toward the students came from RNs (Thomas & Burk, 2009). Descriptions of RN behavior toward students included actions described as "condescending, overbearing, rude, sarcastic, disrespectful, patronizing, and degrading" (p. 228). Students in this study reported feeling angry, but unable to confront RNs about their behavior because of the power differential and fear of reprisal (Thomas & Burk,

2009). The researchers had no involvement with the participants. The participants submitted anonymous, typed narratives of their experiences with anger that had occurred in class or clinical settings.

The phenomenological method of qualitative research was used by Clark (2008) to describe seven Caucasian nontraditional student nurses' lived experience of incivility directed at them by nursing faculty. Six themes emerged from the analysis of the interviews. Nursing students described their experiences with nursing faculty as demeaning, unfair, and unreasonable, and left them feeling traumatized, helpless, and angry (Clark, 2008). Some students reported wishing that they had confronted the faculty member but felt that the consequences of doing so would be quite "grave" (p. 288). This study was limited by the homogeneity of the volunteers. This research indicated that students are not currently being engaged in activities that develop relational coordination skills.

Purpose of the Study

The purpose of this descriptive, exploratory study was to describe and measure faculty and student nurses' experiences and perceptions of relational coordination during their most recent clinical experience in a hospital setting. Faculty and student nurses were asked to complete Gittell's (2009) RC survey and to respond to an open-ended question regarding their experiences with each other and with staff nurses and unlicensed assistive personnel (UAP) within three different clinical environments.

Aims of the Study

The aims of this study were the following:

1. Measure and describe faculty and student nurses' experiences and perceptions of relational coordination with staff nurses, unlicensed assistive personnel (UAP), student nurses, and nursing faculty while participating in a traditional clinical environment in a hospital setting.

2. Measure and describe faculty and student nurses' experiences and perceptions of relational coordination with staff nurses, UAP, student nurses, and nursing faculty while participating in a precepted internship clinical environment in a hospital setting.

3. Measure and describe faculty and student nurses' experiences and perceptions of relational coordination with staff nurses, UAP, student nurses, and nursing faculty in a dedicated educational unit (DEU) clinical environment in a hospital setting.

4. Compare the level of relational coordination between student nurses and staff nurses, UAP, and nursing faculty while participating in either a traditional, precepted, or DEU clinical environment in a hospital setting.

5. Measure and describe the experience and perception of relational coordination for associate and baccalaureate degree student nurses interacting with peers, staff nurses, UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

6. Compare the level of relational coordination between nursing faculty and staff nurses, UAP, and student nurses while participating in either a traditional, precepted, or DEU clinical environment in a hospital setting.

Summary

Student nurses have been placed in interdependent, time-restricted, and ever-changing clinical settings with the presumption that they are prepared to function safely

as members of the healthcare team. However, recent study authors (Benner et al., 2010; Clark, 2008; Thomas & Burk, 2009) propose that the knowledge and technical ability of nursing students must be paired with effective communication skills. Development of communication skills may prepare student nurses to deliver patient-centered care and communicate effectively across many disciplines and in various circumstances (Benner et al., 2010). Some research indicates that communication between student nurses, registered nurses, and faculty (Clark, 2008; Thomas & Burk, 2009) is uncivil and ineffective.

Within the healthcare setting, Gittell (2002a, 2009) has studied the experience of relational coordination among patients and numerous healthcare providers. Her work has demonstrated a link between RC and improved patient outcomes (Gittell, 2003, 2009). Two important groups of the healthcare team that have not been studied until now are nursing students and faculty. There has been no research on the perceptions of RC of student nurses and faculty in their clinical settings. This study of faculty and student nurses' experiences with RC addresses this gap in the literature. Furthermore, this research could help nurse educators understand what nursing students are currently experiencing with inter- and intraprofessional relationships.

CHAPTER 2

REVIEW OF THE LITERATURE

In this chapter, relational coordination (RC), the theoretical framework that underpins the study, is explored through pertinent research. Relational coordination is comprised of communication and relationships between individuals who work together. Additionally, the purpose of this literature review is to synthesize the current state of knowledge regarding relational coordination in healthcare settings.

Pertinent literature from healthcare, business, criminal justice, education, and psychology was thoroughly reviewed. Combinations of the terms, relational coordination, communication, collaboration, teamwork, nurses, student nurses, doctors, faculty, and healthcare providers were searched in the following databases: Academic Search Premier, Business Source Premier, CINAHL, PUBMED, and Psych Articles. The inclusion criteria included English language, peer-reviewed, and full-text journal articles within the past 20 years. A total of 262 articles were identified from the literature search and reviewed. Sixty articles were chosen for inclusion in the literature review.

The Theory of Relational Coordination

The theory of relational coordination describes the relational underpinnings of collaboration within and between workgroups (Bond & Gittell, 2010). Himmelman (2001) defines collaboration as “an exchange of information for mutual benefit” (p. 277). Gittell (2002b) builds upon this definition of collaboration by defining RC as “a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration” (p. 301). Relational coordination is thought to be “particularly important for achieving high performance under high levels of task

interdependence, uncertainty, and time constraints” (Gittell, 2008, p. 28). Gittell (2009) demonstrated that healthcare and airline organizations operate in uncertain and time-limited environments that require the coordination of interdependent team members. Furthermore, the Institute of Medicine published *Keeping Patients Safe: Transforming the Work Environment of Nurses* (Committee on the Work Environment for Nurses and Patient Safety, Institute of Medicine, 2004), which identified interprofessional coordination as a key component to enhancing patient safety and urged the development of detailed strategies that support more coordination among healthcare providers. This report also focused on the need to establish and support interdisciplinary teams and analyze the effects of team performance on healthcare outcomes.

The theory of relational coordination was developed by Gittell (2003) while studying the airline industry. Gittell (2003) noted that Southwest Airlines had outperformed the other major airlines by making a profit for the previous 31 years. In fact, the market share of Southwest in 2002 was larger than all of the other major U.S. airlines combined. Southwest’s success started with providing efficient and quality airline service while growing in a controlled and focused manner (Gittell, 2003). The success of Southwest continued, Gittell theorized, because of “its ability to build and sustain relationships characterized by shared goals, shared knowledge, and mutual respect” (Gittell, 2003, p.12).

This theory of relational coordination, initially developed in the airline industry, has been further developed and tested in the context of surgical care (Gittell et al., 2000), medical care (Gittell, Weinberg, Bennett, et al., 2008), long-term care (Gittell, Weinberg, Pfefferle, et al., 2008), care across the continuum (Weinberg et al., 2007), and the

criminal justice system (Bond & Gittell, 2010). Within the healthcare setting, Gittell (2009) has studied the experience of RC among patients, nurses, nursing assistants, social workers, referring physicians, residents, technicians, physical therapists, attending physicians, and case managers. These studies indicate that organizational work practices are related to the level of RC experienced by members within that organization (Gittell, 2002a, 2002b; Gittell & Weiss, 2004). Gittell (2009) identified twelve organizational practices that were present in high performance organizations (see Table 1).

Table 1

High-performance work practices

Select for teamwork	Enables enculturation of employees to organizational values
Measure team performance	Focuses team members on goal achievement instead of individual roles
Reward team performance	Shared rewards have been found to support coordination and goal commitment
Resolve conflicts proactively	Unresolved conflict causes relationships to deteriorate and decrease performance
Invest in frontline leadership	Smaller supervisory spans of control allow for coaching and feedback to improve coordination of care
Design jobs for focus	Sub-organizational focus drives higher levels of relational coordination
Make job boundaries flexible	Overlapping task boundaries were conducive to success in interdependent, uncertain, and time-constrained systems
Create boundary spanners	Integrate the work of team members across functional boundaries
Connect through pathways	Protocols and routines increase quality by coordinating and sequencing tasks
Broaden participation in patient rounds	Provides real-time coordination and incorporation of information
Develop shared information systems	Direct horizontal linkages across tasks. Allows information to flow on an as-needed basis
Partner with suppliers	Develop partnerships in order to succeed

Gittell (2009) noted that work practices that support connections between team members, such as frontline leadership and boundary spanners are particularly important to enhance communication and relationships. The importance of maintaining a small supervisory span of control for frontline management is seen as critical for providing a supportive environment. Boundary spanners facilitate information between individuals, thereby enhancing connections. Gittell (2009) states that when high-performance work practices are present, improved RC results in better quality and efficiency outcomes. These outcomes are manifested by a shorter length of hospitalization (Gittell et al., 2001).

Communication Aspects of Relational Coordination

The theory of relational coordination identifies four dimensions of high-quality communication: frequent, timely, accurate, and problem solving (Gittell 2003, 2009). Frequent communication provides an opportunity for team members to become more familiar with each other's role and work style. Gittell (2009) proposed that this familiarity enhances the relationship between team members. While frequent communication can be necessary, it can also be ineffective without the additional components of being timely, accurate, and problem solving. The timing and accuracy of information sharing in healthcare can be critical to a successful patient outcome. Delayed and inaccurate information increases the potential for errors in patient care. In other words, high-quality communication can lead to high-quality relationship and low-quality communication often leads to low-quality relationships (Gittell, 2011; see Figure 1).

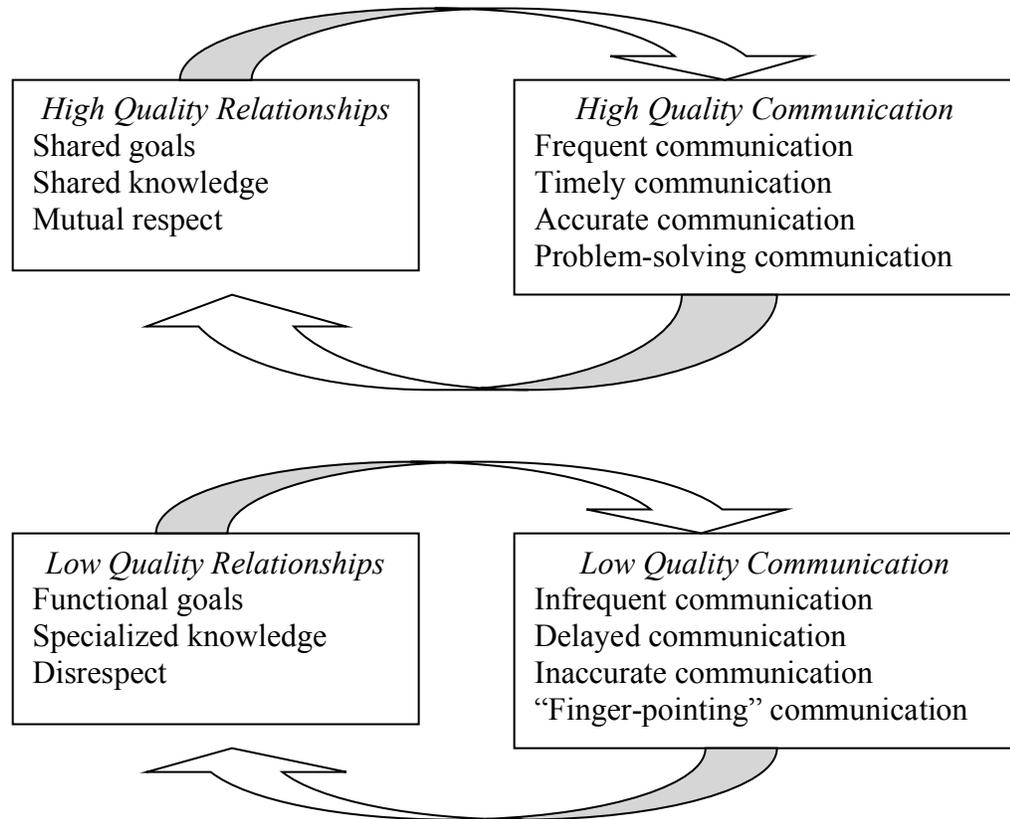


Figure 1. Mutual reinforcement between dimensions of relational coordination. From *Relational Coordination: Guidelines for Theory, Measurement and Analysis*, by J. H. Gittell, 2011, p. 22. Copyright (2011) by J. H. Gittell. Reprinted with permission.

Additionally, the interdependence required in healthcare settings necessitates that the healthcare team work together in joint problem solving. Each of these dimensions of high-quality communication has implications for providing safe and effective patient care.

Relationship Aspects of Relational Coordination

Gittell (2002a) proposed that there are three specific components of high-quality relationships: shared knowledge, shared goals, and mutual respect. It is these three specific components of relationships that form the basis for coordinated work (Weinberg et al. (2006). The first component of shared knowledge is necessary in order to

successfully achieve a mutually agreed upon outcome. Gittell (2009) argued that shared knowledge is necessary because each healthcare provider brings necessary and unique information to the provision of patient care. It is of particular importance that all individuals understand each other's roles and responsibilities for accomplishing tasks. Secondly, shared goals mutually agreed upon create a bond between team members that allows for increased collaboration and coordination in achieving these goals. Lastly, mutual respect for each team member's abilities and competencies is integral to effective coordination within interdependent teams (Gittell, 2009; see Figure 2).

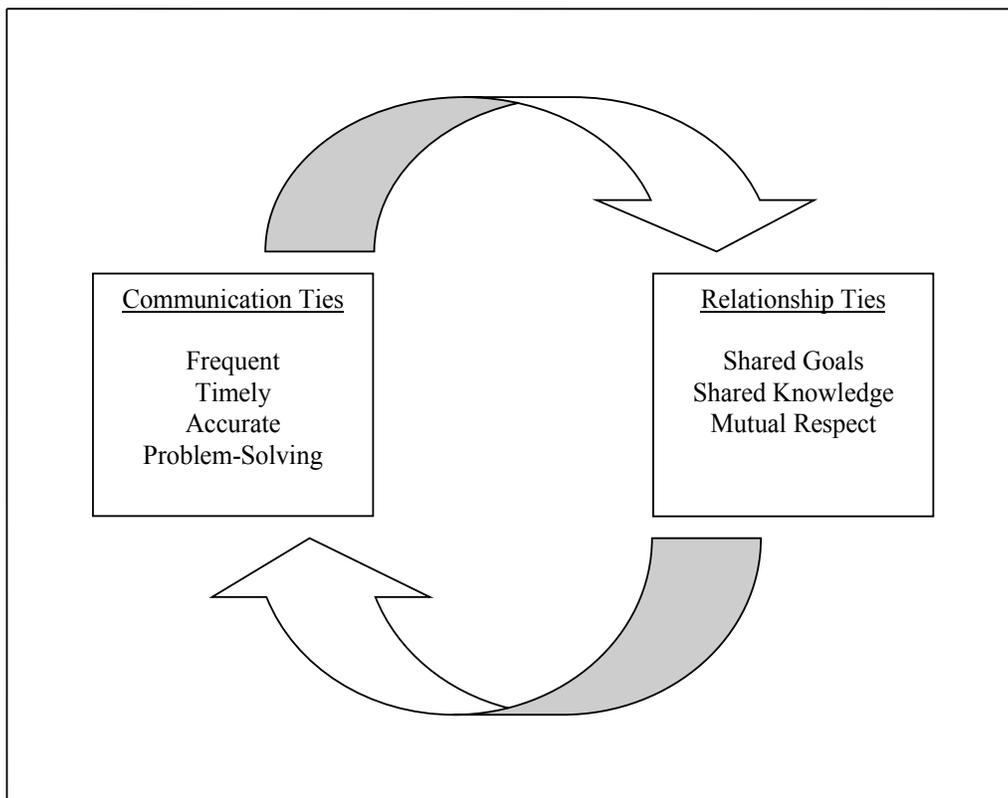


Figure 2. The relationship between communication and relationship ties. Adapted from *High Performance Healthcare: Using the Power of Relationships to Achieve Quality, Efficiency, and Resilience*, by J. H. Gittell, 2009, p. 18. Copyright (2009) by McGraw-Hill. Reprinted with permission.

Relational coordination focuses on relationships between roles and not simply relationships between unique individuals. This focus on roles and not the specific person in the role exists when RC is high. When relationships between roles are based on shared knowledge, shared goals, and mutual respect, personal ties are less important to the successful accomplishment of the goals (Gittell, 2009).

Organizational practices can provide team members with increased connections resulting in high-quality communication and high-quality relationships. Specifically, organizations that optimize the flow of information among team members can enhance the development of RC within the organization. The institutionalization of supportive organizational practices can lead to the development of high-performance organizations (Gittell, 2009).

The model of relational coordination identifies relationship dimensions and communication dimensions as key components to enhanced outcomes in healthcare. Gittell et al., (2010) stressed that high-performance work practices such as cross-functional teamwork, conflict resolution, performance measurement, rewards, meetings, and boundary spanners can be designed to nurture and support RC and connections between healthcare providers. Gittell (2009) argued that it is particularly important to implement high performance work practices in organizations that are interdependent and complex.

Gittell (2009) focused her research on numerous members of the healthcare team. Two important groups that have not been studied are student nurses and nursing faculty. It is important to determine the role of RC in these groups to enhance the development of future healthcare providers. Furthermore, it is of significance to identify the educational

needs of all healthcare providers as the healthcare system becomes increasingly complex and the mandate for quality care accelerates. This study focused on the relationship and communication dimensions of RC for student nurses and nursing faculty. Based on these results, nursing faculty can use high-performance work practices to improve the relational coordination for student nurses and themselves.

Communication Between Healthcare Providers and Student Nurses

The hierarchical nature of the academic and healthcare settings puts nursing students at a greater risk of experiencing poor communication and harassment by superiors due to their lack of authority as well as their level of insecurity, anxiety, and limited knowledge bases (Camerino et al., 2008; Curtis, Bowen, & Reid, 2007; McKenna, Smith, Poole, & Coverdale, 2003; Seabrook, 2004). Additional risk factors in educational settings include preconceived negative opinions about instructors based on stories from other students in previous years, as well as the students' level of insecurity, anxiety, and knowledge (Seabrook, 2004). Faculty behavior toward student nurses has been described as demeaning, belittling, and unfair (Clark, 2008). While the seven students who participated in that qualitative study felt that something needed to be done to eliminate those disturbing behaviors, their feelings of inferiority to faculty resulted in "powerlessness and being in a position of disadvantage" (Clark, 2008, p. 5). This perception by students resulted in feelings of little hope for successful resolution (Clark, 2008; Clark & Springer, 2007, 2010).

Staff nurse behavior toward students has been described as "condescending, overbearing, rude, sarcastic, disrespectful, patronizing, and degrading" (Thomas & Burk, 2009, p. 228). Thomas and Burk had asked 221 junior nursing students in a bachelor's

degree program to write a narrative about anger they had experienced in clinical regarding their interactions with registered nurses. Content analysis revealed that the main theme experienced by the student nurses was a perceived injustice and unfair treatment by the registered nurses. Unfortunately, while students or newly licensed nurses relate that they would never treat someone in this way, they often find themselves perpetrating similar behaviors on those with less power than they have, in order to fit into the work environment (Lewis, 2006). Curtis et al. (2007) studied the effects of hurtful and ineffective communication experienced by 152 nursing students during clinical placements and the possible impact on employment decisions. Five themes were recognized in this study: humiliation and lack of respect; powerlessness and becoming invisible; the hierarchical nature of bullying; coping strategies; and future employment choices. A total of 86 students in the Curtis et al. study indicated having had an experience with or observation of bullying. Seventy-seven said that that experience had impacted their career and employment choices. The study described the necessity for professional support groups and training on the nature of hurtful communication in order to educate all nurses about ineffective communication and to reduce its incidence.

Beech (2007) evaluated a 3-day training session for 243 student nurses in the United Kingdom on the prevention and management of workplace aggression. The teaching methodologies used for the study were lecture, “breakaway skills,” and aggression scenarios (Beech, 2007). The knowledge, skills, and attitudes acquired as a result of these interventions were found to be generally encouraging, with scores on questionnaires increasing from pre- to posttest (Beech, 2007). In order to educate all nurses about ineffective communication and to reduce its incidence, the study also

discussed the need for professional support groups and training on the nature of hurtful communication.

The use of simulation was found to be an effective strategy to teach communication skills to student nurses. Krautscheid (2008) completed a 3-year review of undergraduate nurse performance related to effective clinical communication. Simulation scenarios were developed and used to evaluate 285 student nurses' ability to perform many aspects of care, including the ability to communicate effectively with physicians via telephone in an emergent situation. The faculty measured the students' ability to report essential information in a Situation, Background, Assessment, and Recommendation (SBAR) format. Students had been introduced to the SBAR framework in lecture, but there was no opportunity for practice in lab or clinical settings. The data revealed substandard communication that resulted in poor outcomes for the client. Subsequently, revisions were made to strengthen communication strategies in lecture, lab, and clinical. This resulted in consistently improved performance by the nursing students (Krautscheid, 2008). Krautscheid concluded that a common assumption among nursing programs that provide lecture content on communication strategies is that nursing students learned how to effectively communicate and that this knowledge could be effectively applied in clinical practice. However, "telling students how to communicate provides theoretical knowledge but lacks practical knowledge and application regarding when, what, and how to communicate information" (Krautscheid, 2008, p. 1). The importance of communication in providing safe and quality healthcare points to the need to ensure that every nursing student is prepared and evaluated on communication competency (Krautscheid, 2008).

Verbal communication is a primary way of exchanging critical information concerning patient issues in hospital settings. Improving the exchange of information between healthcare providers has been cited as a key component to preventing medical errors and promoting a safe patient environment. In fact, the technical skills of nurses may be secondary to the communication, collaboration, and relational skills needed to achieve positive patient outcomes (Upenieks, Lee, Flanagan, & Doebbling, 2009). Furthermore, collaboration among team members enhances employee job satisfaction, fosters organizational commitment, heightens productivity, and boosts morale. Although the benefits of improved communication and collaboration among healthcare providers is becoming more evident, barriers still exist that impede improved communication and collaboration from becoming a reality. Some of the challenges to making this a reality are status hierarchy between healthcare professionals, the fast-paced nature of today's healthcare system, reduced patient lengths of stay, higher patient acuity, and more patients (Benner et.al, 2010; Gittell 2009). Another area of concern is that nurses receive little formal education to enhance their communication skills. What education they do receive is in a lecture format and focuses primarily on interactions with patients rather than with the healthcare team (Kalisch, Lee, & Salas, 2010). These studies suggest that there is considerable room for improvement in communication between student nurses, faculty, and staff nurses and a need to increase the education for student nurses to better prepare them for the complex communication in the healthcare setting.

Relational Coordination

Relational coordination is the “co-ordination carried out by front-line workers with an awareness of their relationship to the overall work process and to other

participants in that process” and builds upon the concepts of communication and collaboration (Gittell, 2000, p. 518). Research in non-healthcare (Gittell (2000, 2001, 2003, 2009; Woolcock & Narayan, 2000) and healthcare (Gittell, 2003, 2009; Havens, Vassey, Gittell, & Lin, 2010) settings supports the general value of RC for improved outcomes within these organizations.

Complex organizations such as those in the healthcare and airline industries are particularly dependent upon RC to achieve positive outcomes. The complexity of these organizations often results from task interdependence between employees, time constraints in which to accomplish these tasks, and uncertain and unpredictable work environments (Gittell, 2003, 2009). As a result of these characteristics, work in these industries requires ongoing coordination among employees in order to achieve successful outcomes (Gittell 2000, 2001, 2003, 2009).

Within the business sector Gittell (2000, 2003) studied eleven groups of airline employees involved in flight departures in nine airports across the U.S. Relational coordination was measured using six survey questions that included three about communication and three about relationships. These six factors formed the basis for the survey instrument (Gittell, 2003; see Table 2).

Table 2

Relational coordination survey items

Shared Goals	Do people in these groups have the same work goals as you?
Shared Knowledge	How much do people in these groups know about your job?
Mutual Respect	How much respect do you get from the people in each of these groups?
Frequent Communication	How often do you communicate with each of these groups?
Timely Communication	Do the people in these groups communicate with you in a timely way?
Problem-Solving Communication	When there is a problem, do the people in these groups try to solve the problem or try to determine whose fault it was?

The items in the RC survey are rated on a 5-point Likert scale. Participant's responses were aggregated from the six survey items. A total of 354 surveys were completed out of the 400 that were administered in person by the researcher, for a response rate of 89%. The findings indicate that RC was significantly associated with improved group performance in quality and efficiency ($p < 0.01$) using customer complaints, mishandled bags, staff time per passenger, and late arrivals as the variables (Gittell, 2001). Significant positive correlations were found between RC and cross-functional liaisons, cross-functional accountability, smaller spans of supervisory control, selection for teamwork, cross-functional conflict resolution, and flexibility of work roles (Gittell, 2000). The use of information technology (IT) was significantly correlated with weaker RC. The extent of unionization was not associated with RC in any way (Gittell, 2000; see Figure 3). Cronbach's alpha for the seven dimensions of RC was reported to be 0.842. This demonstrates sufficient index validity for this study. One-way analysis of

variance showed significant cross-airline and group differences in RC ($p < 0.001$; Gittell, 2001).

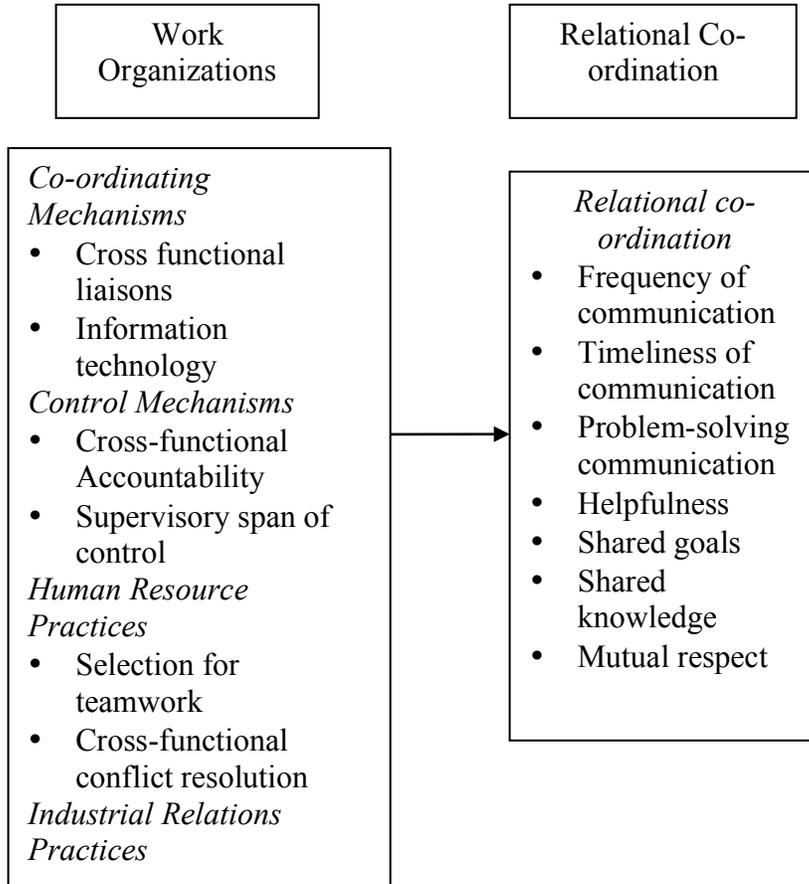


Figure 3. Model of relational coordination. Adapted from “Organizing Work to Support Relational Co-ordination,” by J. H. Gittell, 2000, *The International Journal of Human Resource Management*, 11(3), p. 519. Copyright (2000) by Taylor and Francis Ltd. Reprinted with permission.

Relational coordination has also been studied within the criminal justice system (Bond & Gittell, 2010). Unique to that study was the assessment of relational coordination among agencies involved in offender reentry rather than between individuals. A self-administered survey was distributed to 45 administrators with a response rate of 77%. Additionally, telephone interviews were conducted to add to the methodological rigor of the study. The unexpected results of the study indicate that

increases in relational coordination were associated with increases in recidivism by offenders. These findings may reflect the more complex evaluation of agency relational coordination and require further research.

Healthcare Organizations

There is a growing body of research studying the impact of relational coordination on healthcare organizations and providers. In her original study of the healthcare industry, Gittell amended the theory of relational coordination to include accurate communication in addition to the other dimensions: frequent, timely, and problem-solving communication as well as shared knowledge, shared goals, and mutual respect. Gittell (2009) proposed that it is the bundling of these seven characteristics, not any one characteristic in isolation, that defines relational coordination and that these characteristics together are correlated with the positive outcomes of improved quality and efficiency within highly interdependent organizations.

Several studies have shown that relational coordination is positively associated with improved outcomes (Gittell 2000, 2009). Nine healthcare organizations were used to study the effects of RC on patients undergoing total joint arthroplasty surgery (Gittell 2000, 2009). The positive outcomes of RC in the nine healthcare facilities were identified as improved quality (as measured by patient pain levels and functional ability following surgery) and efficiency (as measured by length of hospitalization; Gittell, 2000, 2009; Gittell et al., 2010). Within medical units in these nine healthcare facilities, Gittell (2009) found that every one-point increase in RC among caregivers reduced the patient's length of stay by 2/3 of a day and the cost of hospitalization was reduced by approximately \$670. The high-performance work practices present in some of the healthcare facilities

were positively correlated with improved RC and positive outcomes (Gittell, Seidner, & Wimbush, 2010; see Figure 4).

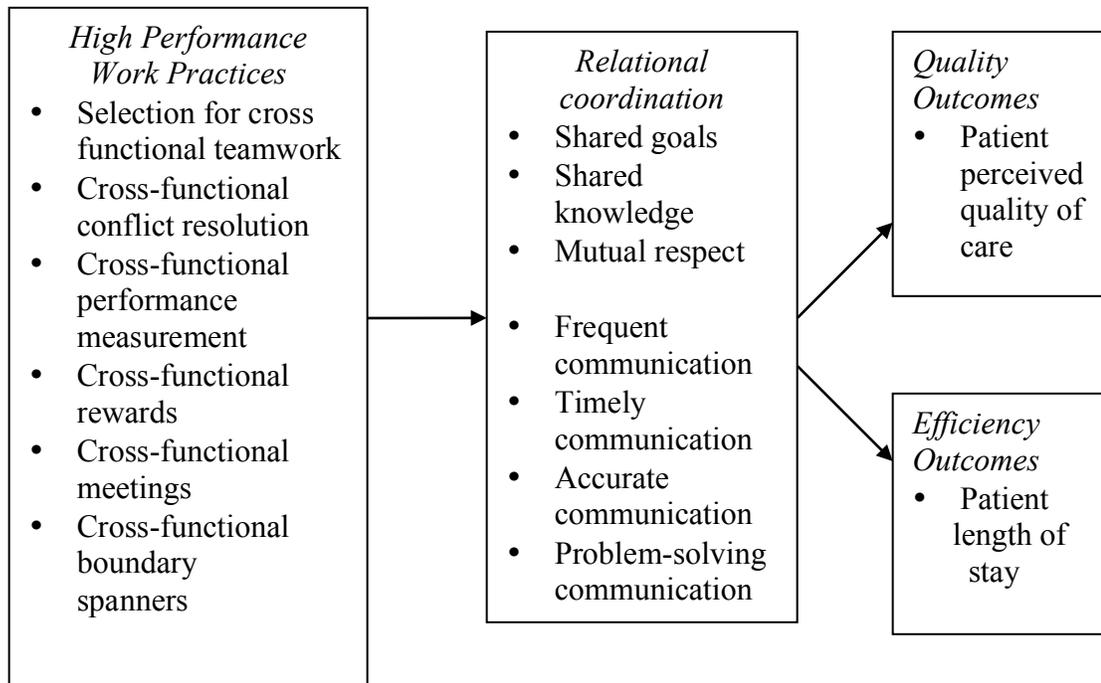


Figure 4. A relational model of how high-performance work systems work in healthcare. By J. Gittell, R. Seidner, and J. Wimbush, 2010, *Organizations Science*, 21(2), p. 502. Copyright (2010) by Informs. Reprinted with permission.

Havens et al., (2010) surveyed 747 registered nurses to assess relational coordination across six patient care units in a hospital setting. The findings indicated that, when relational coordination was high between nurses on the same unit in a community hospital, these nurses reported higher levels of quality care on their unit (Havens et al., 2010). RC between nurses on the same unit was 4.19. However, RC between nurses on different units was 3.00, which was significantly lower ($p < 0.01$). RC between nurses and physicians on the same unit was reported to be 3.74. While other studies have reported that the lowest levels of RC were between different disciplines, this was not true in the Havens et al. study. This finding necessitates further research. RC was

disaggregated in this analysis to assess for specific actionable opportunities for frontline managers to enhance RC. Feelings of respect among providers for the work they do emerged as the most important predictor of quality care. Methodological limitations to this study were the self-reporting by nurses of quality care without independent objective measurements.

Two studies examined the effects of relational coordination in a primary care setting (Cramm & Nieboer, 2011; Noel, Lanham, Palmer, Leykum, & Parchman, 2013). Cramm and Nieboer (2011) surveyed 188 healthcare professionals within 19 healthcare facilities who completed the RC survey. The findings indicate that the delivery of chronic illness care was positively related to RC between healthcare providers. In contrast to the study of Havens et al. (2010), which identified higher RC between the same disciplines on the same unit, the Cramm and Nieboer (2011) study showed higher RC between different disciplines in primary care. The RC mean among general practitioners (GPs) was 2.69, whereas the RC mean between GPs and practice nurses, dietitians, physical therapists, medical specialists, and nurse practitioners was 3.73, 3.07, 3.06, 3.16, and 3.19, respectively. The findings from these two studies suggest that the proximity and frequency of interactions between healthcare providers may be important in the development of RC. Noel et al., (2013) studied the association of RC and reciprocal learning on the implementation of the Chronic Care Model (CCM) and improved outcomes for patients with Type 2 diabetes in a primary care setting. Healthcare providers in this study (n = 282) completed the RC Scale, Reciprocal Learning Scale, the Assessment of Chronic Illness Care (ACIC) survey and demographic information. The

findings indicate that RC is significantly ($p < .001$) associated with ACIC scores. The findings suggest that high-quality relationships positively impact chronic illness care.

In long-term care facilities, Gittell, Weinberg, Pfefferle, et al. (2008) identified relational coordination as being significantly associated with increased job satisfaction for 252 nursing aides ($r = 0.30, p < 0.001$) and improved resident ($n = 105$) reported quality of life ($r = 0.37, p = 0.008$). Nursing aides education level was marginally associated with job satisfaction ($r = -0.12, p = 0.066$). Resident gender was marginally associated with resident quality of life ($r = 0.19, p = 0.052$). This was the first study to identify a relationship between RC and job satisfaction of frontline workers. Additionally, this was the first study to evaluate RC in nursing home residents. The RC survey in this study was limited to five dimensions by eliminating timely and accurate communication in order to decrease the time needed for survey completion. Additionally, the survey was scored on a 4-point Likert scale to minimize time and accommodate the lower educational levels of the participants. Limitations of this study include the use of incentives for survey completion and the modification of the RC survey.

The multiple settings and multiple outcomes in these studies add strength to the findings (Cramm & Nieboer, 2011; Gittell, Weinberg, Pfefferle, et al. 2008; Havens et.al, 2010). Methodological limitations for each of these studies include the use of convenience sampling, lack of triangulation of data collection, and cross-sectional study designs. Generalizability would be enhanced with random sampling, multiple methods of data collection, and the use of longitudinal studies.

Summary

Gittell (2000) reported that there are eight factors present in effective work organizations that significantly impact the development of relational coordination. These factors include cross-functional liaisons, information technology, cross-functional accountability, supervisory span of control, selection for teamwork, cross-functional conflict resolution, flexible work role, and the extent of unionization. Gittell (2000, 2002a, 2002b, 2003, 2009) and colleagues have studied the concept of relational coordination among employees in healthcare (Havens et al., 2010; Weinberg et al. 2007) and airline organizations as well as the criminal justice system (Bond & Gittell, 2010). Within these organizations, relational coordination has had a positive impact on key quality and efficiency measures of performance. However, that research has not addressed the experience of relational coordination for nursing students and nursing faculty with their peers, staff nurses, and UAP in various clinical settings. The experience of nursing students is important to assess because nursing students are important future members of the healthcare team. Their perceptions and experience of relational coordination may be an important factor in student nurses' ability to provide quality and efficient patient-centered care. The assessment of the perception of nursing faculty will enhance the methodological rigor of the study by further triangulating the data.

Conclusion

Effective communication and collaboration between healthcare providers is an important component of quality patient care. The theory of relational coordination expands upon these concepts to argue for the necessity of high-quality relationships along with high-quality communication in order to produce high-performing organizations. In

RC, high-quality relationships are marked by shared goals, shared knowledge, and mutual respect among healthcare providers. High-quality communication includes four specific dimensions: frequent, timely, accurate, and problem-solving communication. High-performing organizations are those with organizational practices that enhance relational coordination. While research regarding the presence of RC among healthcare providers is growing, this researcher had no knowledge indicating that relational coordination has been studied among student nurses and nursing faculty. This study addresses that gap in the literature.

Research Questions

1. What is the student nurse's experience and perception of relational coordination with peers, staff nurses, unlicensed assistive personnel (UAP), and nursing faculty while participating in a traditional, precepted, or dedicated educational unit (DEU) clinical environment in a hospital setting?

2. What is the nursing faculty's experience and perception of relational coordination with students, staff nurses, UAP, and other nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

3. Is there a difference in the experience and perception of relational coordination for student nurses interacting with peers, staff nurses, UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

4. Is there a difference in the experience and perception of relational coordination for associate and baccalaureate degree student nurses interacting with peers, staff nurses,

UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

5. Is there a difference in the experience and perception of relational coordination for nursing faculty interacting with students, staff nurses, UAP, and other nursing faculty participating in traditional, precepted, or DEU clinical environment in a hospital setting?

Conceptual Definitions

Relational coordination: “Relational coordination is an emerging theory for understanding the relational dynamics of coordinating work” (Gittell, 2011, p. 3).

“Relational coordination is a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration” (Gittell, 2002b, p. 301).

Operational Definitions

1. Student nurse: For the purposes of this study, a student nurse was defined as an individual pursuing a degree in nursing in a pre-licensure program.

2. Associate degree student nurse: An individual pursuing a degree in nursing in a 2-year pre-licensure program.

3. Baccalaureate degree student nurse: An individual pursuing a degree in nursing in a 4-year traditional or second bachelor’s pre-licensure program.

4. Nursing faculty: A registered nurse who is employed by a school of nursing to direct and supervise the education of students in a hospital setting.

5. Staff nurse: Registered Nurse (RN) in the state of Massachusetts is the designation given to an individual who is licensed to practice professional nursing, holds ultimate responsibility for direct and indirect nursing care, is a graduate of an approved

school for professional nursing, and is currently licensed as an RN pursuant to M.G.L. c. 112.

6. Unlicensed assistive personnel (UAP): For the purposes of this study, a UAP is an unlicensed person who has been trained in performing technical skills in providing patient care. A UAP works under the direction and supervision of the RN.

7. Traditional clinical environment: An educational experience for student nurses in a healthcare facility under the direction and supervision of one nurse faculty member.

8. Precepted internship clinical environment: An educational experience for student nurses in a healthcare facility that is coordinated by nursing faculty. This is a one-to-one experience under the direction and supervision of the RN preceptor.

9. Dedicated educational unit (DEU) clinical environment: An educational experience for student nurses in a healthcare facility that is coordinated by nursing faculty and nursing staff collaboratively. Nursing staff (clinical instructor and clinical teachers) have the primary responsibility for educating the student nurses on the unit. The faculty has the primary responsibility for the education and evaluation of all students. The staff nurses are responsible for the supervision of their students.

CHAPTER 3

RESEARCH METHOD

Study Design

A descriptive, exploratory design was used to describe and analyze the components of relational coordination (RC) as perceived and experienced by nursing students and nursing faculty within various hospital and educational settings. Three clinical environments were compared: (1) traditional; (2) precepted; and (3) DEU. This comparison was done overall and separately in college settings defined by degree program (associate versus bachelor's).

According to Marshall and Rossman (2006), a descriptive design is used “to document and describe the phenomenon of interest” (p. 34). Burns and Grove (2005) state that the purpose of a descriptive study is to “generate new knowledge about concepts or topics about which limited or no research has been conducted” (p. 44). While information is known about RC within several categories of healthcare workers, no previous study was known to the researcher that described the experience of student nurses and faculty. An exploratory design is used “to identify or discover important categories of meaning” (Marshall & Rossman, 2006, p. 34). This study was necessary to explore the meaning of RC to future healthcare providers and the faculty that prepare them for that role.

The design was strengthened by the use of diverse clinical and college settings. Baystate Medical Center (BMC) is a large, urban teaching hospital. Cooley Dickinson (CDH) is a small suburban community hospital. Furthermore, the University of Massachusetts (UMass) is a large suburban university while Springfield Technical

Community College (STCC) is an urban community college. This diversity enhanced the ability to generalize the results. The settings were selected based on the availability of participants and the researcher's access to these facilities. Additionally, these settings located in urban and suburban areas, provided a diverse population.

Furthermore, the use of quantitative and qualitative data collection and analysis was designed to provide richer description of the data obtained. The addition of an open-ended question provides for multiple perspectives to the RC survey questions.

Target Population, Type of Sample, and Eligibility Criteria

The target population was all student nurses and nursing faculty at UMass and STCC who have completed a clinical rotation at BMC or CDH within a precepted, traditional or DEU setting. All students who were matriculated in the programs and had taken clinical courses that met the eligibility criteria were invited to participate.

All nursing faculty who teach in these clinical courses were also eligible and were asked to participate. The students and faculty who agreed to participate were asked to complete the study questionnaire on Survey Monkey. These groups were chosen because of their accessibility and representation of a diverse population.

A convenience sample was used in this study. The use of a convenience sample may result in a selection bias if the participants are not representative of the target population. An attempt to control for this bias was made by asking the participants to rate their entire experience, not just an isolated example. Furthermore, according to Lincoln and Guba (1985), the use of multiple sources for qualitative data collection (faculty and students) may enhance the trustworthiness and credibility of the data.

Data Collection

Student nurses and nursing faculty participants completed Gittell's (2009) RC Survey and an open-ended question that queried their communication and relationships with other healthcare providers during their most recent clinical experience in a hospital setting. The RC survey is composed of seven survey questions. Four of the questions are about frequent, accurate, timely and problem-solving communication. The remaining questions are about aspects of relationships: shared goals, shared knowledge, and mutual respect (see Appendices A and B). Participants' responses to the RC survey were recorded on a 5-point Likert-type scale. The responses of the individuals were then aggregated into a group measure of RC. Gittell (2000) reported a Cronbach's alpha for the seven components of the RC survey to be 0.842, indicating a high degree of reliability.

Protection of Human Subjects

The research study was submitted for review to the Institutional Review Boards (IRB) at UMass and STCC. Separate IRB approval was not required from BMC or CDH because data were not to be obtained from the employees at those facilities. A waiver for informed consent was requested from the respective IRBs because the research involved only minimal risk and did not adversely affect the rights and well-being of the participants. Consent was implied by completion of the questionnaire. The participants were told that the purpose of the study was to explore communication and coordination between healthcare providers. While the potential risk to human subjects was minimal, some participants could have been distressed by discussing communication and coordination challenges. Therefore, participants were given a list of resources available at

their school if they were in need of additional support following their participation in the study.

Women account for 92.1% of all nurses (United States Department of Labor, 2003). Therefore, it was anticipated that women would make up the majority of participants included in this study. Efforts were made to diversify this sample by using an urban and suburban setting. Children under age 19 were not included.

Approval for the study from the IRBs at UMass and STCC was received in April 2012. In order to ensure the protection of human subjects, the study was conducted in accordance with all specified requirements from the IRB.

Recruitment of Participants

A 5-minute question-and-answer session was held at each college location in order to request participant involvement. However, no one attended this session at either location. This presentation would have included a handout describing the level of involvement requested from each participant. Potential subjects would have been told that their participation was voluntary and that they may drop out of the study at any time without experiencing adverse consequences. An attendance sheet requesting contact information would have been distributed. Two days following the presentation an e-mail would have been sent to those in attendance repeating the presentation information, thanking them for their time, and encouraging their further involvement. Upon agreeing to participate in the study, the volunteers would have been asked to designate a time in which they would complete the survey and informed that the length of their time commitment would be approximately 30 minutes. The expectation of participants during this time frame was to complete the survey on a computer that is convenient to them. The

participants would have been informed at this time that their participation was completely voluntary and at any time in the process they could decide to not participate without any negative consequences. Since no one attended these sessions, recruitment of participants was carried out by e-mailing all eligible faculty and students at both degree-granting locations (see Appendix C).

Data-Safety Monitoring Plan

A data-safety monitoring plan was developed for the study. Data were coded and stored in a locked office and locked file cabinet in the researcher's office. Confidentiality of the participants was maintained with the use of a confidential study identifier and aggregate presentation of the data. A systematic plan for managing the data was implemented. The use of an internet survey allowed the researcher to gather and store data on the computer, in a backup drive, and as a hard copy. Hard-copy data were locked in the researcher's office. Data collection forms were used to categorize all quantitative data. Qualitative data was organized and stored in ATLAS.ti 7. Identifying data from each participant was coded in order to maintain the subject's confidentiality. The identifying data for each participant included the confidential study identifier plus role (faculty or student), clinical environment (traditional, DEU, or precepted), and student degree option (ADN or BS).

Description of Study Variables

Independent variables. These were the clinical environments, and the degree program.

Dependent variable. Relational coordination was the dependent variable.

When studying relational coordination, the unit of observation is the role. The RC score is the aggregate of the results from the individual respondents in each role.

Data Analysis

The statistical and thematic analysis of the data is described in this section. This description includes any relationship between the demographic data, the open-ended question, and the results of Gittell's (2009) RC survey. The analysis of data proceeded in three phases. First, quantitative analysis was performed on demographic data to determine frequencies, relative frequencies, means, and standard deviations (see Appendices D and E). One way analysis of variance (ANOVA) was used to compare differences in RC experienced by students and faculty across three different clinical environments: traditional, precepted, and DEU. Independent t-tests were done to assess for the influence of degree type (AD versus BS) on RC.

Gittell (2011) states that it is not unusual during data collection to have access to "only a subset of the functional groups involved in the work process" (p. 32). However, whether subsets or entire workgroups are available for data collection "you can still learn a great deal about relational coordination" (Gittell, 2011, p. 34). When subsets of groups are studied, the experience of RC is documented in an asymmetrical matrix. If all groups in the work process are surveyed, a symmetrical matrix would then result. The RC ties between and among participants included in this study is presented in a matrix that is symmetrical for student nurses and nursing faculty results and asymmetrical for student nurses and nursing faculty related to staff nurses and UAP. This information is presented in table format (see Table 3).

Table 3

Relational coordination matrix

Asymmetrical Matrix of Relational Coordination				
Role	Student Nurse	Nursing Faculty	UAP	Staff Nurse
Student Nurse				
Nursing Faculty				

Note. UAP = Unlicensed Assistive Personnel

Third, qualitative analysis of student and faculty comments was done to identify relevant themes. Miles and Huberman (1994) suggest that including a qualitative component to a questionnaire can help with “validating, interpreting, clarifying, and illustrating quantitative findings, as well as through strengthening and revising theory” (p. 41). While there are many computer-assisted qualitative data analysis (CAQDAS) programs, ATLAS.ti7 was used in this study because of its “flexible integration of a large range of data and information (Lewis & Silver, 2010). Furthermore, Atlast.ti7 accepts textual data in plain text (.txt), Rich Text Format (.rtf), and Microsoft Word documents (.doc).

Quantitative Analysis

The Relational Coordination Scale and the online survey were utilized to gather data for this study. The RC Scale was developed and validated using participants from the commercial airline industry (Gittell, 2000a, 2000b). This scale can be used to evaluate RC in settings that are highly uncertain, interdependent, and time constrained. Gittell et al. (2000) adapted this tool to healthcare settings that were determined to have similar characteristics as the airline industry. They reported Cronbach's alphas ranging from 0.71 to 0.84 and an overall reliability index of 0.84.

The demographic portion of the survey was used to document the age, gender, type and format of nursing degree being pursued, type of clinical environment, and type of previous education that had been completed (see Appendices D and E). The Relational Coordination Survey results and demographic data were analyzed using SPSS 21. Descriptive statistics were computed for all study variables. The survey data were analyzed using measures of central tendency to describe the distribution of the demographic characteristics and the perception and experience of relational coordination. A one-way ANOVA was used to determine any possible relationship between the clinical environments and the RC score of the participants. Independent t-tests were done to assess for the influence of degree type (AD versus BS) on RC.

In order to increase the accessibility of the survey and convenience to the participants, the survey was given on Survey Monkey. A total of 1.7 billion people have Internet access (Internet World Stats, 2010). In the U.S., 70% of Americans use the Internet on any given day (PEW, 2005). College students in particular have expressed a preference for Internet surveys over paper-and-pencil assessment (Vispoel, 2000). Furthermore, the direct entry of information on the survey by participants eliminates potential error by the researcher having to enter information from a paper-and-pencil survey, thereby increasing the validity and reliability of the results. Also, transcription of responses to an open-ended question was eliminated. Data collection and analysis took place between May 2012 and December 2013.

Statistical Analysis

In preliminary analyses, the distributions of all dependent variables were assessed for normality using quantile-quantile plots and the Shapiro-Wilk test. Participant

demographics were described with means and standard deviations for continuous variables and frequencies and relative frequencies for discrete variables. Collapsing of responses was done to prevent small cell counts as appropriate.

In the main analyses, analysis of variance was used to assess group difference in relational coordination; independent t-tests were used when only two groups were compared. Groups were defined by (a) clinical environment (traditional, precepted, DEU); and (b) degree type (associate degree and bachelors of science degree).

Anticipated Effect Size

We considered an effect size (ES) of $d=0.3$ in a one-way ANOVA in our sample size calculations, as this is an indicator of a moderate effect size (Cohen, 1992).

Desired Power

Desired power was set at 0.80. A power level smaller than 0.8 would incur too great a risk of a Type II error (Cohen, 1992). A power level larger than 0.8 would require a sample size beyond the resources available for this study. This power level is also appropriate given the limited amount of research on this topic.

Level of Significance

Type I error was set at $p < 0.05$, two-sided. This level of statistical significance would indicate that the results of this study are unlikely to be due to chance.

Necessary Sample Size

Utilizing a power of 0.8, a significance level of .05, and an ES of $d=0.3$, the calculated target sample size for this study was 66 (Faul, Erdfelder, & Buchner, 2009). It is important to note that this study is underpowered to identify a small effect. This limitation is discussed in both the results and discussion sections.

Threats to Internal Validity

One threat to internal validity of the study was selection bias. Selection bias was minimized by inviting all students and faculty from both schools who met the inclusion criteria to participate. Internal validity can also be affected by confounding variables. In this study, the possible confounding variables included the positive or negative experiences of the participants on the day that they chose to complete the survey. To minimize potential for this bias, the participants were instructed to take into consideration their entire clinical experience during that rotation and not to focus on any one specific experience.

Threats to External Validity

The use of a convenience sample in quantitative studies limited the generalizability of the findings.

Qualitative Analysis

The qualitative data analysis followed the steps identified by Miles and Huberman (1994). The process of data analysis requires the researcher to code or identify segments of data that relate to the phenomenon of interest. Prior to coding, the data was categorized by participant type (student or faculty), degree type (ADN or BS), and clinical environment (traditional, DEU, or precepted). Coding then proceeded in three phases: describing, interpreting, and creating patterns. The descriptive coding stage requires that objective characteristics of the phenomenon are used to classify the data. Interpretive coding adds a more detailed layer of meaning to the descriptive analysis. During interpretive coding of the study, the concepts or themes were revisited to see how they might relate to other areas of data. Finally, in the pattern coding, there was analysis of the

relevance of similarities and differences in the concepts or themes across the dataset. While these phases do build upon one another, the process is cyclical. This cyclical process allows for repeated consideration of the data. This repeated consideration provides an opportunity for reflexivity and “dwelling with the data” by the researcher and enhances the rigor and trustworthiness of the study. Through the use of ATLAS.ti7, codes were managed and organized to develop a detailed understanding of the perception of relational coordination for student nurses and nursing faculty.

Trustworthiness

Miles and Huberman (1994) express concern that how the data collection and analysis is completed in qualitative research may not allow for replication of the study. Lincoln and Guba (1985) suggest that an audit trail be used to increase trustworthiness of the data. Auditability of the data was preserved in this study by maintaining all raw data and by documenting each step of the transformation of raw data to themes through the use of ATLAS.ti7.

Additional strategies to increase trustworthiness included peer-checking of identified themes. One member of my committee collaborated with me on the data analysis.

Sample size in a qualitative study is determined by data saturation. Data saturation was achieved through “dwelling with the data” (Burns & Grove, 2005, p. 548). Methodological triangulation of the data was achieved through the process of peer review of the data findings.

Qualitative data were collected through an open-ended question on the survey and analyzed for common themes (see Appendices A and B). The ATLAS.ti7, qualitative

software program was used for organizing, coding, and clustering of themes and subthemes. Furthermore, according to Lincoln and Guba (1985), the use of multiple sources for qualitative data collection (faculty and students) may enhance the trustworthiness and credibility of the data.

CHAPTER 4

STUDY RESULTS

The purpose of this descriptive, exploratory study was to describe and measure student nurses' and nursing faculty experiences and perceptions of relational coordination (RC) during their most recent clinical experience in a hospital setting. Results from the analyses of quantitative and qualitative data and major study findings are reported in this chapter. The results described are related to the research questions as stated in Chapter 2.

Research Questions

1. What is the student nurse's experience and perception of relational coordination with peers, staff nurses, unlicensed assistive personnel (UAP), and nursing faculty while participating in a traditional, precepted, or dedicated educational unit (DEU) clinical environment in a hospital setting?

2. What is the nursing faculty's experience and perception of relational coordination with students, staff nurses, UAP, and other nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

3. Is there a difference in the experience and perception of relational coordination for student nurses interacting with peers, staff nurses, UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

4. Is there a difference in the experience and perception of relational coordination for associate and baccalaureate degree student nurses interacting with peers, staff nurses,

UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

5. Is there a difference in the experience and perception of relational coordination for nursing faculty interacting with students, staff nurses, UAP, and other nursing faculty participating in traditional, precepted, or DEU clinical environment in a hospital setting?

Participant Characteristics

The demographic characteristics of the participants in this study are summarized in Table 4. The sample consisted of faculty (n = 14) and students (n = 88). The majority of the faculty participants were female ages 27–30 and the majority of the student participants were also female ages 19–22. Faculty participants were equally similarly distributed among associate and bachelor's degree colleges. Thirty-nine faculty (44.3%) taught associate degree students, and 49 (55.7%) taught bachelor's degree students.

Table 4
Participant demographics

	Faculty (N = 14)		Student (N = 88)	
	N	%	N	%
Gender				
Male	1	7.1	14	15.9
Female	13	92.9	74	84.1
Missing	0	0.0	0	0.0
Age				
19–22	0	0.0	25	28.4
23–26	2	14.3	6	6.8
27–30	6	42.9	21	23.9
31–40	5	35.7	21	23.9
41–50	1	7.1	7	8.0
>50	0	0.0	6	6.8
Missing	0	0.0	2	2.3
Nursing Program				
Associate Degree	7	50.0	39	44.3
Bachelor's Degree	7	50.0	49	55.7
Missing			0	0.0
Hospital				
Baystate	10	71.4	62	70.4
Cooley Dickinson	4	28.6	18	20.5
Missing	0	0.0	8	9.1
Degrees, License, Certificate*				
CNA	0	0.0	16	18.2
ADN	2	14.3	17	19.3
LPN	0	0.0	2	2.3
BS/BA	8	57.1	39	44.3
MS/MA	8	57.1	6	6.8
DNP	2	14.3	0	0.0
PhD	0	0.0	1	1.1
Other	1	7.1	8	9.1
NA	0	0.0	20	22.7
Missing	2	14.3	4	4.5

*Some participants have multiple certificates and degrees.

Note. CNA = Certified Nursing Assistant; ADN = Associate Degree in Nursing; LPN = Licensed Practical Nurse; DNP = Doctor of Nursing Practice.

Quantitative Analysis

The Relational Coordination Scale and the online survey were utilized to gather quantitative data. Analysis of variance was used to assess group differences, and, when only two group were compared, independent t-tests were utilized. This section presents those findings.

Relational Coordination Scores

Mean RC scores for each group of the study participants and the all-group score for each of the seven dimensions of RC are presented in Table 5. The Cronbach's alpha of the RC instrument ranged from 0.865 to 0.925, in this sample, depending on the unit of analysis (faculty, student) indicating excellent reliability.

The data in Table 5 indicate that the highest overall RC score, as rated by both nursing faculty and student nurses, was for nursing faculty (4.15), while the lowest overall RC scores was for unlicensed assisted personnel (3.30). The highest rated dimension for RC with nursing faculty was accurate communication (4.29), while frequent communication (3.96) was the lowest RC dimension score. The highest rated dimension for RC with student nurses was mutual respect (4.36), whereas the lowest was accurate communication (3.94).

Table 5

Mean relational coordination scores for each workgroup rated by student nurses and nursing faculty

	N	Mean	SD ^a
Frequent Communication			
Nursing Faculty	100	3.96	1.02
Staff Nurses	100	4.21	0.80
Unlicensed Assistive Personnel	98	3.38	1.19
Student Nurses	100	4.16	0.85
Timely Communication			
Nursing Faculty	99	4.09	1.03
Staff Nurses	101	3.86	.92
Unlicensed Assistive Personnel	98	3.28	1.18
Student Nurses	99	3.98	1.00
Accurate Communication			
Nursing Faculty	99	4.29	0.91
Staff Nurses	101	4.27	0.81
Unlicensed Assistive Personnel	96	3.70	1.07
Student Nurses	98	3.94	0.86
Problem-Solving Communication			
Nursing Faculty	101	4.18	1.06
Staff Nurses	100	4.16	0.85
Unlicensed Assistive Personnel	95	3.38	1.14
Student Nurses	96	3.96	0.99
Shared Knowledge			
Nursing Faculty	98	4.18	0.95
Staff Nurses	99	3.72	0.95
Unlicensed Assistive Personnel	96	2.95	0.98
Student Nurses	99	4.09	0.87
Mutual Respect			
Nursing Faculty	100	4.17	0.89
Staff Nurses	100	3.66	0.96
Unlicensed Assistive Personnel	97	3.30	1.00
Student Nurses	98	4.36	0.75
Shared Goals			
Nursing Faculty	100	4.23	0.97
Staff Nurses	101	3.95	0.85
Unlicensed Assistive Personnel	97	3.26	1.07
Student Nurses	98	4.23	0.80
Relational Coordination			
Nursing Faculty	101	4.15	0.81
Staff Nurses	101	3.98	0.68
Unlicensed Assistive Personnel	98	3.30	0.93
Student Nurses	100	4.10	0.63

^a SD – standard deviation

The RC scores for nursing faculty and student nurses rated by the individual workgroup are presented in Table 6. According to Gittel (2008), typical within-workgroup RC scores range from 4 to 4.5 (less than 4 is weak, greater than 4.5 is strong), while typical between-workgroup scores range from 3.5 to 4 (less than 3.5 is weak, greater than 4 is strong). A typical between-organization score ranges from 3 to 3.5 (less than 3 is weak, greater than 3.5 is strong). In this study, the nursing faculty within-group RC score was 3.42, suggesting a weak relationship. The student within-group RC score of 4.08 indicates a typical within-group score. There were not enough faculty nurse reports to allow a comparison between faculty and student RC dimension scores.

Table 6

Mean relational coordination dimension scores for each workgroup rated by its own members (within-group scores; N = 112)

RC Dimension	NFs Score	RC	StuNs Score	RC
Frequent Communication	3.15	weak	3.67	weak
Timely Communication	2.92	weak	3.93	weak
Accurate Communication	3.67	weak	3.91	weak
Problem-Solving Communication	3.29	weak	3.98	weak
Shared Goals	3.27	weak	4.10	typical
Shared Knowledge	3.69	weak	4.36	typical
Mutual Respect	3.71	weak	4.25	typical
Relational Coordination	3.42	weak	4.08	typical

Note. NFs = Nursing Faculty; StuNs = Student Nurses.

The overall RC score as reported by students in all other workgroups is presented in Table 7. Student RC score with faculty was 4.27, with staff nurses 3.97, with UAP 3.33, and with other students 4.08. The student-faculty and student-student scores all indicate a strong relationship. The student-staff nurse indicates a typical score and the student-UAP score indicates a weak relationship.

Table 7

Mean relational coordination scores for students with other workgroups (between-group scores)

Student Relational Average Score	N	Min	Max	Mean	RC	SD ^a
Faculty	87	1.00	5.00	4.27	strong	.70
Staff Nurses	87	1.14	5.00	3.97	typical	.72
UAP ^b	85	1.00	5.00	3.33	weak	.91
Student Nurses	86	1.00	5.00	4.08		.68

^a SD = standard deviation

^b UAP = Unlicensed Assistive Personnel

The overall RC scores as reported by faculty with all other workgroups are presented in Table 8. The faculty RC score with faculty was 3.42, with staff nurses 4.01, with UAP 3.12, and with students 4.20. While the faculty-faculty and faculty-UAP RC score is weak, the faculty-staff nurse relationship and the faculty-student RC score indicates a strong relationship.

Table 8

Mean relational coordination scores for faculty with all other workgroups (between-group scores)

Faculty Relational Average Score	N	Min	Max	Mean	RC	SD ^a
Faculty	14	1.00	5.00	3.42		1.10
Staff Nurses	14	3.57	4.71	4.01	strong	.39
UAP ^b	13	1.00	4.29	3.12	weak	1.07
Student Nurses	14	3.86	4.71	4.20	strong	.25

^a SD = standard deviation

^b UAP = Unlicensed Assistive Personnel

The RC average scores using both students and faculty reports were compared using matched-pair t-tests and are presented in Table 9. For the group as a whole, there

was a significant difference in the RC score between the faculty and UAP workgroups. Significant differences were also found in the comparison between student nurse and UAP RC scores. In all cases, lower RC scores were seen with UAP staff. The comparison between the faculty and staff nurse interaction was marginally significant ($p = .074$).

Table 9

Relational coordination score comparison by workgroup
(as reported by students and faculty)

		Mean	N	SD	t	p ^a
Pair 1	Faculty	4.15	101	.81	1.81	.074
	Staff Nurses	3.97	101	.68		
Pair 2	Faculty	4.15	98	.82	7.62	<.001
	UAP ^b	3.30	98	.93		
Pair 3	Faculty	4.15	100	.82	0.63	.533
	Student Nurses	4.10	100	.63		
Pair 4	Staff Nurses	3.97	98	.69	6.56	<.001
	UAP	3.30	98	.93		
Pair 5	Staff Nurses	3.97	100	.68	1.74	.085
	Student Nurses	4.10	100	.63		
Pair 6	UAP	3.30	98	.93	7.97	<.001
	Student Nurses	4.10	98	.64		

^a p = paired t-test

^b UAP = Unlicensed Assistive Personnel.

Analysis of Aims of the Study

A discussion regarding each study aim follows the comprehensive list below.

1. Measure and describe faculty and student nurses' experiences and perceptions of relational coordination with staff nurses, unlicensed assistive personnel (UAP), student

nurses, and nursing faculty while participating in a traditional clinical environment in a hospital setting.

2. Measure and describe faculty and student nurses' experiences and perceptions of relational coordination with staff nurses, UAP, student nurses, and nursing faculty while participating in a precepted internship clinical environment in a hospital setting.

3. Measure and describe faculty and student nurses' experiences and perceptions of relational coordination with staff nurses, UAP, student nurses, and nursing faculty in a dedicated educational unit (DEU) clinical environment in a hospital setting.

4. Compare the level of relational coordination between student nurses and staff nurses, UAP, and nursing faculty while participating in either a traditional, precepted, or DEU clinical environment in a hospital setting.

5. Measure and describe the experience and perception of relational coordination for associate and baccalaureate degree student nurses interacting with peers, staff nurses, UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

6. Compare the level of relational coordination between nursing faculty and staff nurses, UAP, and student nurses while participating in either a traditional, precepted, or DEU clinical environment in a hospital setting.

The analyses that follow evaluate the first five aims of the study. Because so few faculty responded, the analyses were performed for students only. To evaluate faculty and student nurse experience and perception of RC with staff nurses, UAP, student nurses, and nursing faculty by clinical environment (traditional, precepted, DEU), a one way analysis of variance was performed. The results identified statistically significant clinical

environment differences in student nurse RC scores for both the UAP ($F = 5.34, p = .007$) and staff nurses ($F = 4.02, p = .022$). Post-hoc comparisons were performed to explore the nature of these differences and utilized the less conservative LSD post-hoc approach. Post-hoc analyses revealed that student nurses in the traditional clinical environment reported lower RC scores with the staff nurses than those in the DEU ($p = .015$). In contrast, student nurses in the traditional unit reported higher RC scores with UAP than those in the DEU ($p = .002$; see Table 10 and Figures 5 and 6).

Table 10

Total relational coordination by role and setting among student nurses

		N	Mean	SD	F	p
Faculty	Traditional	57	4.36	.65	1.73	.184
	Precepted	11	3.96	1.09		
	Dedicated Educational Unit	17	4.18	.53		
	Total	85	4.28	.70		
Staff Nurses	Traditional*	57	3.83	.75	4.02	.022
	Precepted	11	4.40	.43		
	Dedicated Educational Unit*	17	4.18	.66		
	Total	85	3.98	.73		
UAP	Traditional**	57	3.52	.75	5.34	.007
	Precepted	9	3.16	1.06		
	Dedicated Educational Unit**	17	2.75	1.13		
	Total	83	3.32	.92		
Student Nurses	Traditional	57	4.09	.65	1.85	.831
	Precepted	10	3.96	1.09		
	Dedicated Educational Unit	17	4.11	.52		
	Total	84	4.08	.68		

Note. UAP = Unlicensed Assistive Personnel.

*Least significant difference p-value = .015

**Least significant p-value = .002

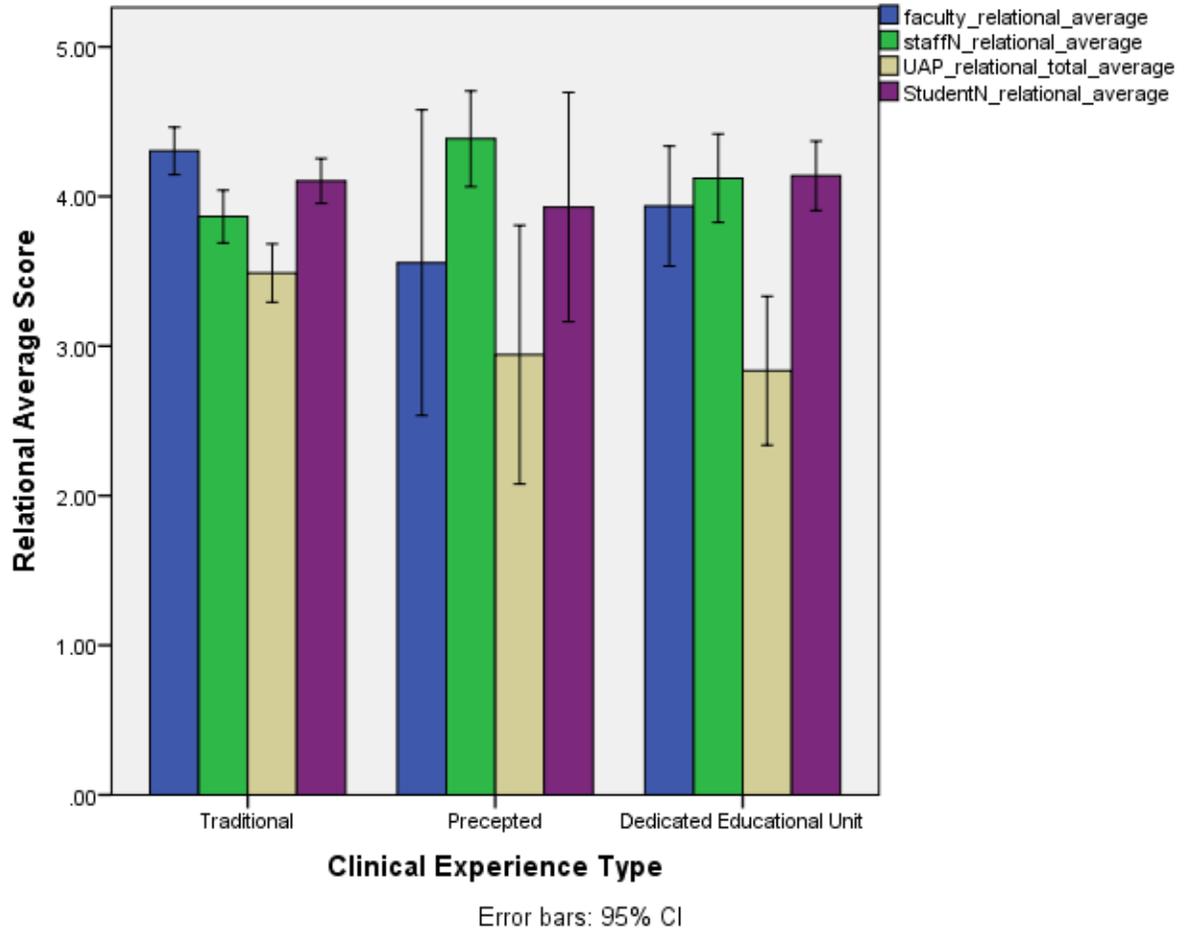


Figure 5. Relational coordination average score reported by student nurses by clinical environment.

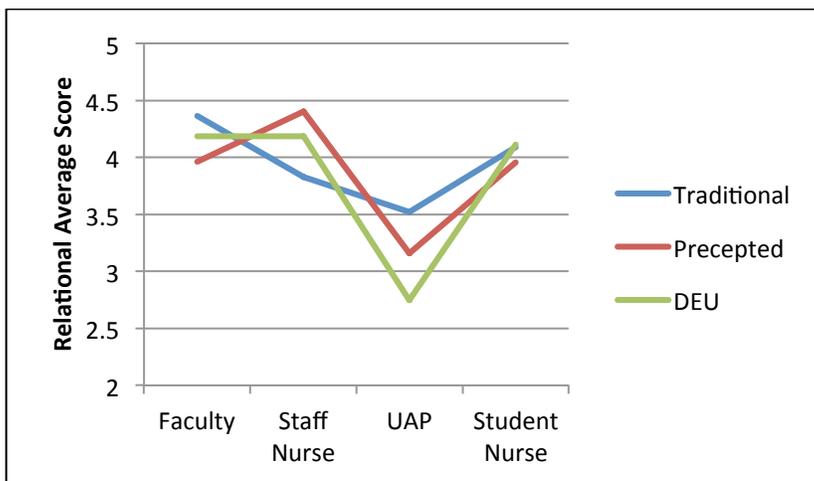


Figure 6. Relational coordination average score by clinical environment.

To further compare student nurse RC scores for relational coordination with other student nurses, staff nurses, UAPs, and nursing faculty by clinical environment in a hospital setting, a Repeated Measure ANOVA using the General Linear Model (GLM) was performed. This method allowed the examination of all RC scores simultaneously. Using the GLM, the four RC scores, as reported by the student nurses, were evaluated by clinical environment type. RC scores for student nurses in the precepted setting were not included, as the sample size was too small. RC scores for student nurses in the traditional setting are presented in Table 11. RC scores for student nurses in the DEU setting are presented in Table 12. These scores are presented graphically in Figure 6.

Results revealed an overall main effect for RC Score (Pillai's trace $F = 26.84$, $df = 70$, $p < .001$) and clinical environment (Pillai's trace $F = 8.57$, $df = 70$, $p < .001$). Matched-pair t-test comparisons of RC score among nursing students in the traditional clinical environment revealed that all RC scores were significantly different (p 's range from $<.001$ to 0.03) with the exception of the comparison of student report of faculty RC score and student report of UAP RC score ($p = .132$).

Table 11

Traditional learning environment reported by student nurses (N = 57)

Relational Average Score	Mean	SD
Faculty	4.36	.65
Staff Nurses	3.83	.75
UAP	3.52	.75
Student Nurses	4.09	.65

Note. UAP = Unlicensed Assistive Personnel.

Matched-pair t-test comparisons of RC score among nursing students in dedicated educational setting revealed significant comparisons between the following pairs of RC

scores: Faculty RC score and UAP RC score ($p < .001$), Staff Nurse RC score and UAP RC ($p < .001$), and UAP RC score and Student Nurse RC score ($p < .001$).

Table 12

Dedicated educational unit reported by student nurses (N = 17)

Relational Average Score	Mean	SD
Faculty	4.18	.53
Staff Nurses	4.18	.66
UAP	2.75	1.13
Student Nurses	4.11	.52

Note. UAP = Unlicensed Assistive Personnel.

Student-Nurse-Degree Type

An examination of RC scores across degree type (ADN and BS) as rated by student nurses was performed using independent t-tests. Results included significant differences in both UAP and student nurse RC scores based on student-nurse-degree type. Nurses pursuing a BS reported lower RC scores with other student nurses than nurses pursuing an ADN. Similarly, student nurses pursuing a BS reported lower RC scores with UAP than student nurses pursuing an ADN. Although the difference is only marginally significant, student nurses pursuing a BS also reported lower RC scores with faculty than students in the ADN program (see Table 13 and Figures 7 and 8). Although not statistically significant, the same pattern was identified between ADN and BS student nurses with staff nurses. Given the low power and the consistent pattern, this finding should be re-evaluated in a larger sample with multiple schools. Because of the participation of only two schools, these differences may be related to differences in the two programs rather than the degree type.

Table 13

Total relational coordination by degree type as reported by student nurses

	Entry Type	N	Mean	SD	t	p
Faculty	ADN	38	4.43	.62	3.79	.055
	BS	49	4.15	.73		
Staff Nurse	ADN	38	4.09	.64	2.025	.158
	BS	49	3.87	.77		
UAP	ADN	38	3.66	.79	10.498	.002
	BS	47	3.06	.91		
Student Nurse	ADN	38	4.26	.43	4.637	.034
	BS	48	3.95	.80		

Note. ADN = Associate Degree in Nursing; BS = Bachelor of Science in Nursing; UAP = Unlicensed Assistive Personnel.

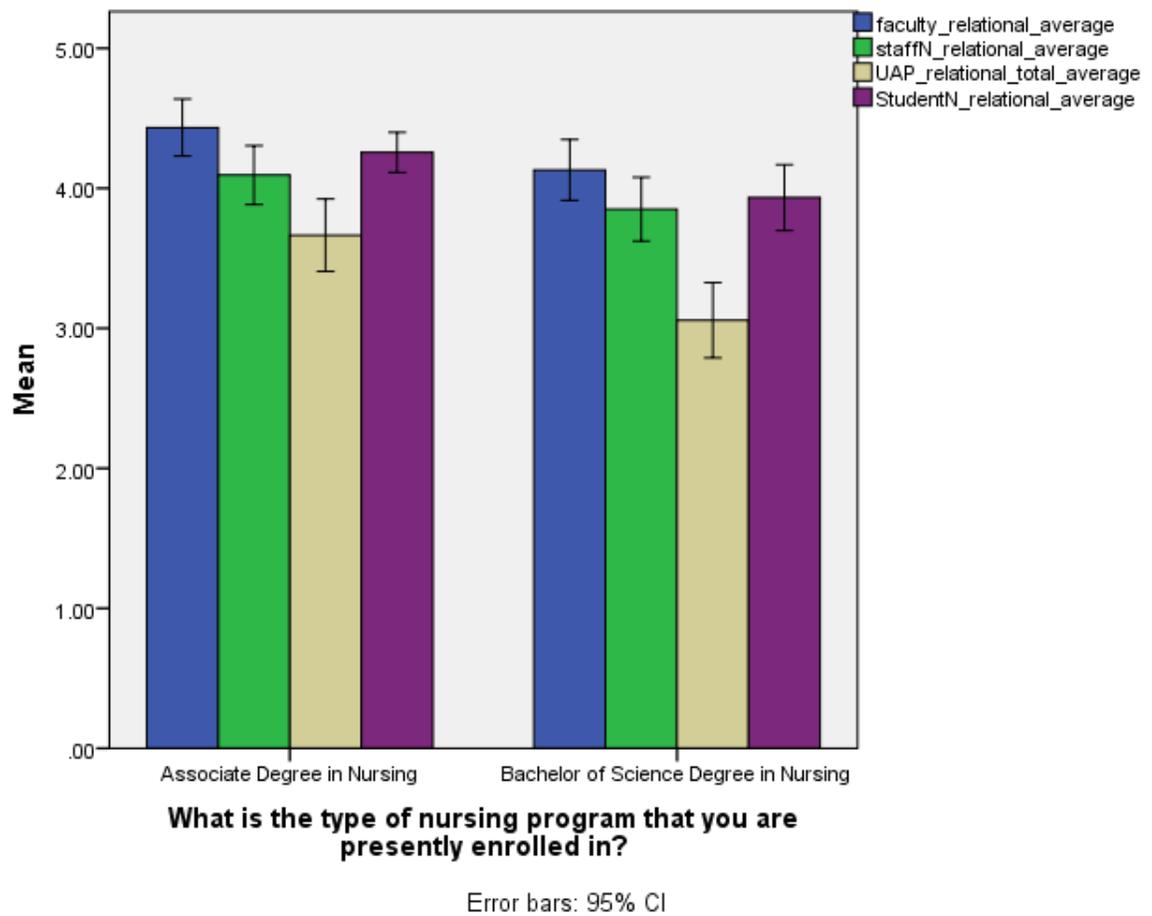


Figure 7. Relational coordination score: Comparison by degree type.

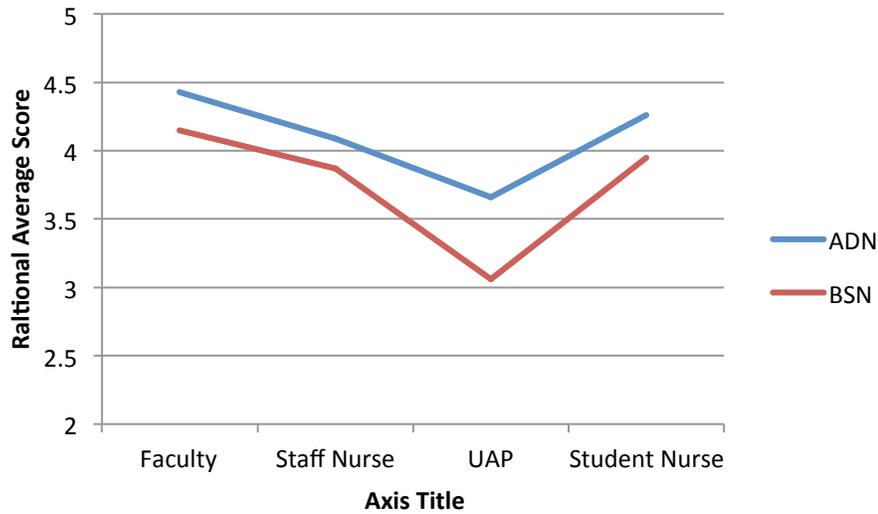


Figure 8. Degree types and relational coordination score.

Qualitative Analysis

Data were gathered for analysis via an online survey (see Appendices A and B). This section presents the findings from the open-ended question that was asked at the end of the survey to elicit additional information regarding the experience of being on a hospital unit. The question asked what it was like being a nursing instructor or nursing student on the particular hospital unit the participant was serving on. Twelve nursing instructors and 73 students responded to the question. Initially, participant responses were taken from Survey Monkey and classified into categories based on demographic information including role and learning environment (see Table 14).

Table 14

Participant responses by role and clinical environment

Participant	Traditional	Dedicated Educational Unit	Precepted
Faculty	<p>1. This unit welcomes students, and the staff is supportive. It has been a good learning experience for students. At times it is a great experience with the majority of nurses and also with the unit managers.</p> <p>2. At times challenging, given the fact staff nurses are so busy. In an effort to allay the situation, faculty at times attempted unsuccessfully to work with staff.</p> <p>3. There is one RN in particular on this unit who is an excellent nurse, but she takes over the care/assessments of the patients assigned to the students. Attempts to talk with her are unsuccessful. She is not "student friendly," so I try to avoid working with her.</p> <p>4. It is a mixed bag. I think sometimes the nurses try to be welcoming and sometimes I feel like an intrusion. I don't think they realize my expertise in this clinical area because I am too new for them.</p> <p>5. Because I am an employee on this clinical unit, it is at times difficult for regular staff to realize that I am present as a clinical faculty member and not as a staff nurse. For the most part I am well accepted, but sometimes they want me to take an assignment along with working with the students. Some staff nurses are welcoming to nursing students and other staff nurses turn a cold shoulder</p>	<p>1. It has been a good experience to work with staff that understand the concept of a designated education unit.</p> <p>2. I see a great deal of effort made on behalf of the student experience.</p> <p>3. Much respect and professionalism exists between team members.</p> <p>4. Ongoing relationship with this unit aids in comfort and positive experiences on the unit.</p> <p>5. Excellent teamwork with the staff RN's in planning each day and the following week.</p>	<p>1. The nurses precepting the students are generally engaging and open to talking about the students' experience and the patients they are assigned to.</p>

	<p>when I arrive with the students.</p> <p>6. Staff nurses and management are very supportive of me as an instructor and the students I supervise. UAP seem to like working with students, but have at times tried to have students do things their way (bathing/toileting, etc.), which I do not support. Most students felt welcomed by staff (nurses and UAP) and were able to learn from them.</p>		
Student	<ol style="list-style-type: none"> 1. Attempts to talk with her were unsuccessful and she is not student-friendly. 2. Communication was often frantic, often chaotic, often terrifying due to the complexity and the lack of knowledge and the overwhelming amount of information that the student nurse has to learn. 3. It was overwhelming for faculty when the students are taking on larger assignments, but luckily the staff are more than willing to support the faculty and answer questions. 4. My instructor was rarely available to me due to being responsible for too many students. 5. Sometimes the nurses try to be welcoming, and sometimes I feel like an intrusion. 6. The staff nurses are busy. 7. Nurses can be very good with students or extremely rude. I've heard nurses yelling very loudly at students in the hallway where patients, staff, and family can hear. 8. You hope you get a good nurse for the day—one that includes you, not ignores you. 9. Sometimes staff nurses 	<ol style="list-style-type: none"> 1. The communication between students and nurses is very good. 2. This active involvement is key to teaching the critical thinking and critical communication roles of the nurse. 3. The DEU has made me more confident with my technical skills as a nurse and has given me the opportunity to apply the knowledge I learn in the classroom. I feel like I am making connections between lecture and clinical that some of my peers not in a DEU do not always get. 4. I was exposed to many experiences, but most were because I took the initiative to ask for opportunities. You have to advocate as a student for what you want to get out of the experience. 5. Staff were supportive and making a great deal of effort on behalf of the student. 6. Much respect and professionalism exists between team members in the DEU. This ongoing relationship aids in comfort and positive experience on the unit. 7. The DEU helped me to grow as a nurse and that the staff were very willing to answer my questions. 	<ol style="list-style-type: none"> 1. Generally engaging and open to talking with students about the experience and patients that they are assigned to. 2. Every day I felt lucky to be spending my internship with this warm and hard-working group. 3. My opinion and assessment were respected and I was included as a part of the healthcare team. 4. This was by far the best experience. 5. I was trained with respect and as an adult learner. 6. Great experience, great instructor who was very helpful, connected to today's nursing role and knowledgeable. 7. Working one-on-one with a staff nurse enhanced the student's knowledge and confidence. 8. I didn't feel that the UAP respected my role as a care provider, nor did my preceptor appropriately moderate between us.

	<p>are receptive to student nurses and view them as helpful, but other times they view students as an additional assignment.</p> <p>10. I am a bit terrified every time I have to attend clinical. I am often intimidated by the nurses, am talked down to, talked to disrespectfully, and certainly not valued by the nursing staff.</p> <p>11. Most of the nurses I've worked with appear to look at me as a distraction, a pain, etc.</p> <p>12. It's hard to be a student nurse in a hospital unit.</p> <p>13. The staff nurses were consistently hostile and almost never worked with students to create patient goals and coordinate care.</p> <p>14. Felt like I was a part of the team and the nurses were very helpful.</p> <p>15. Luckily I had an excellent nursing instructor, but the constant staffing issues impede patient care.</p> <p>16. Exciting and terrifying. I felt I had good direction from my clinical instructor, but also that the staff nurses felt that we mostly got in their way.</p> <p>17. My fellow peer nursing students on the floor helped me to reaffirm my confidence and decision-making skills.</p> <p>18. Working with student nurses is the best way for me to learn because we are all in the same boat.</p>	<p>8. I learned most of what I know during this clinical rotation.</p> <p>9. I can't say enough about how important this experience was in forming me as a nurse as well as encouraging me to remain in nursing.</p>	
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After categorizing the responses by role and clinical environment, coding of the responses was completed in three phases: describing, interpreting, and creating patterns. In the descriptive coding stage, objective characteristics of the phenomenon were used to

classify the data. During interpretive coding, the concepts or themes were revisited to see how they related to other areas of data. Finally, in pattern coding, there was analysis of the relevance of similarities and differences in the concepts or themes across the dataset. Participant responses were then combined into descriptive categories noting a positive or negative experience. These experiences were totaled and interpreted (see Table 15).

Table 15
Descriptive and interpretive coding

Descriptive Examples	Number of Participants Who Had Similar Responses	Interpretive
Instructors stretched out thin, pulled in a million directions; did not focus on the students' needs; having to wait for the instructor to do anything resulted in missed learning opportunities	6	Overwhelming and challenging experience for instructors from the students' perception Forgiveness and tolerance Too much workload for instructors
Helpful and supportive instructor	3	Relationship with instructor
Crazy amounts of busy paperwork	1	Did not value paperwork
Staff respectful and appreciative, encouraging, supportive, good resources, and receptive to questions Nice place to work	17	Respectful and communicative
DEU was a great approach to being a student nurse.	1	The type of learning environment mattered
Preceptors helped me to grow as a nurse	1	Working closely with someone can create a powerful bond
Staff consistently hostile, barely spoke, intimidating, and offered no guidance or respect	9	Lack of respect and communication
Lack of communication between the staff and students	1	Infrequent communication
Understaffed and the nurses were overwhelmed and unavailable	1	Feeling left out; lack of communication possibly due to understaffing and a reference to the environment.
UAP and staff nurses were glad that we were there to lessen their load	2	Felt like part of the team; Included and help appreciated because of understaffing. Again a reference to the environment.
UAP were difficult to work with and not willing to help	1	Task interdependencies can cause conflict. Lack of understanding of roles

Relationships improved with two rotations on the same unit	2	Ongoing relationships enhanced the experience. Educational structure created repeated encounters.
Good experience because the nurses had attended the same college and had the same instructors	1	Familiarity and consistency. Repeated exposure
Difficult to transition from CNA to student	1	Role expectations Changes in roles can cause problems

Finally, patterns were identified (see Table 16). Open coding on the data was performed by the primary researcher on all responses with the help of the ATLAS.ti7 qualitative software in order to develop a detailed understanding of the perception of RC for student nurses and nursing faculty. Coding was verified by an experienced nurse researcher.

Table 16

Patterns

Relationships and Communication

- The relationships and communication influenced the student learning
- The type of clinical environment affected the relationships and communication and, in turn, the student learning

Repeat Exposure

- Repeated clinical experiences in the same settings with the same clinical staff enhanced the learning environment

Overload

- Overwhelmed and overworked nurses and faculty in traditional settings
- This overload affected the nurses' and faculty's communication with students and diminished the students' learning

Mixed Bag

- Traditional setting was described as a "mixed bag" with high variability
 - This "mixed bag" included high diversity in the quantity and quality of the communication and relationships
-

Subthemes and themes that emerged in the coding process are presented here. Subthemes that impacted the students' learning included the unit environment, the faculty and staff nurse workload, and the number of experiences on the same unit. These subthemes resulted in the students' describing very different experiences regarding communication and relationships with other healthcare providers. The two major themes that emerged were communication and relationships.

The next aspect of the qualitative analysis was to explore the data from the open-ended question to inform the research questions.

Answers to Research Question 1

1. What is the student nurse's experience and perception of relational coordination with peers, staff nurses, unlicensed assistive personnel (UAP), and nursing faculty while participating in a traditional, precepted, or dedicated educational unit (DEU) clinical environment in a hospital setting?

Communication

Traditional unit. Students' experience with communication varied widely. Students on a traditional unit, however, were much more likely to describe negative communication interactions with staff and UAP. Eight students described completely avoiding staff nurses on traditional units because "attempts to talk with her were unsuccessful and she is not student-friendly." Another student opined that communication was "often frantic, often chaotic, often terrifying due to the complexity and the lack of knowledge and the overwhelming amount of information that the student nurse has to learn."

Students also expressed difficulty trying to engage the faculty member due to how busy she was. One student felt that “it was overwhelming for faculty when the students are taking on larger assignments, but luckily the staff are more than willing to support the faculty and answer questions.” Another student stated that while “nursing faculty are very supportive, they can occasionally lack an understanding of what the student nurse is doing and what their goals are for their patient because they are busy with so many students.” Another student said this: “My instructor was rarely available to me due to being responsible for too many students.” Clearly, students felt neglected by faculty, even while understanding how busy the faculty member was.

Precepted experience. Students spoke positively about communicating with preceptors. Students working with preceptors felt that they were “generally engaging and open to talking with students about the experience and patients that they are assigned to.”

Dedicated educational unit. Students (n = 12) generally spoke positively about the communication on a DEU. The students noted that in the DEU “the communication between students and nurses is very good.” They noted as well that “this active involvement is key to teaching the critical thinking and critical communication roles of the nurse.” Another student made this observation:

The DEU has made me more confident with my technical skills as a nurse and has given me the opportunity to apply the knowledge I learn in the classroom. I feel like I am making connections between lecture and clinical that some of my peers not in a DEU do not always get.

One student felt that being active as a learner was key to a successful experience: “I was exposed to many experiences, but most were because I took the initiative to ask for opportunities. You have to advocate as a student for what you want to get out of the experience.”

Students' experiences varied in the three types of clinical environments. Students in precepted and DEU experiences expressed that they had better communication with nurses than did the students in traditional units. The students reported that this improved communication in precepted and DEU experiences resulted in a more positive learning experience.

Relationships

Traditional units. Students expressed the importance of developing a positive relationship with staff on the unit in order to have a successful learning experience. However, in the traditional units the experience was more of a "mixed bag." One student wrote, "Sometimes the nurses try to be welcoming and sometimes I feel like an intrusion." Students also expressed a great deal of concern about "how busy the staff nurses are" on the unit. "Nurses can be very good with students or extremely rude. I've heard nurses yelling very loudly at students in the hallway where patients, staff, and family can hear." As another student stated, "You hope you get a good nurse for the day—one that includes you, not ignores you." And another observed, "Sometimes staff nurses are receptive to student nurses and view them as helpful, but other times they view students as an additional assignment."

Students in traditional units also expressed emotional distress because of the way they were treated in clinical. One noted that "I am a bit terrified every time I have to attend clinical. I am often intimidated by the nurses, am talked down to, talked to disrespectfully, and certainly not valued by the nursing staff." Another said that "most of the nurses I've worked with appear to look at me as a distraction, a pain, etc." And another observed, "It's hard to be a student nurse in a hospital unit." The survey revealed,

in general, that the experience for students in a traditional learning environment was often negative and impeded the learning objectives.

Students in the traditional environment were also aware that the lack of a positive relationship with staff nurses impeded patient care. As one student said, “The staff nurses were consistently hostile and almost never worked with students to create patient goals and coordinate care.”

While the majority of these students expressed a negative experience, one student “felt like I was a part of the team and the nurses were very helpful.” Given the nature of the survey, the researcher could not follow up on any comments. It would have been interesting though to determine what it was about this student that resulted in a positive experience in the face of so many negative experiences.

Several students expressed the necessity of having a nursing instructor who could moderate the complexities of the nursing unit. As one observed, “Luckily I had an excellent nursing instructor, but the constant staffing issues impede patient care.” And another, “Exciting and terrifying. I felt I had good direction from my clinical instructor, but also that the staff nurses felt that we mostly got in their way.”

Some students noted that they were supported by one another and that this support had helped them to be successful. “My fellow peer nursing students on the floor helped me to reaffirm my confidence and decision-making skills.” Another observed that “working with student nurses is the best way for me to learn because we are all in the same boat.”

Precepted experience. Most students developed positive relationships during their precepted experience. One reported that “every day I felt lucky to be spending my

internship with this warm and hard-working group.” It was important for students to be valued and accepted as contributing members of the healthcare team. As one student said, “My opinion and assessment were respected and I was included as a part of the healthcare team.” Students also noted that being with a preceptor “was by far the best experience.” One student reported that “I was trained with respect and as an adult learner.”

Students also valued the current knowledge that the preceptor had. “Great experience, great instructor who was very helpful, connected to today’s nursing role and knowledgeable.” Working one-on-one with a staff nurse enhanced the student’s knowledge and confidence. However, another student noted the opposite: “I didn’t feel that the UAP respected my role as a care provider, nor did my preceptor appropriately moderate between us.”

Dedicated educational unit. Students described staff nurses on the DEU as “supportive and making a great deal of effort on behalf of the student.” Again, feeling accepted as a contributing team member enhanced the experience of many students. One reported that “much respect and professionalism exists between team members” in the DEU. This student went on to note that “this ongoing relationship aids in comfort and positive experience on the unit.”

Other students noted that they had more opportunity to do things on the DEU. One student said that the experience on the DEU “helped me to grow as a nurse” and that the staff were “very willing to answer my questions.” Another reported, “I learned most of what I know during this clinical rotation.” And another concluded that “I can’t say

enough about how important this experience was in forming me as a nurse as well as encouraging me to remain in nursing.”

Summary of Qualitative Analysis to Research Question 1

The students’ experience on a hospital unit varied. While it was possible to have a positive experience on a traditional unit, based on these survey results, it was a mixed bag and not likely predictable or consistent. Harsh, ineffectual, and dismissive communication often by some harried staff nurses resulted in students feeling at best ignored and at worst frightened and intimidated. This inconsistency was described as very anxiety provoking for students. Students recognized that the busyness of the unit contributed to this situation. Students also felt that, because the instructor was so busy, they were often left on their own to deal with these challenges.

Conversely, students in DEUs and those working with preceptors consistently expressed positive feelings toward these experiences. Working closely over a period of time with a trusted, supportive, and respected other allowed the students to develop confidence in their ability to function as a nurse.

Answers to Research Question 2

2. What is the nursing faculty’s experience and perception of relational coordination with students, staff nurses, UAP, and other nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

Communication and Relationships

Due to the limited number of faculty responses, both of these themes will be discussed together.

Traditional unit. In general, faculty were much more likely to express positive feelings about working with the staff in traditional units than were the students. One faculty noted, “This unit welcomes students, and the staff is supportive. It has been a good learning experience for students. At times it is a great experience with the majority of nurses and also with the unit managers.”

However, faculty also expressed concerns about how busy the staff were. “At times challenging, given the fact staff nurses are so busy.” In an effort to allay the situation, faculty at times attempted unsuccessfully to work with staff. One faculty member made this observation:

There is one RN in particular on this unit who is an excellent nurse, but she takes over the care/assessments of the patients assigned to the students. Attempts to talk with her are unsuccessful. She is not "student friendly," so I try to avoid working with her.

Faculty members also described feeling less than respected by the staff. One faculty reported the following:

It is a mixed bag. I think sometimes the nurses try to be welcoming, and sometimes I feel like an intrusion. I don't think they realize my expertise in this clinical area because I am too new for them.

Additionally, faculty who were employed on the unit as a staff nurse faced additional role-conflict challenges. One faculty member made this observation:

Because I am an employee on this clinical unit, it is at times difficult for regular staff to realize that I am present as a clinical faculty member and not as a staff nurse. For the most part I am well accepted, but sometimes they want me to take an assignment along with working with the students. Some staff nurses are welcoming to nursing students and other staff nurses turn a cold shoulder when I arrive with the students. Staff nurses and management are very supportive of me as an instructor and the students I supervise. UAP seem to like working with students, but have at times tried to have students do things their way (bathing/toileting, etc.), which I do not support. Most students felt welcomed by staff (nurses and UAP) and were able to learn from them.

Precepted unit. The nurses precepting the students are generally engaging and open to talking about the students' experience and the patients they are assigned to. However, faculty response to this question was limited.

Dedicated educational unit. Faculty described the DEU as a positive learning environment. One reported that "it has been a good experience to work with staff that understand the concept of a designated education unit." Faculty noted the teamwork and professionalism that exists on the DEU. As one faculty member said, "I see a great deal of effort made on behalf of the student experience."

One faculty observed that "much respect and professionalism exists between team members." And another noted that "Ongoing relationship with this unit aids in comfort and positive experiences on the unit." This reinforces the pattern of repeated encounters as an influence on the quality of the learning experience on the unit.

The positive experience of working with students on the DEU was summarized by another faculty member this way: "Excellent teamwork with the staff RN's in planning each day and the following week."

Summary of Qualitative Analysis to Research Question 2

While faculty, like students, also expressed concern about negativity on the traditional units, their observations were more positive of the staff nurses overall than those reported by the students. Faculty mentioned some communication and relationship difficulties on traditional units that went unresolved; however, they did not describe those experiences. Faculty did describe the unpredictability and mixed bag of experiences that could occur on the traditional unit. Faculty also described lack of predictability in respect on traditional units and role conflict.

Faculty working in precepted and DEU experiences spoke consistently favorably about these units. They noted the necessity for and existence of respect for students and good communication that enhanced teamwork and professionalism and led to a more predictable positive environment for students.

Answers to Research Question 3

3. Is there a difference in the experience and perception of relational coordination for student nurses interacting with peers, staff nurses, UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

The qualitative data indicated that for these students there was a difference in the experience and perception of relational coordination for student nurses interacting with peers, staff nurses, UAP, and nursing faculty while participating in a traditional, precepted or DEU clinical environment in a hospital setting. Although some students described supportive and collegial experiences in the traditional units, many student nurses assigned to traditional units often felt at best ignored and at worst frightened and intimidated. Conversely, students assigned to preceptors or DEUs experienced support and collegiality. The traditional units were at best unpredictable and inconsistent, and the precepted and DEU experiences were predictably supportive, respectful and enhanced their learning.

Answers to Research Question 4

4. Is there a difference in the experience and perception of relational coordination for associate and baccalaureate degree student nurses interacting with peers, staff nurses,

UAP, and nursing faculty while participating in a traditional, precepted, or DEU clinical environment in a hospital setting?

The responses to the open ended questions were also categorized by the students' degree type that they were pursuing. In this sample, there was a difference in the experience for associate and baccalaureate degree student nurses interacting with peers, staff nurses, UAP, and nursing faculty while participating in a traditional clinical environment in a hospital setting. Associate degree nurses were more likely to report a positive experience on a traditional unit than baccalaureate degree nurses. One ADN wrote "many of the nurses that I worked with attended the same college and had the same professors that I have now." The student felt that this allowed the nurse "to understand my goals and to further advance my skill set." Another ADN student had been on the same traditional unit for two semesters. She stated that "being on the same unit was essential to being so successful." Another said, "There was no adjustment period and the nurses and other staff know who we were." Baccalaureate degree students reported that "the staff didn't want students and didn't know what we were allowed to do" and "I had staff that were not receptive of me or did not fully include me in the care of their patient."

The experience of associate and baccalaureate degree student nurses interacting with peers, staff nurses, UAP, and nursing faculty on precepted and DEUs were similar. Positive statements from both ADN and BS students included these statements: "We felt part of the unit." "It was a great approach to being a student nurse." "Having just one other student with my preceptor meant a whole lot more attention and having the opportunity to sit down and discuss patients, as well as perform tasks." These responses indicated that in these programs, the associate degree student clinical placements

included more opportunities for repeated encounters between the students and faculty, staff nurses, and UAP. These repeated encounters were associated with better learning experiences.

Because there was only one AD and one BS program represented in the sample, this analysis may represent the differences in the individual programs rather than the differences of the level of education.

Summary of Qualitative Analysis Related to Research Question 4

Both types of degree students reported a more positive learning environment in a DEU and precepted unit than on a traditional unit. However, some BS and ADN students did report a positive learning environment on a traditional unit. The positive experience reported by ADN students was attributed to long-term relationships between the nursing instructors and staff and between the students and staff. The relationships that developed over this longer period of time, resulted in a more accepting and supportive learning environment.

Answers to Research Question 5

5. Is there a difference in the experience and perception of relational coordination for nursing faculty interacting with students, staff nurses, UAP, and other nursing faculty participating in traditional, precepted, or DEU clinical environment in a hospital setting?

Similar to the students' experience, faculty experience on a traditional unit was a mixed bag. However, faculty were more likely to have expressed positive opinions than students. Faculty commented that "the unit welcomes students and the staff is supportive." "The staff and management are also very supportive to me as an instructor." However, faculty also expressed concern about how busy staff were and how that made

the experience challenging. Faculty on DEUs and precepted units reported, “much respect and professionalism that exists between team members.” It is also important to note that faculty noted that “an ongoing relationship with this unit aids in comfort and positive experiences.”

Summary of Qualitative Analysis Related to Research Question 5

Faculty in a traditional unit also faced challenges with staff nurses making it difficult, at times, to have a good experience on the unit. Faculty, generally, had more positive comments than students, when describing experiences on traditional units. Faculty comments regarding DEU and precepted experiences were all positive. Unlike the traditional units, there was agreement between faculty’s and students’ comments about the precepted and DEU units.

CHAPTER 5

DISCUSSION

The purpose of this study was to describe and measure student nurses' and nursing faculty experiences and perceptions of relational coordination (RC) during their most recent clinical experience. The key quantitative and qualitative findings of the study as well as the limitations, strengths, and implications for nursing practice, education, policy, and future research are presented and discussed in this chapter.

Relational Coordination Within and Across Role Type

The mean RC score reported by nursing faculty for their own workgroup is 3.42. Less than 4 is considered weak relational coordination for within group scores. The mean RC score reported by nursing students for their own workgroup is 4.08. Typical RC scores for within groups are 4 - 4.5. This may indicate an area where leaders in nursing education could create more structured opportunities for communication among nursing faculty.

The overall RC between UAPs and all subjects (students' mean = 3.33 and faculty mean = 3.12) was low. Average between group scores are from 3.5 to 4.0. For both the faculty and students RC scores with UAPs are low. In actual practice, nurses and UAPs are required to work together and communicate frequently. These low scores in faculty and students indicate a missed opportunity for nursing students to develop important relationships necessary in clinical practice.

Differences Across Clinical Environments

The results from a one-way analysis of variance revealed a significant difference in the student report of RC scores for both UAP ($F = 5.34, p = .007$) and staff nurses ($F = 4.02, p = .022$) by clinical environment in traditional and DEU settings. Student nurse reported RC score was higher for UAP on traditional units (see Table 10). Student nurse reported RC score was higher for staff nurses on the DEU. An analysis of the RC scores for student nurses in the precepted experience was not performed due to a low sample size.

Coding of the qualitative responses revealed subthemes and themes. Subthemes that emerged in the coding process that impacted the students' learning included the unit environment, the faculty and staff nurse workload, and the number of experiences on the same unit. These subthemes resulted in the students' describing very different experiences regarding communication and relationships with other healthcare providers. The two major themes that emerged were communication and relationships.

In the student comments, effective communication and more positive relational experiences were more often described in the DEU and precepted units, while students in the traditional unit reported a mixed bag of experiences with other healthcare providers.

While faculty experiences were similar to the student responses, they did report slightly more positive experiences than the students reported, in the traditional unit. The small number of faculty participants prohibited a quantitative analysis of faculty RC scores.

Differences Across Degree Type

The student-nurse-degree type was also found to significantly impact RC scores. Results of independent t-tests identified significant differences in both UAP and student nurse RC scores based on student-nurse-degree type. Nurses pursuing a BS reported lower RC scores with other student nurses than nurses pursuing an ADN ($p = .034$). Similarly, student nurses pursuing a BS reported lower RC scores with UAP than student nurses pursuing an ADN ($p = .002$). Since there was only one school in each of the degree types the differences identified in this study may be attributable to the structural differences in the two schools, and not related to the type of degree program. It would be interesting to explore this difference in a sample of multiple schools.

Qualitative responses by degree type indicated that both groups of students had relatively negative things to say about the traditional unit and more positive comments about the DEU and precepted units. Some ADN students did report very positive experiences on a traditional unit when they had been on the unit for two consecutive semesters and when staff nurses on the unit were graduates of their school. This may be due to the repeated encounters between the clinical setting and the school, rather than the degree type.

Limitations of the Study

The results from this study must be interpreted in light of several limitations. First, the recalling and retelling of past experiences depends upon an individual's ability to recall specific aspects of a past experience and his/her perception of that experience. Therefore, it was assumed that all accounts were accurate as described by the individual. Second, utilizing the Internet was also a limitation because it did not allow for assessment

of nonverbal behavior. Third, this study was also limited by the recruitment of a convenience sample of faculty and students who volunteered to participate. This selection of participants from only two schools may also have limited the potential breadth of stories told. The differences between the degree types may be attributable to differences between the two schools, as there was only one school in each degree type. Fourth, an asymmetrical matrix was used in this study. Therefore, RC scores were obtained only from two out of the four groups. Lastly, faculty and students who volunteered for the study may have had a different view of themselves in their respective roles as compared to those who did not participate.

Strengths of the Study

The differences across the clinical setting type represented the three types of learning environments, across two schools with different degree types. Adding an open-ended question to a quantitative survey tool permitted the researcher to view the phenomena of interest from a qualitative and quantitative perspective. This method provided additional insight into the phenomena being studied. This allowed the subjects to add insights and comments that were not explored in the RC survey questions. Two themes that emerged from the qualitative data that were not present in the RC survey were the influence of the workload for staff nurses and faculty; and the mixed bag experience on the traditional clinical unit.

Implications

The implications for nursing practice, education, policy, and future research related to the outcomes of this study will be explored in the following sections.

Nursing Practice Implications

Providing healthcare in the U.S. is a complicated and complex process that requires healthcare professionals and students to be prepared to coordinate and implement patient care that is safe, timely, effective, efficient, equitable, and patient centered (Committee on Quality of Health Care in America, Institute of Medicine, 2001). This coordination of care requires the effective use of timely, accurate, and problem-solving communication (Gittell, 2002a, 2002b). Studies have shown that, when there is good communication between nurses and physicians, patient outcomes improve (Arford, 2005; Baggs et al., 1999; Carroll, 2007). In addition, a growing body of evidence indicates that poor communication between healthcare providers significantly contributes to decreased safety in the increasingly complex and technological U.S. healthcare system (Leape, 1994; Committee on the Work Environment for Nurses and Patient Safety, Institute of Medicine, 2004; Tammelleo, 2001, 2002). The Institute of Medicine Report, *Crossing the Quality Chasm: A New Health System for the 21st Century* (Committee on Quality of Health Care in America, Institute of Medicine, 2001) identifies a lack of effective coordination and communication between healthcare providers as one of the most serious problems affecting patient care in the U.S. today. Gittell (2009) describes relational coordination as an effective way to improve communication and collaboration in healthcare settings. The theory of relational coordination proposes that participants in these kinds of work environments should engage in frequent, timely, accurate, and problem-solving communication, supported by relationships of shared knowledge, shared goals, and mutual respect.

This study identified that student nurses experience both effective and ineffective communication with nursing faculty, staff nurses, and unlicensed assistive personnel in

various hospital clinical environments. This was often attributed by students to the fact that staff were extremely overburdened and understaffed. Effective communication with staff nurses was more commonly experienced by student nurses in precepted or DEU clinical environments. Students did describe developing positive relationships with staff nurses and UAP in traditional clinical environments when they were on that same unit for two consecutive semesters and when the staff on that particular unit was also a graduate of the student's nursing school.

Nursing students are future employees. It would make sense from a business perspective to provide student nurses with a positive experience while in a healthcare facility. Additionally, if the students' perception of overburdened staff is accurate, then healthcare administrators would be wise to rectify that situation in order to retain qualified staff.

Nursing Education Implications

Nurses receive little formal education to enhance their communication skills. What education they do receive is in a lecture format and focuses primarily on interactions with patients rather than with the healthcare team (Kalisch et al., 2010). Within the healthcare setting, Gittell (2009) studied the experience of relational coordination among nurses, social workers, physicians, and case managers. Two important participants in the healthcare team who had not been studied up to this point are student nurses and nursing faculty. As future providers of care in interdependent, time-restricted, and ever-changing work environments, nursing students must be prepared to communicate effectively with all members of the healthcare team. Since student nurses in this study reported that increased time and familiarity with staff improved

communication and relationships, nurse educators should develop educational models that increase that opportunity. While DEU and precepted clinical environments are models that increase that opportunity, they cannot be used for every clinical experience. Therefore, it is an important finding of this study that students on traditional units did have positive experiences when they were on the same unit for consecutive semesters. Nursing faculty should develop educational experiences that provide this opportunity.

Nursing Policy Implications

Policy makers require evidence-based recommendations to proposed change. Historically and by tradition, not evidence, the education of healthcare professionals has been carried out in isolation by individual healthcare disciplines (Miller et al., 2009). This silo format for education has limited the interaction between healthcare providers in their student roles. As a result, students often have little understanding of their colleagues' roles and may lack appreciation for the uniqueness and importance of each provider's contribution to patient care. Additionally, the educational emphasis has been on knowledge and skill acquisition with little attention being given to the development of expertise in coordination, collaboration, and communication (Miller et al., 2009). Improving the exchange of information between healthcare providers has been cited as a key component to preventing medical errors and promoting a safe patient environment (Upenieks et al., 2009). Furthermore, collaboration among team members enhances employee job satisfaction, fosters organizational commitment, heightens productivity, and boosts morale. Although the benefits of improved communication and collaboration among healthcare providers is becoming more evident, barriers still exist that impede improved communication and collaboration from becoming a reality. In particular, status

hierarchy in healthcare settings, the fast-paced nature of today's healthcare system, reduced patient lengths of stay, higher patient acuity, and more patients are some of the challenges to making this a reality (Benner et.al, 2010; Gittel, 2009). This study indicates that both nursing faculty and student nurses are experiencing ineffective communication in some learning environments. Policies should be developed that establish guidelines for effective and respectful communication.

Future Nursing Research

Numerous aspects of relational coordination require further investigation. Additional research should obtain RC scores for all four participant groups. The use of a symmetrical matrix to study student nurses, nursing faculty, UAP, and staff nurses would allow for between-group comparisons of RC scores. Also, structured interviews would provide an opportunity to gather more in-depth information about the participants' experiences, which could not be obtained in an online survey. Additionally, more research should be done utilizing larger sample sizes for students in both ADN and BS programs.

Conclusion

The purpose of this descriptive, exploratory study was to describe and measure student nurses' and nursing faculty experiences and perceptions of relational coordination during their most recent clinical experience in a hospital setting. This study contributes to the body of knowledge of relational coordination because nursing faculty and student nurses have not previously been asked to evaluate their experience with this phenomenon. Findings from this study indicate that participant clinical environments and degree program structure impact reported RC scores. These findings have implications

for practice, administrators, and faculty who wish to enhance the clinical learning environment for student nurses. Lastly, future areas of needed research are suggested to advance the body of knowledge about relational coordination.

APPENDIX A

STUDENT NURSE SURVEY

DIRECTIONS: Please complete the two parts of this survey by clicking in the appropriate box. There are 12 questions. The first part of the survey is demographic information. The second part of the survey is about your most recent clinical course in a hospital setting. Seven of these questions are multiple choice, and one is an open-ended question. All information will only be compiled as group statistics. Individual statistics will not be used when describing the results of this study. Your participation is completely voluntary and at any time in the process you can decide to not participate without any negative consequences.

* Required

PART 1 Question 1 * Gender

- Male
- Female
- Transgender

Question 2 * Age

- 19–22
- 23–26
- 27–30
- 31–40
- 41–50
- Greater than 50

Question 3 * What is the type of nursing program that you are presently enrolled in?

- Associate Degree in Nursing
- Bachelor of Science Degree in Nursing

Question 4 * If you are in a BS program what entry option are you in?

- Traditional
- Second Bachelor's
- Not Applicable

Question 5 * Please indicate which degrees, licenses, or certificates you hold.

- AD BS/BA MS/MA PhD DNP LPN

- CNA
- Other
- Not Applicable

PART 2

Question 6 * How frequently do you communicate with care providers in these groups about your patients?

	Never	Rarely	Occasionally	Often	Constantly
Nursing Faculty	<input type="radio"/>				
Staff Nurses	<input type="radio"/>				
Unlicensed Assistive Personnel	<input type="radio"/>				
Student Nurses	<input type="radio"/>				

Question 7 * Do care providers in these groups communicate with you in a timely way about your patients?

	Never	Rarely	Occasionally	Often	Always
Nursing Faculty	<input type="radio"/>				
Staff Nurses	<input type="radio"/>				
Unlicensed Assistive Personnel	<input type="radio"/>				
Student Nurses	<input type="radio"/>				

Question 8 * Do care providers in these groups communicate with you accurately about your patients?

	Never	Rarely	Occasionally	Often	Always
Nursing Faculty	<input type="radio"/>				
Staff Nurses	<input type="radio"/>				
Unlicensed Assistive Personnel	<input type="radio"/>				
Student Nurses	<input type="radio"/>				

Question 9 * When problems arise regarding the care of your patients, do care providers in these groups work with you to solve the problem?

	Never	Rarely	Occasionally	Often	Always
Nursing Faculty	<input type="radio"/>				
Staff Nurses	<input type="radio"/>				
Unlicensed Assistive Personnel	<input type="radio"/>				
Student Nurses	<input type="radio"/>				

Question 10 * How much do the care providers in these groups know about your role in caring for your patients?

	Nothing	Little	Some	A lot	Everything
Nursing Faculty	<input type="radio"/>				
Staff Nurses	<input type="radio"/>				
Unlicensed Assistive Personnel	<input type="radio"/>				
Student Nurses	<input type="radio"/>				

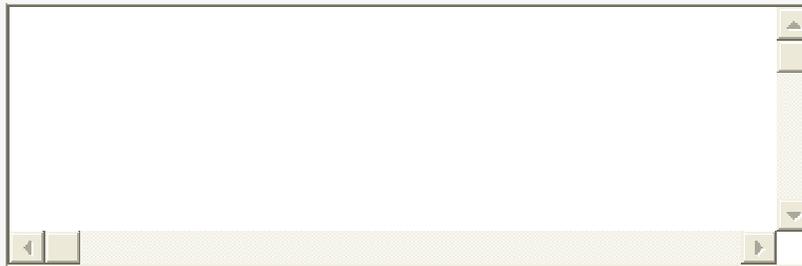
Question 11 * How much do the care providers in these groups respect the role you play in caring for your patients?

	Not at all	A little	Somewhat	A lot	Completely
Nursing Faculty	<input type="radio"/>				
Staff Nurses	<input type="radio"/>				
Unlicensed Assistive Personnel	<input type="radio"/>				
Student Nurses	<input type="radio"/>				

Question 12 * How much do the care providers in these groups share your goals for the care of your patients?

	Not at all	A little	Somewhat	A lot	Completely
Nursing Faculty	<input type="radio"/>				
Staff Nurses	<input type="radio"/>				
Unlicensed Assistive Personnel	<input type="radio"/>				
Student Nurses	<input type="radio"/>				

Question 13 * Please write a description of what it was like to be a student nurse on this hospital unit.



APPENDIX B

NURSING FACULTY SURVEY

DIRECTIONS: Please complete the two parts of this survey by clicking in the appropriate box. There are 12 questions. The first part of the survey is demographic information. The second part of the survey is about your most recent clinical course in a hospital setting. Seven of these questions are multiple choice, and one is an open-ended question. All information will only be compiled as group statistics. Individual statistics will not be used. Your participation is completely voluntary and at any time in the process you can decide to not participate without any negative consequences.

* Required

PART 1

Question 1 * Gender

- Male
- Female
- Transgender

Question 2 * Age

- 23–30
- 31–40
- 41–50
- 51–60
- Greater than 60

Question 3 * What is the type of pre-licensure nursing program that you are presently teaching in?

- Associate Degree in Nursing
- Bachelor of Science Degree in Nursing

Question 4 * If you are teaching in a BS program, what entry option do you teach in?

- Traditional

- Second Bachelor's
- Not Applicable

Question 5 * Please indicate your highest degree

- MS/MA
- DNP
- PhD • CNE • FAAN • ANEF
- Other • Not Applicable

PART 2

Question 6 * How frequently do you communicate with care providers in these groups about the patients that your students are caring for?

Never Rarely Occasionally Often Constantly

Nursing Faculty

Staff Nurses

Unlicensed Assistive Personnel

Student Nurses

Question 7 * Do care providers in these groups communicate with you in a timely way about your patients?

Never Rarely Occasionally Often Always

Nursing Faculty

Staff Nurses

Unlicensed Assistive Personnel

Student Nurses

Question 8 * Do care providers in these groups communicate with you accurately about your students and the patients that they are caring for?

Never Rarely Occasionally Often Always

Nursing Faculty

Staff Nurses

Unlicensed Assistive Personnel

Student Nurses

Question 9 * When problems arise regarding your students and the care of the patients, do care providers in these groups work with you to solve the problem?

Never Rarely Occasionally Often Always

Nursing Faculty

Staff Nurses

Unlicensed Assistive Personnel

Student Nurses

Question 10 * How much do the care providers in these groups know about your role in caring for your patients?

Nothing Little Some A lot Everything

Nursing Faculty

Staff Nurses

Unlicensed Assistive Personnel

Student Nurses

Question 11 * How much do the care providers in these groups respect the role you play in caring for your patients?

Not at all A little Somewhat A lot Completely

Nursing Faculty

Staff Nurses

Unlicensed Assistive Personnel

Student Nurses

Question 12 * How much do the care providers in these groups share your goals for the care of your patients?

Not at all A little Somewhat A lot Completely

Nursing Faculty

Staff Nurses

Unlicensed Assistive Personnel

Student Nurses

Question 13 * Please write a description of what it was like being a nursing instructor on this hospital unit.

APPENDIX C
LETTER TO PARTICIPANTS

July 19, 2012

Dear Students and Faculty,

I am following up with you regarding your participation in my doctoral research study titled *Relational Coordination: The Perceptions and Experiences of Student Nurses and Nursing Faculty in a Hospital Setting*. This study is being done by Clare Lamontagne PhD(c), RN, CNE from the University of Massachusetts Amherst. You were selected to participate in this study because you are a student nurse or nursing faculty member who has completed a clinical rotation at Baystate Medical Center or Cooley Dickinson Hospital.

At this time I am requesting that you please complete the online survey that was previously sent to you. I would greatly appreciate it if you could complete this survey by July 28, 2012. I will be happy to send you another survey if I don't hear from you within 1 week.

If you have questions about this project or if you have a research-related problem, you may contact the researcher Clare Lamontagne at 413-545-5098 or clamonta@nursing.umass.edu. Additionally, if you would like to ask me questions in person I will be available at STCC in 20/308 on 6/25 from 0800-0830 and at UMass in Skinner room 112 on 6/26 from 0900-0930. If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

I thank you in advance for your participation in this study.

All the best,
Clare Lamontagne

APPENDIX D

TABULATION FOR STUDENT DEMOGRAPHICS

Age	Mean	Range
19–22		
23–26		
27–30		
31–40		
41–50		
Greater than 50		
	Frequency	Percent
Gender		
Female		
Male		
Transgender		
Learning Environment		
Traditional		
Precepted		
DEU		
Type of Nursing Program		
ADN		
BS		
Other Degrees, Licenses or Certifications		
AD		
BS/BA		
MS/MA		
PhD		
LPN		
CNA		

Other		
Number of Semesters Successfully Completed in the Nursing Program		
1		
2		
3		
4		
If BS, what entry option are you in?		
Traditional		
Second Bachelor's		

APPENDIX E

TABULATION FOR FACULTY DEMOGRAPHICS

Age	Mean	Range
23–26		
27–30		
31–40		
41–50		
51–60		
>60		
	Frequency	Percent
Gender		
Female		
Male		
Transgender		
Teaching Environment (If you teach in more than one environment please fill out a separate survey for each environment)		
Traditional		
Precepted		
DEU		
Type of Nursing Program		
ADN		
BS		
Highest Degree Earned		
MS/MA		
PhD		
DNP		

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