PRE-LICENSURE BACCALAUREATE NURSING STUDENTS' PERCEPTIONS
OF THEIR DEVELOPMENT OF CLINICAL REASONING

By

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ABSTRACT

The primary goal of the study was to explore the perceptions of pre-licensure baccalaureate nursing students related to their development of clinical reasoning while in nursing school. The objective was to use the data gathered to improve the methods and strategies for teaching clinical reasoning to pre-licensure baccalaureate nursing students in the hopes of better preparing new graduate nurses for providing safe and effective patient care. The study incorporated a descriptive phenomenological design utilizing one-on-one semi-structured interviews conducted with 18 participants, to gather data. Data were analyzed according to Giorgi's (1985) descriptive phenomenological method; the verbatim transcripts were then coded utilizing Saldana's (2012) method for first and second cycle coding.

Five themes were identified throughout the data including instructor characteristics, learning environment, progression of learning, importance of clinical reasoning, and best place to learn clinical reasoning. Nineteen subthemes were identified and supported with verbatim quotes from the participants. The voices of the participants added depth to the analysis and allowed for interpretation of the data from a holistic and caring perspective. Lincoln and Guba's (1985) methods for determining trustworthiness and rigor of the data were followed.

Results of the study indicated that the participants believed their nursing program adequately prepared them to use clinical reasoning in practice. Analysis of the participants' words led to the discernment of implications for nursing education including that clinical reasoning should be promoted and facilitated by nursing faculty throughout nursing programs from the first semester to the last with an emphasis on student-centered teaching strategies. Continued exploration of nursing students' perceptions of their development of clinical reasoning is recommended to further enhance pre-licensure baccalaureate nursing students' preparation for practice.

CHAPTER 1

INTRODUCTION TO THE STUDY

This chapter includes the statement of the problem, the purpose of the study, and the qualitative research questions. The conceptual framework and the significance of the study are discussed. Assumptions and biases are presented followed by the definition of terms.

Identification of the Phenomenon of Interest

Patient safety and effective provision of patient care are essential goals of nursing care (North Carolina Board of Nursing, 2009). Positive patient care outcomes result from well-educated nurses who have the ability to clinically reason through both emergent and non-emergent patient care situations and make sound clinical judgments (American Association of Colleges of Nursing, 2008). Clinical reasoning is the process whereby nurses use clinical judgment and critical thinking to make decisions based on both knowledge and experience. Benner et al. (2010) discussed clinical reasoning as the ability for which student nurses strive through the course of clinical nursing education. It has been defined as “the ability to reason as a clinical situation changes, taking into account . . . patients’ trends and trajectories” (Benner et al., 2010, p. 85). According to Kuiper (2013), the prevention of adverse patient outcomes directly relates to clinical reasoning and the ability to recognize and treat patient

problems in a timely manner. Both knowledge and experience factor into the clinical reasoning abilities of expert nurses (Banning, 2008; Tanner, 2006). However, new graduate nurses enter the practice arena without the experience to inform their clinical judgments (Baxter & Rideout, 2006; Del Bueno, 2005; Su, Osisek, & Starnes, 2005; Tanner, 2006; Theisen & Sandau, 2013). Establishing a strong foundation for the development of clinical reasoning in nursing students is essential to ensure safe and effective delivery of patient care and positive patient care outcomes (Jensen, 2013).

With the current issues of nursing faculty shortages, a healthcare environment in flux, and, ongoing changes in healthcare related technology, nursing faculty and administrators have been challenged to quickly adapt to the changing times and produce nurses who are able to provide safe and efficient nursing care in varied healthcare settings. In order to prepare new graduates for practice in the current complex healthcare environment, teaching and learning strategies must be reviewed and reconstructed to provide new nurses with the tools necessary to create positive patient care outcomes. A major area of concern around clinical reasoning and why it must be emphasized in nursing programs is in the context of “failure to rescue” among new graduate nurses (Bland et al. 2009; Levett-Jones et al. 2010). Levett-Jones et al. (2010) define failure to rescue as the inability of new graduate nurses to recognize and act on cues from at-risk patients. They asserted the lack of proactive teaching and learning strategies in nursing schools aimed at developing and enhancing clinical reasoning led to new nurses’ inability to “detect impending patient deterioration

resulting in a ‘failure to rescue’” and ultimately in poor patient care outcomes (Levett-Jones, et al., 2010, p. 516). The Institute of Medicine (IOM) has called for transformation in nursing education to prepare the next generation of nurses to be lifelong, active learners able to adjust and change with the ever-changing healthcare environment (Institute of Medicine, 2011). “The paucity of evidence in nursing education and pedagogy calls for additional research and funding to ascertain the efficiency and effectiveness of approaches to nursing education, advancing evidence-based teaching and interprofessional knowledge” (Institute of Medicine, 2010, p. 198).

The National Council of State Boards of Nursing (NCSBN), in response to the IOM report, formed a committee to project future needs for nursing education. The committee concluded nursing education methods must be based on evidence of their efficacy (National Council of State Boards of Nursing, 2006). Coaching and mentoring students in the clinical environment were identified as a means by which to ensure nursing students gain the requisite comfort in the nursing role to be safe practitioners of care (National Council of State Boards of Nursing, 2006). Pedagogies based on students’ acquiring experience in real clinical situations with instructors providing evidence-based guidelines integrating clinical and classroom were supported by the NCSBN (National Council of State Boards of Nursing, 2009). Clinical education is essential for nursing students to make connections between theory and practice, and strategies to promote clinical reasoning in the clinical setting must be based on evidence of their efficaciousness (Khanyile & Mfidi, 2005). More research is needed related to

pedagogical approaches in the clinical, classroom, and simulation settings to improve student and ultimately, patient outcomes (Kuiper, 2013) and support must be garnered from nursing stakeholders.

The priorities for nursing education research set by the National League for Nursing (NLN) and approved by the NLN Board of Governors for 2012-2015 include, but are not limited to: (a) education-practice linkages, (b) domain specific knowledge, and (c) technology in nursing education (National League for Nursing, n.d.). Within the domain specific knowledge, the NLN suggested research into pedagogical strategies focused on the development of clinical reasoning and utilization of situated coaching to prepare nursing students for the realities of the clinical practice setting and to improve patient care outcomes (National League for Nursing, n.d.). The NLN emphasized the need to focus on student learning while supporting an environment for students in which “collaboration, understanding, mutual respect, equality, and acceptance of differences” are paramount (National League for Nursing, 2005, p. 4).

The American Association of Colleges of Nursing (AACN) released *The Essentials of Baccalaureate Education for Professional Nursing Practice* (Essentials) (American Association of Colleges of Nursing, 2008) to provide a framework, based on recommendations from various healthcare stakeholders, for the improvement of pre-licensure and registered nurse to baccalaureate (RN to BSN) nursing education. Nine essentials were delineated as the basic elements needed in nursing curricula to prepare nurses with the knowledge, skills, and attitudes needed for a generalist practice. Along with professionalism,

communication, and interdisciplinary teamwork, clinical reasoning was stressed as an important part of providing safe patient-centered care in every healthcare environment (American Association of Colleges of Nursing, 2008). The Essentials emphasized the need for graduate nurses' focus to be on lifelong learning and continual development of knowledge and skills that will lead to improved patient outcomes (American Association of Colleges of Nursing, 2008). Given the complexity of current nursing practice and the call by nursing stakeholders to improve the competence of entry level nurses and to strengthen approaches to educating nursing students, it is critical to examine clinical reasoning from the students' perspective and better understand their perceptions of what educational approaches support this critical skill.

Purpose of the Study

The purpose of this study was to explore baccalaureate nursing students' perceptions of their development of clinical reasoning and the facilitators that enhance and promote their ability to use clinical reasoning in providing safe and effective patient care.

Research Questions

Question 1:

What are pre-licensure baccalaureate nursing students' experiences with clinical reasoning throughout their nursing program?

Question 2:

What are pre-licensure baccalaureate nursing students' perceptions of facilitators in the development of clinical reasoning?

Question 3:

What are pre-licensure baccalaureate nursing students' perceptions of their use of clinical reasoning in delivering safe and effective patient care?

Conceptual Framework

Patricia Benner's Novice to Expert theory informed this study which was focused on undergraduate nursing students' experiences with the development of clinical reasoning. Benner's (1984/2001) theory is based on knowledge and skill acquisition and the part experience plays in attainment of expertise in clinical nursing practice. Included in the theory itself are specific implications for teaching and learning related to nursing education. As a framework for nursing education research, Benner's theory provides a foundation for application of theoretical nursing knowledge to practice. Specifically, the stages of skill acquisition and the requisite teaching and learning needs at each stage provide a conceptual basis for teaching clinical reasoning to pre-licensure nursing students.

Benner was influenced by the work of Heidegger, Kuhn, and Polanyi (Benner, 1984/2001) in the development of her theory based on the Dreyfus model of skill acquisition. Heidegger was a German philosopher whose existentialist philosophy influenced Benner's views on the importance of experience in building expertise (Benner, 1984/2001; Cash, 1995). The Heideggerian phenomenological approach (Darbyshire, 1994) Benner used in

conducting her study leading to theory development viewed nursing “as a human science, conducted by self-interpreting subjects (researchers) who are studying self-interpreting subjects (participants) who both may change as a result of an investigation” (Benner, 1984/2001, p. 171). Capturing the human element of nursing and the effect it has on the delivery of safe and effective patient care was integral to the development of Benner’s theory.

Polanyi and Kuhn influenced Benner with regard to the intuitive aspects of the theory and the knowledge nurses have of clinical situations and patient care related to their experience and what they have seen contextually in practice. Benner discussed the idea of knowing in nursing and the differences between “knowing that” and “knowing how” (p. 2) or the differences between theoretical knowledge and practical knowledge (Benner, 1984/2001). The knowing that of nursing is the theoretical basis of nursing practice grounded in the science of patient care. Polyani discussed tacit knowledge, which he described as the “conceptual and sensory information and images that can be brought to bear in an attempt to make sense of something” (Smith, 2003, para. 3). The knowing how is the perceptive knowledge nurses have gained through experience. “The clinician’s knowledge is embedded in the perceptions rather than the precepts” (Benner, 1984/2001, p. 43).

The basic underlying assumptions of Benner’s theory evolved from her educational and experiential background as a clinical nurse, educator nurse, and student of philosophy. The purpose of the Achieving Methods of Intra-Professional Consensus, Assessment, and Evaluation (AMICAE) study was to

examine experiential learning, skill acquisition, and knowledge development in the clinical nurse. Benner's approach, being grounded in the philosophies of Heidegger, Kuhn, and Polanyi, presumed experience was an integral part of the knowledge development leading to expertise. Benner assumed a logical step-by-step progression of skill acquisition for clinical nurses based on years of experience and situational contexts. A second assumption was, over time, the expert nurse developed an intuition regarding clinical decision-making, based on situational experiences, placing her ahead of the novice nurse who has no experience on which to base clinical judgments.

These assumptions by Benner have been discussed in the literature since publication of her theory and some dispute has arisen as to their acceptability and their grounding in science. English (1993) contended Benner's theory did not provide an adequate definition of what she described as expertise in clinical practice. Similarly, Gobet (2008) conjectured the specific delineation of stages in Benner's theory and the implication a nurse passed through each stage in a linear direction was a weakness in the theory. Gobet (2008) contended the pathway from novice to expert is much more complex than posited by Benner and the qualitative methods by which Benner collected data were not appropriate for scientifically determining the nature of expert practice. However, despite these criticisms, Benner's work has been useful in describing the process by which nurses gain clinical knowledge and expertise and is relevant for this study.

Benner based her book, *From Novice to Expert: Excellence and Power in Clinical Nursing Practice* (Novice to Expert) on the work of Stuart Dreyfus, a

mathematician, and Hubert Dreyfus, a philosopher, who studied the pathway of novice to expert with airline pilots and chess players (Benner, 1984/2001).

Benner (1984/2001) described three different aspects of skill acquisition as posited in the Dreyfus model:

- movement from reliance on abstract principles to the use of past concrete experience as paradigms;
- a change in learner's perception of the demand situation, in which the situation is seen less and less as a compilation of equally relevant bits, and more and more as a complete whole in which only certain parts are relevant; and
- passage from detached observer to involved performer. (p. 13)

Benner utilized the Dreyfus model to describe knowledge development and skill acquisition of clinical nurses in a systematic manner in order to detail the teaching and learning needs present in each level. The Dreyfus model provided Benner with a method to view clinical nursing through its "strengths rather than deficits" (p. x) and to describe clinical nursing through its "clinical capacities rather than traits or talents" (p. x) to ultimately explain and predict educational needs at each level of expertise (Benner, 1984/2001).

Benner's theory was built on qualitative data collected through direct observation and interaction with the population it addresses. She studied nurses in the clinical environment in an attempt to explain nursing knowledge from a perspective not previously thoroughly researched. She intended to obtain data related to her observations of nurses in practice (Benner, 1984/2001). Benner

utilized her own experience in nursing and philosophy to attempt to answer the why and how of nursing knowledge. Why do nurses do what they do and how do they know to do what they do? A better understanding of knowledge acquisition, prior to nurses formally entering the workforce, is critical for nursing education, and to new graduate orientation programs as both educators and employers desire to better prepare nurses for the workplace. This study described students' perceptions of their acquisition of clinical reasoning and what experiences facilitated its development .

Nursing education research seeks to examine teaching and learning within the discipline and the most efficacious methods for producing safe, efficient, and competent healthcare practitioners. Benner's approach to nursing knowledge development is based on the needs of the learner through various stages of developing expertise. Her research remains a seminal work in nursing educational theory. Although the healthcare environment continues to change, and new technologies have changed the face of "what" nurses know, the "how" of nursing knowledge still exists in the experiential, situational contexts nurses acquire and develop over time. Utilizing Benner's theory as a framework to inform the study provided the researcher with a theoretical rationale for examining how the development of clinical reasoning in undergraduate nursing students is based on the situational experiences students encounter, how they are guided through the clinical reasoning process, and how students perceive their ability to use clinical reasoning positively affects patient care outcomes.

Significance of the Study

In the United States, over the last decade, methods of teaching and learning in nursing education have been scrutinized by various healthcare organizations and have been found to be lacking in several essential areas (American Association of Colleges of Nursing, 2008; Institute of Medicine, 2010; National Council of State Boards of Nursing, 2006; National League for Nursing, 2005, 2007). The NLN has recommended changes be made in nursing education to ensure a safe and competent nursing workforce to meet current and future healthcare needs (National League for Nursing, 2005, 2007). Those recommendations include utilizing new and innovative pedagogies that promote new ways of thinking (National League for Nursing, 2003). Just as nursing practice must be evidence-based, nursing education and pedagogical strategies must be based on evidence of the effectiveness in producing graduates who can deliver healthcare in increasingly complex healthcare settings. Research must be conducted to support these new pedagogies and determine their effectiveness for nurse graduate preparation as well as patient outcomes.

In their 2010 report, *The Future of Nursing: Leading Change, Advancing Health*, the Institute of Medicine (IOM) called for reform in nursing education to prepare new graduates for the ever-changing healthcare environment of the 21st century. The complexity of illness in the aging adult population, advancing information and medical technology, and the shift from primarily hospital-based care to community-based care, have all had an impact on the nursing profession.

The Institute of Medicine (2010) discussed the need for more emphasis on critical thinking in nursing:

Care within the hospital setting continues to grow more complex, and nurses must make critical decisions associated with care for sicker, frailer patients. Care in this setting depends on sophisticated, life-saving technology coupled with complex information management systems that require skills in analysis and synthesis. Care outside the hospital is becoming more complex as well. (p. 170)

Changes in the healthcare environment demand changes in the way nurses are educated and in the professional preparation of new graduates. New nurses entering the profession cannot be held responsible for clinical reasoning at the same level as experienced nurses who have practiced for many years in the clinical setting. However, educational preparation should be adequate to provide new graduates with both knowledge and skills to enter the workforce and provide safe and effective patient care. Alongside an expert nurse preceptor adept at providing opportunities in which to develop clinical reasoning, the new graduate will flourish.

Assumptions and Biases

The National Council Licensure Examination (NCLEX) tests the minimal level of competency for new nurses to practice safe and effective patient care (NCSBN, n.d.) and each new graduate must pass the NCLEX in order to practice as a registered nurse. An assumption inherent in baccalaureate nursing programs is that students will graduate with the requisite knowledge to pass the

NCLEX, enter into practice, and provide safe patient care. Most nursing programs focus their curricula on teaching knowledge necessary to pass the NCLEX with little emphasis placed on the methods that best facilitate student learning. Faculty assume nursing students know how to learn based on the competitive nature of entrance requirements and pre-requisite courses. It was the researcher's assumption that within nursing programs emphasis is placed on knowledge accumulation and nursing students graduate from nursing school having memorized content for exams, including the NCLEX, but may not have fully learned how to use clinical reasoning to make safe and effective patient care decisions.

As a faculty member in a baccalaureate nursing program, the researcher has experience in teaching nursing students in both clinical and classroom environments. The researcher's assumption that talking with students is an important way to learn about developing clinical reasoning was the impetus for the qualitative design of the study. The researcher's intent for the study was to delve into the lived experiences of senior baccalaureate nursing students to explore their experiences with the phenomenon of clinical reasoning, how it is developed and enhanced in nursing school, and how they use clinical reasoning to provide safe and effective patient care.

Definition of Terms

For this study, the definition of terms were as follows:

Clinical reasoning. The process whereby nurses use clinical judgment and critical thinking to make decisions based on both knowledge and experience.

Benner et al. (2010) discussed clinical reasoning as the ability for which student nurses strive through the course of clinical nursing education. It has been defined as “the ability to reason as the clinical situation changes, taking into account . . . patients’ trends and trajectories” (Benner et al., 2010, p. 85).

Critical thinking. Critical thinking is characterized by autonomy, flexibility, open-mindedness, orderliness, diligence, inquisitiveness, and persistence (Daly, 2002; Di Vito-Thomas, 2005; Duchscher, 2003; Scheffer & Rubenfield, 2000) in clinical nurse decision-making.

Safe patient care. According to the Quality and Safety Education for Nurses (QSEN) Institute, safe patient care is defined as the reduction of harm to patients through individual nursing actions, or system effectiveness (Case Western Reserve University, 2014). Delivery of safe patient care has been delineated as one of the top competencies for pre-licensure nursing programs by the Institute of Medicine (2010) and the QSEN Institute (Case Western Reserve University, 2014). The North Carolina Nurse Practice Act (North Carolina Board of Nursing, 2009) indicates safe patient care as an essential outcome for any nursing education program. Debourgh and Prio (2012) discussed teaching strategies to incorporate safety in all nursing education curricula.

Effective patient care. Effective patient care is the use of information and technology, safe practices, quality improvement, and teamwork to deliver optimal care to each and every patient (Case Western Reserve University, 2014). The North Carolina RN Nurse Practice law (North Carolina Board of Nursing, 2009)

describes effective patient care as assessing, planning, implementing, and delivering patient care to meet the desired outcomes of health maintenance for each patient.

Summary

This chapter presented the statement of the problem, the purpose, and the qualitative research questions proposed for this study. The conceptual framework was discussed followed by the significance of the study. The assumptions and biases were explicated and definitions of terms used in the study were provided.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This review of the literature begins with a discussion of the context for current issues in the education of nurses. A discussion of current literature related to educational research in nursing and pedagogical change in nursing education follows. Teaching strategies for the promotion of clinical reasoning in clinical, classroom, and simulated environments are also discussed.

Context of the Study

Experiential

As nursing faculty in both the classroom and clinical setting, the researcher has observed the development of clinical reasoning in nursing students and the progression from beginning student to competent student. Although many students do not reach the level of competent nurse by the end of nursing school, most do achieve a level of competence that prepares them for entry into practice as a safe and effective nurse.

This review of the literature is focused on current knowledge related to the development of clinical reasoning in nursing students. Support for pedagogical research, current definitions of clinical reasoning, and how clinical reasoning is taught in nursing are discussed.

Synthesis of the Literature

Educational Research in Nursing

Research in nursing has historically focused on clinical populations and clinical questions (McCartney & Morin, 2005; Tingen, Burnett, Murchison, & Zhu, 2009). As funding for research expanded the opportunities for nurse scholars to further develop the science of nursing, funding for nursing education research did not experience the same pace of growth and development (Yucha et al., 2011). However, nursing education research has evolved over the last decade and many nurse scholars have begun to focus on finding evidence related to clinical and classroom instruction. In 2007, the NLN issued a call for more funding for nursing education research (National League for Nursing, 2007); and in 2010, the IOM recommended more research into nursing education (Institute of Medicine, 2010) in light of the changing healthcare environment and the impending shortage of nurses in the workforce.

Nursing education research must be pursued in order to ensure that instruction in nursing is based on evidence (Diekelmann, 2005). "Nursing education research is vital to the practice of professional nursing" (p. 167) and to the advancement of safe and effective patient care (Tingen et al., 2009). In accordance with the IOM (Institute of Medicine, 2010) and NLN recommendations (National League for Nursing, 2007), more emphasis needs to be placed on producing replicable research to improve nursing education and produce graduate nurses who are prepared to practice in clinical settings

(Diekelmann, 2005). According to Diekelmann (2005) research in nursing education should “embrace scientific, critical, feminist, phenomenological, and postmodern studies” (Diekelmann, 2005, p. 64) and should focus on developing new pedagogies emphasizing thinking and learning, rather than solely meeting specific program outcomes. Similarly, in their study of new graduates’ level of satisfaction with their preparation for practice, Candela and Bowles (2008) found a need for reform in nursing program curricula to meet the needs of 21st century nursing practice.

Clinical Reasoning

Critical thinking, clinical judgment, clinical decision-making, and clinical reasoning are used interchangeably in the literature (Benner et al., 2010; Cerullo & Cruz, 2010; Khanyile & Mfidi, 2005; Levett-Jones et al., 2010). Clinical reasoning is considered a hallmark of the expert nurse who has learned to assimilate patient information, draw inferences about which actions are needed, and follow up with evaluation of outcomes (Banning, 2008; Del Bueno, 2005). Clinical reasoning in nursing has been explored from the perspective of community nursing (Carr, 2004), the factors affecting decision-making in experienced nurses (Hoffman et al., 2004) and in nursing students (Baxter & Rideout, 2006), and as a process of reflection and articulation (Murphy, 2004). Levett-Jones et al. (2010) described the ability of nurses to recognize deterioration of a patient’s condition and intervene to prevent adverse outcomes as clinical reasoning.

Nursing students are at the beginning of the continuum proposed by Benner (1984/2001) in her theory of novice to expert. As they progress through nursing school and gain knowledge and skills, they are able to begin to apply what they have learned in theory to their nursing practice. The literature discusses the development of clinical reasoning in nursing students and various recommendations proposed to enhance and develop it. Clinical reasoning in nursing students has been explored using case-based learning (le Roux & Khanyile, 2012), computerized simulation (Hoffman et al., 2011; Lasater, 2007), virtual patients (Forsberg, Georg, Ziegert, & Fors, 2011), concept mapping (Di Vito-Thomas, 2005), debriefing for meaningful learning (DML) (Dreifuerst, 2012), the novice computer decision support (N-CODES) system (O'Neill, Dluhy, & Chin, 2005), the outcome present state test (OPT) (Bland, 2009; Kautz et al., 2005), problem-based learning (Khanyile & Mfidi, 2005), the reflective self-regulation learning model (Kuiper, Pesut, & Kautz, 2009), team-based learning (Banfield et al., 2012), and the think aloud process (Banning, 2008) among other methods.

Expectations for new graduate nurses to practice safely in acute care settings and the need for emphasis on clinical judgment in nursing curricula have been cited as an impetus for research into clinical and classroom teaching strategies (Del Bueno, 2005; Lasater, 2007). According to Del Bueno (2005), the reason for new nurses' lack of ability to make sound clinical decisions is the emphasis in nursing curricula on more and more content rather than the acquisition, application, and analysis of knowledge. Nursing students need to

spend time with real patients in actual care situations to develop clinical reasoning and judgment. According to Banfield and colleagues (Banfield, Fagan, & Janes, 2012) and Del Bueno (2005) nontraditional teaching strategies where students spend time with clinical instructors who coach students by asking questions related to the evidence presented are more successful in producing nurses who use clinical judgment to guide their patient care. Encouraging students to question, apply, analyze, and synthesize information rather than memorize facts and processes from a textbook aids them in building a knowledge base with which they will be able, as new nurses, to make clinical decisions that will keep their patients free from harm (Banfield et al., 2012; Del Bueno, 2005; Di Vito-Thomas, 2005).

Nursing students work at the bedside with nursing instructors to gain confidence and knowledge with actual patient care situations in order to develop the ability to think clinically and reason through potential outcomes of their nursing actions. Clinical reasoning requires reflective, intuitive thought processes that many expert nurses possess, but few undergraduate novice nurses have yet mastered. Kautz et al. (2005) described teaching methods that would enhance clinical reasoning and lead nursing students to develop an inquisitive approach to learning based on the nursing process. They noted that, “studying students’ thinking while they care for clients in their clinical practicum . . . enables faculty to evaluate student skill acquisition, professional growth, and development over time” (Kautz et al., 2005, p. 2). Nursing instructors coach their

students through these reflective processes by assisting them at the bedside with real patient care scenarios.

Active, experiential learning is considered by some to be the best means of developing clinical reasoning in nurses (Banfield et al., 2012; Debourgh & Prion, 2012; Hoke & Robbins, 2004; Levett-Jones et al., 2010). Novice nurses' inability to reason through complicated patient care situations demonstrates inadequate education in clinical reasoning and indicates the need to change teaching/learning practices to enhance active learning (Levett-Jones et al., 2010). Levett-Jones et al. (2010) developed a clinical reasoning model for classroom use wherein active learning is promoted and self-directed learning is the basis for the learning process. Evaluation and reflection following each nursing action are. Reflection on each action promotes a deeper understanding of the elements involved in reaching the outcome, whether expected or unexpected. Experienced nurses use clinical reasoning intuitively. Student nurses must be taught methods for gathering and interpreting data, taking correct actions, and reflecting on the process in order to develop the skill necessary to make clinical decisions that will produce desired outcomes (Levett-Jones et al., 2010).

Khanyile and Mfidi (2005) explored the benefits of problem-based learning as a method for promoting clinical reasoning in nursing students. They concluded there was no difference in the development of clinical reasoning ability between students who were taught with problem-based learning and those taught with traditional curricular approaches. Khanyile and Mfidi (2005) also

noted that clinical time with instructor supervision was the time in nursing school when students developed clinical reasoning skills. They found that clinical reasoning ability was dependent on students' educational level in the nursing program, or instructors or preceptors, staff, and the clinical environment in which they were learning (Khanyile & Mfidi, 2005). Specifically, senior nursing students who were supported by clinical instructors or preceptors in challenging clinical environments, developed greater clinical reasoning.

Classroom, Clinical, and Simulation Instruction

Classroom instruction. Bain (2004) noted that teaching is not about transmitting knowledge, but about producing learning in students. The most effective teachers are scholars of learning and understand not just their discipline, but how it might best be taught. Brookfield (2006), in *The Skillful Teacher*, proposed that skillful teaching incorporates helping students learn, reflecting on one's own practice, and being aware of students' perceptions of learning. He emphasized the ongoing pursuit of knowledge and self-evaluation necessary for effective teaching. Parker Palmer (1998/2007) discussed the importance of understanding oneself in order to be effective in the classroom. He suggested focusing on what are the optimal conditions for producing lifelong, active learning, and said "teaching is the intentional act of creating those conditions, and good teaching requires that we understand the inner sources of both the intent and the act" (Palmer, 1998/2007, p. 7).

According to Schaefer and Zygmunt (2003), nursing faculty have the responsibility to actively engage students in learning strategies to promote critical

thinking throughout the nursing. Faculty are role models for clinical reasoning skills in the classroom and should present opportunities to nursing students that challenge their assumptions about healthcare (Schaefer & Zygmunt, 2003). Rowles and Russo (2009) examined the roles of both faculty and students in teaching and learning critical thinking skills and concluded, "Critical thinking should be at the forefront of planning learning experiences for nursing students" (p. 241). Integration of case studies, role playing, demonstrations, and cooperative learning into theory and practical aspects of nursing curricula promote critical thinking in students and aid in the development of clinical judgment and decision-making. Nursing students must begin to be able to recognize abnormalities encountered while performing patient care and be able to make treatment decisions based on "higher-order thinking skills" (Rowles & Russo, 2009, p. 239). Duchscher (2003) reported critical thinking ability in nursing students was related to length of time in the academic setting as well as instructor emphasis on the development of critical thinking skills.

Martens et al. (2009), who examined student perceptions of the effectiveness of a physical examination class, identified (a) didactic skills, (b) interpersonal and communication skills, and (c) conditions of skills training as instructor skills that students believed made their learning more effective. The students indicated that a teacher's ability to deliver content in an interesting and stimulating manner was important, as was the teacher's attitude toward teaching and students. According to Kreber (2002), excellent teachers motivate their

students, know their discipline, and know how to convey the knowledge of their discipline in a manner students find practical (Kreber, 2002).

The National League for Nursing (NLN) has said that “nurse educators must focus on expanding their evidence-based pedagogical repertoire and rethink the very nature of contemporary schooling, teaching, and learning” (National League for Nursing, 2003, p. 3). The NLN recommends changing pedagogical views to emphasize innovation in both the classroom and the clinical environment. Recommendations include speaking with students, faculty, and healthcare colleagues about what site-specific changes can be made to improve clinical experiences for students to enhance their clinical practice. The NLN has also recommended reform at the national level to ensure that changes in nursing education are supported across healthcare organizations and institutions in the United States (National League for Nursing, 2003). The NLN supports the creation of learning environments and pedagogical methods focused on the needs of the student:

We are on the cusp of significant change in nursing education, and this opportunity makes it even more critical that faculty focus on student learning and creating environments for students and themselves that are characterized by collaboration, understanding, mutual respect, equality, and acceptance of difference (National League for Nursing, 2005, p. 4).

Though reform in nursing education has been recommended at the national level, classroom and clinical educators have been slow to change. Many nursing faculty continue to teach as they were taught, with little insight into the need for

change. Students complete nursing programs, pass their professional examinations, and begin to work as registered nurses in spite of current pedagogies in nursing education.

Clinical instruction. The primary goal of clinical nursing education is to prepare new graduates for the delivery of safe, competent, and patient-centered care in the environment in which they choose to practice (Baxter & Rideout, 2006; Chuan & Barnett, 2012; Edwards, Smith, Courtney, Finlayson, & Chapman, 2004). One of the responsibilities of the clinical instructor is to provide an environment that is conducive to learning (Baxter & Rideout, 2006; Cassimjee, 2006; Chuan & Barnett, 2012). Clinical settings are stressful for nursing students and their processes of making clinical decisions can be affected by that stress (Baxter & Rideout, 2006).

Clinical instructors have historically been chosen for their clinical expertise as well as their ability to teach (Cassimjee, 2006) and modeling clinical decision-making in patient care situations is an important aspect of their work (Baxter & Rideout, 2006; Cassimjee, 2006). Clinical instruction helps nursing students understand the links between theory and practice (Cassimjee, 2006; Chuan & Barnett, 2012; Edwards, et al., 2004; Gidman, McIntosh, Melling, & Smith, 2011) by providing opportunities in clinical settings to develop clinical reasoning.

Baxter and Rideout (2006) found that nursing students in their first clinical experience relied on the clinical instructor as well as the experienced staff nurse to provide guidance in clinical reasoning. Making patient care decisions is a complex process for students (Bartlett et al., 2008) and many factors, including

personal confidence and knowledge base, affect the decisions they make (Baxter & Rideout, 2006). Provision of a safe environment in which the students can learn and develop decision-making skills has been found to be an essential element in nursing education (Baxter & Rideout, 2006).

The Outcome Present State Test (OPT) model has been used in nursing schools to assess clinical reasoning in students (Bartlett et al., 2008; Bland, 2009; Kautz et al., 2005; Kuiper, Pesut, & Kautz, 2013) with positive results. Bland et al. (2009) and Bartlett et al. (2008) studied psychiatric nursing students' ability to reason through patient care scenarios and found the OPT model helped students to organize essential elements of a patient's story in order to provide safe and effective patient care. Kautz et al. (2005) found the OPT model along with innovative learner-centered active learning strategies improved nursing students' development of clinical reasoning.

Cassimijee (2006) studied third and fourth year nursing students' views of clinical instruction and found that students believed clinical instruction was meant to help them link theory with practice. Location of clinical instruction was shown to be an important factor in nursing student satisfaction and preparation for practice by Edwards and colleagues (Edwards et al., 2004). Nursing students who felt supported and valued in their clinical environment had higher levels of confidence in their competence for nursing practice (Edwards, et al., 2004). Gidman et al. (2011), who studied nursing students perceptions of support in the clinical environment, found that mentors provided the most support (Gidman et al., 2011).

An active learning strategy based on the use of a decision-making template was developed and tested by Russell, Geist, and Maffett (2013) with undergraduate nursing students. They found the template was beneficial for the students in organizing and prioritizing care in the clinical setting. The template also provided the students with a structured method for reasoning through patient care aspects and identifying the essential components for safe and effective patient care.

Simulation instruction. Dreifuerst (2012) studied the development of clinical reasoning in nursing students using the debriefing for meaningful learning (DML) method with students in the next to last semester of their nursing program. The author found that the DML method was successful: “Incorporating a consistent method of faculty facilitated prompting, guiding and reflecting into each debriefing session promotes meaningful learning and the development of clinical reasoning in nursing students” (Dreifuerst, 2012, p. 332).

Virtual patients were used by Forsberg et al. (2011) to assist in the development of clinical reasoning in nursing students. The use of virtual patients was well accepted by the students and faculty. Faculty found the development of case studies with the virtual patients beneficial in assessing the students’ thought processes related to clinical reasoning (Forsberg et al., 2011).

Gierach and Evenson (2010) created a triage simulation to be used in the classroom with students in their last semester of a nursing program to enhance students’ abilities to use prior knowledge. They found the safe environment of the simulation as well as the debriefing session following the simulated scenario

provided students with the opportunity to practice clinical reasoning as well as develop teamwork and communication strategies (Gierach & Evenson, 2010).

During a simulated emergent patient care scenario, Jensen (2013) evaluated nursing students' clinical reasoning using the Lasater Clinical Judgment Rubric (LCJR) which is a tool developed by Lasater (2007) to measure students' clinical reasoning skills during simulation. Faculty assessed students' clinical reasoning and students provided a self-assessment of their clinical reasoning abilities after the simulation. Jensen (2013) found that students rated themselves higher on clinical reasoning skills than faculty did and that faculty observations and feedback related to clinical reasoning are essential in its development.

Clinical simulation prior to attending clinical was found by Mahoney, Hancock, Iorianni-Cimbak, and Curley (2013) to be beneficial for nursing students in the development of clinical reasoning and as a bridge between classroom and clinical. One student in the study remarked that simulated clinical helped her to think like a nurse as well as develop prioritization and reasoning skills (Mahoney et al., 2013). Phillippi, Bull, and Holley (2013) used clinical simulation with Master's in Science in Nursing students to help improve clinical reasoning and mastery of the primary care provider role. They found the organization of the simulation and faculty direction of the process provided students with a deeper learning experience which promoted better clinical reasoning and better patient care outcomes (Phillipi et al., 2013).

Gaps in the Literature

Given the complexity of current nursing practice and the call by nursing stakeholders to improve the competence of entry level nurses, it is important to examine current practices for preparing nursing students to think like nurses and take on the challenge of 21st century nursing. A plethora of research has been done on teaching strategies to improve clinical reasoning, both in and outside of nursing (Del Bueno, 2005; Dreifuerst, 2012; Forsberg et al., 2011; Hoffman et al., 2011; Hoke & Robbins, 2005; Kautz, Kuiper, Pesut, Knight-Brown & Daneker, 2005; Levett-Jones et al, 2010; Tanner, 2006). Active learning in the classroom, experiential learning in clinical, and the combination of theory and practice in the simulation environment have all been discussed in the literature. Many studies have pointed to the need for nursing faculty to go beyond the methods by which they were taught and adapt to the ever-changing healthcare environment (Lapkin, Levett-Jones, Belchambers, & Fernandez, 2010). However, there is little in the literature on nursing students' perceptions of clinical reasoning or how they believe clinical reasoning is best facilitated in pre-licensure nursing programs.

The intent of this study therefore was to examine the teaching of clinical reasoning from nursing students' perspective. Delving into the experiences of nursing students and understanding how they learn provided information for nursing faculty in making curricular changes to improve the clinical reasoning skills of graduate nurses.

Inferences for Current Study

This study addressed a gap in the literature in regard to students' understanding of clinical reasoning as an outcome of nursing education and their perceptions of the development of clinical reasoning skills while in undergraduate nursing education. The phenomenological method was used to gather data will provide a basis for understanding clinical reasoning as it is taught in undergraduate nursing programs and pedagogical strategies to improve the development of clinical reasoning.

Summary

Current nursing education literature has not addressed student perceptions of the development of clinical reasoning in undergraduate nursing programs. This study addressed students' understanding of clinical reasoning as well as their perceptions of how it is taught in pre-licensure baccalaureate nursing education. This chapter provided a review of the literature around clinical reasoning in undergraduate nursing students. The context for the study was discussed. Gaps in the literature and inferences for the current study were provided.

CHAPTER 3

METHODOLOGY

This chapter describes the methodology that was used for this qualitative study. The research design, setting and sample, data gathering procedures including interview questions, data analysis, and strategies to assure trustworthiness and rigor are presented. Procedures for protection of human subjects and limitations of the study are discussed.

Research Method and Design

The study incorporated a descriptive phenomenological approach to explore pre-licensure baccalaureate nursing students' perceptions of clinical reasoning. Specifically, this study focused on students' experiences with clinical reasoning, their perceptions of the facilitative factors in the development of their clinical reasoning, and their views related to how they use clinical reasoning to provide safe and effective patient care. Phenomenology was an appropriate approach for this study as it provided a means for the researcher to explore student nurses' lived experiences in an attempt to provide a deeper understanding of the particular phenomenon (Converse, 2012; Koch, 1996; Mapp, 2008; Streubert & Carpenter, 2011). This form of research attempts to describe experiences as they are lived in the everyday world rather than report statistical relationships among variables.

Edmund Husserl figured prominently in the phenomenological movement that began in the early 20th century (Bradbury-Jones, Sambrook, & Irvine, 2009; Dowling, 2007; Koch, 1996; Streubert & Carpenter, 2011; Tuohy, Cooney, Dowling, Murphy, & Sixmith, 2013) as a philosophical movement in which the essence of real life is explored and described. Husserl supported descriptive phenomenology in which the researcher experienced the phenomena without preconceived notions in order to experience the true essence of the phenomena (Bradbury-Jones, et al., 2009; Converse, 2012; Mapp, 2008). The real world was placed in brackets to remove any inherent judgment by the researcher and thus allow the true essence of the phenomenon to come through without personal bias by the researcher (Bradbury-Jones et al., 2009). Thus Husserl's phenomenology was purely descriptive in nature.

Heidegger followed in Husserl's footsteps with a phenomenological approach; however, Heidegger differed in his philosophical view of the separation of the researcher's experience with the phenomenon (Bradbury-Jones et al., 2009; Koch, 1996). For him, the researcher was part of the world in which the research took place and therefore personal experience and interpretation were used to better understand the phenomenon (Bradbury-Jones, et al., 2009; Converse, 2012; Koch, 1996; Mapp, 2008). Regardless of whether the approach is descriptive or interpretive, the main goal in phenomenological research is to understand the phenomenon from the viewpoint of one who has lived it (Mapp, 2008).

Phenomenological research, which grew from the work of Husserl and Heidegger, is increasingly utilized by nursing with descriptive and interpretive being the two frameworks most often used (Mapp, 2008; Streubert & Carpenter, 2011; Tuohy et al., 2013). Descriptive phenomenology, as envisioned by Husserl, was reductive in nature and required reflection on phenomena of interest to be context free (Dowling, 2007). Reductive phenomenology follows a three-step method, which includes: (a) intuiting, (b) analyzing, and (c) describing experiences, to gain a richer understanding of the phenomenon under study (Streubert & Carpenter, 2011; Tuohy, 2013). The researcher strives to bracket personal experiences, thoughts, and views related to the phenomenon in order to avoid bias while gathering data. It is imperative in descriptive phenomenology that the researcher put aside personal experiences in order to reveal the essence of the phenomenon (Converse, 2012). Commonalities in experiences are sought, categorized, and described individually, then as each relates to the other (Streubert & Carpenter, 2011). The focus of descriptive phenomenology is the experience itself, not the context in which it occurred (Tuohy et al., 2013).

Interpretive phenomenology seeks to explore and interpret the lived experience in the context as it is lived (Dowling, 2007). The researcher is part of the research and uses personal influences and biases to aid in understanding the participants' experiences (Tuohy et al., 2013). Heidegger supported a hermeneutic method of research in which the lived experience is interpreted based on the researcher's own experience with the phenomena (Dowling, 2007). The hermeneutic circle, "a metaphor for understanding and interpretation" (Ajjawi

& Higgs, 2007, p. 622), is the basis for the iterative process of interpretive research. As the researcher gains an understanding of the phenomena, new questions arise which lead to a deeper understanding of the phenomena (Ajjawi & Higgs, 2007; Bradbury-Jones et al., 2009; Koch, 1996).

In essence, Hermeneutic inquiry begins with a person, a researcher, seeking to make sense of a given phenomenon of interest. The researcher explores the whole of the experience searching to bring meaning to phenomena that may have previously been ill defined (Van Manen, 1990). The meaning is brought to light through writing and rewriting until the phenomenon shows itself to the researcher in the language of the participant. The phenomenological researcher must maintain a close relationship with the phenomenon in question and continue to view the underlying purpose of the research, which is to explain the lived experience contextually as a whole rather than just a sum of its parts (Van Manen, 1990).

Rationale for Research Approach

Phenomenological methods are well suited for nursing research in which the lived experience of individuals is the starting point for understanding how a phenomenon affects a population (Streubert & Carpenter, 2011) and how nursing as a discipline can focus efforts to address issues related to the phenomenon. A descriptive phenomenological approach was chosen for this study based on the researcher's first hand knowledge of the nursing education environment, as well as experience with the development of clinical reasoning among baccalaureate nursing students. Phenomenological research is based on

exploration of a phenomenon in the world of those who have experienced it (Bevan, 2014) not on a set of theoretical notions. As nursing faculty with a background in clinical nursing, the researcher brought knowledge of the world in which the participants live, which aided in the interpretation of the data gathered (Mapp, 2008) as well as built trust and confidence with the participants (Ajjawi & Higgs, 2007). It was also the researcher's belief that asking students about how they develop clinical reasoning could inform faculty and improve methods and strategies used in nursing education.

Setting

The setting for the study was a university based pre-licensure baccalaureate nursing program in the Southeastern United States. This university based nursing program was a traditional four-year baccalaureate degree program with both fall and spring semester entry. Students entered the nursing program as first semester juniors and completed the program after four semesters.

Participants

Participants for this study were pre-licensure baccalaureate nursing students who had recently graduated or were in the final year of their baccalaureate program. Purposive sampling, which is most often used in phenomenological research (Mapp, 2008), was used to obtain participants who provided rich descriptions of their experiences with clinical reasoning, consequently, students representing different ages, ethnicities, and life experiences were recruited into the study. Snowballing, which is a method of

obtaining new participants via recommendation from participants already recruited, helped to assure the researcher was able to obtain an adequate sample size (Streubert & Carpenter, 2011). Inclusion criteria for the study were pre-licensure baccalaureate nursing students who were: 1) eighteen years of age or older; 2) able to read, write, and speak English; and, 3) entering the final year of or recently graduated (3 months) from a pre-licensure baccalaureate nursing program. The sole exclusion criterion was any pre-licensure baccalaureate nursing student who did not agree to be audio recorded.

In qualitative research, sample size is based on the purpose of the data collection and the quality of the information gathered. As data are gathered, information may become redundant and no longer add to the depth of knowledge sought in the study. Estimates for sample size for qualitative studies are based on assuring that enough quality data are collected to describe the phenomenon of interest (Morse, 2000) without obtaining so much data that in depth analysis is not possible (Draper & Swift, 2011). According to Morse (2000), in qualitative studies using semi-structured interviews, sample size may need to be large to gather enough data from the participants. Often, the sample size needed is more apparent as the interview process progresses and the data is gathered (Draper & Swift, 2011). However, if adequate amounts of quality data are gathered from each participant during in-depth interviews, a smaller sample size is adequate. For this study, the sample size was 18 participants for whom there was analyzable data.

Data Gathering

Following approval from the Mercer University Institutional Review Board (IRB), (Appendix A) approval was received from the university IRB where the research was conducted (Appendix B). Additionally, the dean and director of the nursing program were contacted and approval was granted to invite their pre-licensure baccalaureate senior nursing students to participate in the study (Appendix C).

Participants were recruited in person and via email (Appendix D). The researcher was given permission by one of the senior nursing students' instructors to attend a class session and make a general announcement about the study. Participants were not asked to indicate their interest while in class. After the class meeting, the researcher emailed the entire class as follow up to the visit and again provided contact information for any student interested in participating in the study (Appendix D). A request was made that individuals interested in the study should reply confidentially to the researcher via email.

Individual interviews were conducted at the convenience of the participant either in person or via Skype. Interviews lasted approximately one hour and were audio recorded to provide the most detailed account of their experiences. Notes were taken to allow the researcher to supplement the audio recording with observations of facial expressions, body positioning, tone of voice, and other data about the participant that was not apparent from a taped interview. The interviewer focused on obtaining detailed information related to student perceptions of the development of clinical reasoning and the facilitators that

enhance and promote the development of clinical reasoning in pre-licensure nursing students. At the conclusion of the individual interviews, the researcher thanked and informed each participant that this completed his/her participation in the study. The researcher presented each participant with a \$5.00 gift card to Starbucks.

The primary mode of data collection in the study was via semi-structured qualitative interviews. Qualitative interviews require comfort and ease of conversation between researcher and participant (Polit & Beck, 2012). After making introductions and putting the participant at ease, the researcher begins the interview. Semi-structured interviews are conducted when the researcher knows what they want to ask, but desire conversation with the participants to be free and in their own words (Polit & Beck, 2012). In this study, individual interviews were conducted to gather information related to students' perceptions of the phenomenon. For many study participants, the ability to discuss their experiences will provide them validation of that experience (Streubert & Carpenter, 2011). Examples of the interview questions were:

- (1) Tell me about a situation during your nursing program where you used clinical reasoning to make a patient care decision. What best helped you to develop this clinical reasoning?
- (2) Tell me about the teaching environments you experienced in nursing school and which environment best facilitated your development of clinical reasoning.

- (3) Describe some specific examples of how your instructors in clinical, classroom, or simulation, may have facilitated your development of clinical reasoning.
- (4) Let's talk about how your development of clinical reasoning has enabled you to provide safe and effective patient care.
- (5) Can you describe a specific situation during your nursing program when clinical reasoning improved your delivery of safe and effective patient care?

These questions assisted the participants in exploring their beliefs related to clinical reasoning and provided the researcher with a more in depth understanding. An individual interview guide with probing questions is included as Appendix E.

Protection of Human Subjects

Confidentiality

Participants were assured of the confidentiality of their personal and study information. All interview data collected, including audio recordings and transcriptions of interviews, were protected by the researcher in a secure location and no one, other than the researcher and her dissertation committee chair, had access to the data. Any identifying information related to participants was kept strictly confidential and documents containing confidential information were shredded at the conclusion of the study.

Informed Consent

Prior to the first interview being conducted, the researcher determined the consent form approved by the Mercer IRB (Appendix F), as written, did not extend the inclusion criteria to students who had recently graduated from a baccalaureate nursing program. A revision to the IRB application was submitted to the Mercer IRB and a new informed consent was approved (Appendix G).

Written informed consent was obtained from each participant (Appendix G) at the onset of the interview. Prior to obtaining informed consent, the study was explained in detail and any questions the potential participant had were answered. Participation or non-participation did not benefit or disadvantage the students in any way. Participants who met the inclusion criteria were enrolled in the study either recently after graduation or during their final year of their baccalaureate program. The researcher, a faculty member at the nursing school from which the sample was taken, did not teach any courses in the final semester of the baccalaureate program during the data collection phase of the study. Although many of the participants were in clinical and/or didactic courses taught by the researcher during previous semesters, the researcher had no direct influence over any participant's grade or progression in the baccalaureate program during the study. It was made clear to each participant that findings from the individual interviews would not have any adverse effect on their standing in the nursing program. The researcher did not share confidential information provided by participants with any faculty member at the school of nursing.

Data Processing

Individual interviews were audio recorded and listened to by the researcher as soon as possible after the interviews and transcribed verbatim using a professional transcriptionist (Streubert & Carpenter, 2011). Capturing the reflections of the participants, in their own words is the basis for descriptive phenomenological research (Bevan, 2014). The researcher's notes, taken during the interviews, were reviewed as well and correlated with the interview transcripts in order to provide the researcher's observations of the participant during the interview process. Once the written transcription was completed, the interviewer checked the transcription and compared it with the recording to assure accuracy. A second recording device was used during the interview process so that data would not be lost in the event of a tape recorder malfunction (Streubert, & Carpenter, 2011). In phenomenological research, data analysis begins during data collection and processing, as the researcher listens to participants share their stories both in person and on tape.

Data Analysis

Data gathered from the individual interviews and the researcher's field notes were analyzed following Giorgi's descriptive phenomenological method which includes bracketing of beliefs and opinions, intuiting meanings, analyzing for essential meanings, and finally describing the phenomenon under study (Giorgi, 1985; Polit & Beck, 2012). Qualitative data was reported via discussion of the emergent themes and supported by direct quotations from participant submissions.

In analyzing the themes and categories, the researcher sought both commonalities and variants in the participants' experiences to build a deeper understanding of the phenomenon. Giorgi (1985) described the following research activities for descriptive phenomenological data analysis: (1) read and reread the text to gain an initial understanding of the phenomenon as a whole, (2) review the text line by line to sort out individual units of meaning, (3) categorize the units of meaning and explore the relationships in the meanings from the perspective of the phenomenon, and (4) synthesize and define the essence of the phenomenon from a holistic, caring perspective (Ebrahimi et al., 2012).

Trustworthiness/Rigor

According to Lincoln and Guba (1985) the trustworthiness of qualitative inquiry is based on the credibility of the data. Whereas in quantitative research, internal validity is the basis for illuminating the truth in the data, qualitative researchers demonstrate credibility by going back to the participants words for approval (Lincoln & Guba, 1985). Applicability of the data is a second construct in qualitative research. For the original investigator, sufficient description of data gathered and analyzed should allow for further research into its transferability (Lincoln & Guba, 1985).

This study sought to delve into the experiences of a single group of nursing students and how their nursing program affected their development of clinical reasoning. Transferability of the data to other participant groups will be the basis for further research outside of this study. Lincoln and Guba (2005)

discussed the dependability of qualitative data as a substitute for reliability while taking into account changes in the data related to the research design.

Several methods for building trustworthiness of data collected in qualitative research are discussed by Lincoln and Guba (1985) including:

- (1) Maintaining field journals;
- (2) Mounting safeguards;
- (3) Arranging for on-site team interactions;
- (4) Triangulating;
- (5) Gathering referential adequacy materials;
- (6) Doing debriefing; and
- (7) Developing and maintaining in audit trail. (pp. 281-284)

The researcher kept field notes and a research journal with details of decisions made throughout the study as well as details of observations made during interactions with participants. Safeguards were instituted to ensure there were no distortions to the data related to inattention to detail, potential biases, and lack of close monitoring of participants' responses to interview questions (Lincoln & Guba, 1985).

Using both individual interviews, field notes, and the research journal added to the rigor and trustworthiness of the findings by reducing bias in the data (Ajjawi & Higgs, 2007). Triangulation from multiple sources added to the trustworthiness and rigor of the data. Use of participants' own words added to the depth and authenticity of the data (Ajjawi & Higgs, 2007). Rigor in qualitative

research can be enhanced when the interpretation of the phenomenon is detailed enough to be applied in a different context (Ajjawi & Higgs, 2007).

Record keeping of all data, analytic procedures, notes, and interpretations is essential in qualitative research to ensure authenticity and trustworthiness (Streubert & Carpenter, 2011). In this study, the researcher kept field notes from individual interviews, taped recordings, analytic notes, and journals of the process of analyzing the data in a secure location accessible only by the researcher. Details of the process used in data analysis were explicitly recorded to provide a clear description of the path taken during the study (Streubert & Carpenter, 2011). A researcher's description and interpretation of their experiences while immersed in the data enhances the credibility of the data (Koch, 1996).

Summary

This chapter has described the methodology that was used for this qualitative study. The research design, setting and sample, data gathering procedures, data processing and analysis plan, and trustworthiness and rigor were discussed. Strategies for the protection of human subjects were delineated.

CHAPTER 4

PRESENTATION OF FINDINGS

This chapter presents a detailed description of the procedures followed for data management and analysis throughout the study. Themes and subthemes identified during coding of the data are discussed and verbatim quotes representing the participants' experiences are provided. The chapter concludes with a discussion of the descriptive phenomenological narrative of the themes and subthemes.

Data Management

One-on-one individual interviews were held with each participant either via Skype or in person. In person interviews were held in the researcher's office, or in a place of the participant's choosing. Prior to conducting interviews in the researcher's office, permission was granted from the researcher's employer to use the space. Each interview was a single-occurrence interview. While many of the participants chose to be interviewed in the researcher's office, 12 of the participants requested off-site locations including five at a local restaurant and seven in their own home via Skype.

All Interviews were digitally recorded on the researcher's password protected laptop computer and the QuickTime digital recordings were sent via secure email to a professional transcription service. The researcher registered

with the transcription service via an existing contract with her place of employment, however, no other employees had access to the recordings or the transcripts. Once the transcripts were completed, they were returned in Microsoft Word format to the researcher via secure email. Each verbatim transcript was reviewed for accuracy by the researcher and edits were made as needed for (1) portions of the transcript unclear to the transcriptionist, (2) spelling of specific nursing terms misunderstood by the transcriptionist, and (3) redaction of faculty or healthcare facility names spoken by the participant during the interview.

Confidentiality was maintained throughout both the interview and transcription process. Copies of the transcribed interviews were provided to the dissertation committee chair via secure email. The reviewed and verified transcripts were printed by the researcher, placed in a notebook for review and coding, and kept in a secure location at the researcher's home to ensure privacy. The original recordings and transcripts were maintained on the researcher's password protected laptop computer and on an external flashdrive for back up.

Data Analysis

Data analysis, by the researcher, began as each completed transcript was received from the transcription service. Ongoing dialogue was maintained between the researcher and the dissertation committee chair regarding data analysis, coding, and theme identification. Using Giorgi's (1985) method, the transcripts were read in entirety in order to gain an understanding of the phenomenon as a whole. The text was then reviewed to identify the individual

units of meaning, categorize them, and explore relationships among them. This exploration allowed the researcher to define the phenomenon from a holistic and caring perspective.

Thirteen transcripts were reviewed in the initial data-gathering phase. Manual first cycle coding began with the researcher reviewing each transcript and writing notes in the margins with different colored ink for each review. Discussion about emerging themes was held with the dissertation committee chair after she and the researcher had individually reviewed each of the transcripts, which enhanced the rigor of the study. The researcher determined after reviewing the first 13 transcripts that five more interviews would be conducted (Draper & Swift, 2011). An interview with two participants was conducted jointly at the request of the participants. Although valuable information was gleaned during this interview, the recording was difficult to transcribe. Additionally, the location for the interview was a busy restaurant, leading to ambient noise, which was later discovered to have created an issue with the audio recording. Due to the inability to hear all aspects of this dual participant interview, the audio recording was not sent to the transcriptionist, and thus their data was not incorporated in the final analysis. As the last interviews were conducted and the transcripts received, the printed Microsoft Word documents were added to the researcher's notebook.

Coding began using Saldana's (2012) method for first and second cycle coding. As stated by Saldana (2012) "the qualitative analytic process is cyclical rather than linear" (p. 45) and therefore cannot be completed after reading the

text once and making determinations of its meaning. In adherence with the established process for the study, the researcher read and reread the text. During the readings, the researcher recorded extensive notes related to initial meanings and themes (Giorgi, 1985) and then expanded on those initial descriptions with more in-depth and holistic interpretations. Descriptive and in vivo coding were used to allow the researcher to hear what the participants were saying through their transcribed interviews and to provide details of the main ideas and thoughts of the participants regarding the phenomenon under study. Many of the descriptive codes, found in passages from all 18 transcripts, were grouped together and categorized by the researcher for further analysis.

Discussion of Findings

Participants in the study were twelve pre-licensure nursing students who were entering their final semester in a baccalaureate nursing program and six recently graduated nursing students (3 months) from the same program. Purposive sampling was met as each of the participants was attending or had attended a baccalaureate nursing program at a four-year university in the Southeastern United States. Table 1. provides demographic characteristics of the participants.

Table 1

Participant Demographics (N=18).*

	Frequency	Percentage
<u>Gender</u>		
Female	17	94%
Male	1	05%
<u>Age</u>		
Range	21-38 years	
Prior Degree	3	16%
Prior Healthcare Experience	11	61%

Note: Twenty participants were consented. Two audio recordings were inaudible.

Seventeen of the participants were female and one was male, which is representative of the demographic of the baccalaureate school of nursing the participants attended. The majority of the participants were between 21 and 22 years of age with one participant who was 38. Three of the participants had prior degrees, but none had a prior baccalaureate degree. Of the 11 who had prior healthcare experience, only one had worked in an acute healthcare setting. The majority of the participants with prior healthcare experience had worked in nursing homes or long-term care facilities as certified nursing assistants. Interestingly, two of the participants discussed summer internships they had prior to their final semester in their baccalaureate nursing program and how they believed the experience had helped them with their development of clinical reasoning. (See Appendix H for a copy of the demographic data form).

The researcher identified five meaning units or themes and 18 subthemes within the data. Analysis of the themes revealed a consistent belief among the participants that clinical reasoning was an essential part of the nursing profession. The themes and subthemes are provided with discussion of each of the themes and subthemes following. Verbatim quotes taken from the interview transcripts are provided in support of the researcher's findings.

Meaning Units or Themes with Subthemes

1. Instructor characteristics
 - a. Communicator
 - b. Intimidator
 - c. Trustworthy
 - d. Questioning
 - e. Available
 - f. Able to Relate to Nursing Staff
2. Learning environment
 - a. Welcoming Staff
 - b. Clinical Group Size
 - c. Work Overload
3. Progression of learning
 - a. Instructor Knowledge
 - b. Class/Clinical Connection
 - c. Prior Healthcare Experience
 - d. Basic to Complex

4. Importance of Clinical Reasoning
 - a. Big Picture
 - b. Safe Patient Care
5. Best place to learn Clinical Reasoning
 - a. Classroom
 - b. Simulation
 - c. Clinical

Theme One: Instructor Characteristics

Instructor characteristics related to the participants' perceptions of the degree to which their nursing instructors influenced their ability to develop clinical reasoning. Classroom, clinical, and simulation instructors were discussed and certain characteristics were found to enhance the development of clinical reasoning while other characteristics were found to have a negative effect on the participants' learning. Some participants chose to discuss only the positive aspects of their baccalaureate nursing program and how each instructor helped them regardless of the instructor's characteristics. Other participants chose to focus on the negative aspects of their baccalaureate nursing program so discussed how their learning had been adversely affected. One of the first characteristics discussed was communication.

Subtheme: *Communicator*. Open communication between nursing instructors and students was a prominent subtheme under instructor characteristics. Participants noted that discussion and dialogue with instructors

was crucial to their development of clinical reasoning. Participant 13 discussed open communication in the classroom:

I think it always helps because I don't know how much learning anyone can do if they don't feel like there's an open two-way channel of communication. And if you feel ashamed to ask questions, or embarrassed by not knowing something, then you're gonna hide it, chances are, and that's very dangerous. They say you can know just enough to be dangerous.

One method used by an instructor to promote communication in the clinical environment, was mentioned by Participant 1:

There was one [instructor] in particular who liked to kind of congregate in the hall in small groups. And maybe somebody had a medication they were passing, or somebody had a procedure, and it correlated with a disease process. And we talked through the whole thing, like step-by-step, through questioning and answering, and just good dialogue. And that was the best experience.

In discussing the importance of open communication with instructors, Participant 2 stated:

It was really important. We had to ask our instructors questions all the time and just being able to talk with them and them talking to us and explaining things in a way we would understand it.

Many participants discussed the importance of instructors allowing them to come up with the answers to their own questions as a means of developing clinical reasoning. As Participant 11 stated:

So that professor was really great about allowing you to tell the story, letting you talk the answer out yourself. So, I would come ask her a question, and she would ask me a question back. And I would realize, I already knew the answer, I just kind of needed to filter through some things. So it was really good.

Overall, communication was an influential aspect in the development of clinical reasoning discussed by the participants. Many discussed situations in which

they were afraid to communicate or ask questions and felt intimidated by the instructor, which they believed adversely affected their learning.

Subtheme: *Intimidator*. Several participants indicated they had instructors who were intimidating and there was a certain amount of anxiety associated with asking questions both in the classroom and in clinical. Participant 10 stated the following about a classroom instructor:

[The instructor] was very knowledgeable, but at the same time she didn't know how to convey that knowledge and just communicate effectively with her students. A lot of my classmates felt like she came across as, I don't want to say condescending, but I guess kind of like superior and above us.

Participant 17 also discussed feeling uncomfortable asking questions in the classroom:

I feel like if I ask questions, I should wait until the end of class and ask [the instructor] privately. Like but I don't want to ask any questions in front of everybody. Because, sometimes [the instructor's] response made me feel like I'm an idiot.

Being comfortable enough with an instructor to be able to ask questions in the clinical setting was also discussed by the participants. Teaching strategies used by clinical instructors to promote clinical reasoning, as discussed by the participants, included questioning. Participant 15 eloquently stated:

One strategy, which was huge, was not making you feel stupid for having the wrong answer 'cause I think being so intimidated by your nursing instructor that you don't even want to guess the answer doesn't facilitate learning at all. I know a lot of students who just felt defeated after every clinical.

Anxiety in the classroom or in clinical was consistently discussed throughout the interviews. Many participants compared the feelings of anxiety with particular instructors with the ease and comfort they had with other

instructors and indicated that comfort with instructors was essential to their learning and thus their development of clinical reasoning.

Participant 9 succinctly discussed the importance of comfort with nursing instructors:

I think the number one most important thing is for you to feel comfortable with them. Because if you don't feel comfortable with your nursing instructor, you're not gonna ask them questions. If you don't understand something, you're not gonna ask them or tell them that you don't understand, because you don't wanna feel stupid, I guess. And if they make you feel that way, then you're not gonna ask them anything and that's not gonna help your learning at all.

Feeling comfortable with an instructor promoted a trusting relationship, which participants indicated facilitated their development of clinical reasoning.

Subtheme: *Trustworthy*. The participants identified trustworthiness as an important characteristic. In every learning environment, classroom, clinical, and simulation, students needed a trusting relationship with their instructor and a belief that the instructor believed in them and wanted them to succeed.

Participant 2 described how a sense of trust with her instructor was important in her ability to learn clinical reasoning:

Approachable, not looking down on you for not knowing the answer that you probably should already know. The instructor that would come to you and ask if you had any questions and would be there and make sure you are, everything's going okay for the day, make sure you're not having any problems, but isn't over your shoulder making sure that you're not making any mistakes all day and pressuring you, not that kind of instructor. Just the instructor that is there if you need them and easily accessible, but not badgering and pressuring you all day and making you feel uncomfortable or really pressured.

Participants stressed the importance of trust in the student-instructor relationship. When trust was not present, students believed their learning was adversely affected. Participant 15 discussed lack of trust in her instructor:

If I didn't have that trust . . . I was afraid to give medications because I didn't trust myself and I didn't trust [my instructor] and so I didn't learn anything in there.

Participants indicated they felt safe with an instructor they trusted and believed they learned more from positive encouragement and guidance than with criticism. Many of the participants indicated instructors who did not give them the answers but helped them to determine the answers themselves enhanced their development of clinical reasoning.

Subtheme: *Questioning*. Participants discussed their experiences with instructors who prompted them with questions and consistently indicated that a questioning attitude among instructors was valuable in their development of clinical reasoning. Instructors who “made them think” benefited student learning the most as stated by Participant 16:

I think at least for me anyway, it kind of helps me to know like, if you ask me and I can tell it back to you, it's like, okay, I do know this. Now I can remember this conversation. But it's like, having that constant, why are you giving this? What is it for? That repetition of the information making sure you know it before you go do it, really kind of helps instill it in your brain.

The majority of the participants appreciated an instructor with a questioning attitude. Participant 3 described a questioning attitude by her instructor:

I liked it when I had instructors that would kind of guide me, not spoon-feed it to me, but kind of coach me and encourage me in a positive way. I also liked it when I was asked questions where it was kind of put me on

the spot and made me nervous a little bit, but I liked being able to have to stand there and think, okay, what am I doing?

Although a questioning attitude was important to the majority of the participants, being questioned by an instructor in an intimidating manner was more frustrating than helpful. Nursing instructors who made students “feel stupid” were not valued and their methods were deemed not helpful in developing clinical reasoning. As exemplified by Participant 14:

Honestly, I think I was more focused on the paperwork and being reprimanded for not being so on top of everything. But at the same time I felt like I was really trying to develop clinical reasoning and clinical judgment the best that I could without having to worry ... I should be thinking about these things but at the same time why are you telling me this and making me feel inadequate?

Nursing instructors who provided positive encouragement along with guidance and coaching in both the classroom and clinical environments were identified by the participants as the most helpful in facilitating their development of clinical reasoning. When speaking about clinical instructors specifically, participants indicated that instructor availability was an essential part of their learning at the clinical site. By availability, the participants meant their instructor was present and easily located when there was a question or a need for assistance.

Subtheme: *Available*. While many of the participants expressed the positive effects on their learning of instructor availability, Participant 8 discussed unavailability of her instructor:

With my [instructor], I had no idea where she went, but it was like when I needed to find her I couldn't find her. It was kind of like getting left in the dark a lot. If I had questions I had to look them up myself on my phone, which you're not supposed to have at clinical. So I could never find her or my assigned nursing instructor.

Participant 7 discussed availability of her instructor as essential to her learning during her first semester in the nursing program:

I think having her around because of her experience, because she has been a nurse for a very long time so she would be able to help us look at it a different way. Because I might not be seeing it correctly the very first time, I might not be doing the assessment correctly. Yeah, no one was really saying this is right or this is wrong so I just went with what I knew, which was not very much.

When the nursing instructor was not available, many of the participants indicated they turned to the nurses on the various clinical units for assistance. If there was not a good relationship between the instructor, the nursing staff, and the students, participants indicated, learning was difficult and often lacking.

Subtheme: *Able to relate to nursing staff.* Many participants believed their clinical instructor was a bridge to the nursing staff. Having a clinical instructor who had a good relationship with the nursing staff made their learning experience better as discussed by Participant 10:

They kind of interacted with the staff really well and I feel like that was kind of a gateway for us as nursing students to be able to interact with the staff as well. By my [final] semester, the staff was really amazing and I feel like it was helpful that they had an interaction with the instructor previously. So they kind of knew like, "Okay, yeah, these are nursing students, but the instructor is cool. She's not gonna let hem kill any of our patients" type of thing.

Participant 12 also noted the benefit of a good relationship between instructors and nursing staff in the students' ability to learn:

That [clinical] was wonderful. And our instructor had a good relationship with the nurses as well. So maybe that made a difference. She knew most of them and so she had a good relationship with them and therefor they had a good relationship with us perhaps.

Conversely, a bad relationship between the instructor and nursing staff was perceived as detrimental in the learning process. Participant 9 indicated:

[It] was very difficult because I think there was a strange dynamic between our nursing instructor and the nurses on the floor. I think there was something going on there. But that was a really difficult clinical. I didn't get a lot out of it, honestly because it was disorganized and we really didn't, the nurses really didn't wanna deal with us on the unit.

In summary, instructor characteristics was a major theme identified throughout the interview process. Participants believed their learning was directly affected by the attitude, competency, approachability, and level of trust with their instructors. Candela et al. (2006) discussed the idea that students and instructors work together in the learning process and it is ultimately the students who have the final determination if learning has occurred. It is the responsibility of the instructor to provide opportunities for students to learn and to be able to communicate well the expectations for a course without belittling the student. Learning is enhanced by a trusting relationship and an instructor who provides guidance, coaching, and support in both the classroom and clinical (Del Bueno, 2005; Tanner, 2006).

Participants indicated a questioning attitude from instructors was an essential component to their learning process. Nursing instructors who present students with questions as well as those who allow students to ask questions are most effective in enhancing the development of clinical reasoning in nursing students (Del Bueno, 2005; Di Vito-Thomas, 2005). Comfort and trust with nursing instructors as well as staff nurses in the clinical environment benefitted

student learning. Chuan and Barnett (2012) noted that a good relationship with the staff nurses positively impacted student learning.

The second most frequent participant experience identified in the transcripts, that affected the development of clinical reasoning, was the environment in which the learning took place. The participants discussed the classroom, clinical, and simulated experiences they had in their baccalaureate nursing program and how each environment impacted their development of clinical reasoning.

Theme Two: Learning Environment

Learning environment was discussed as it related to the overall physical as well as emotional environment for learning. Was the environment in which each student was placed conducive to learning or did it negatively affect the student's ability to learn? Specific environments most beneficial to learning clinical reasoning are discussed later in this chapter. Many participants focused specifically on the clinical environment as they believed clinical learning was crucial to their development as a nurse and their ability to use clinical reasoning. Often the participants spent a large portion of their clinical day with the staff nurses on their units and being able to discuss patient care with them was essential to understanding the reasoning behind the care.

Subtheme: *Welcoming staff*. The first subtheme discussed is the relationship students had with staff nurses on their clinical units. Participant 1 discussed the preceptorship in the final semester and the relationship with the assigned nurse:

Though its kind of on the part of the nursing student to ask a lot of questions, and to have the dialogue with their preceptors, or whoever they're paired up with for the day, to understand their thinking behind their decisions and stuff. So observation is a big part of it, but I often think you have to have some interaction both with the patient. So there has to be a good balance between observation, and good dialogue, and interaction between the two.

Throughout the interview process, participants consistently indicated that the attitude of the nursing staff toward nursing students was an essential component to their learning experience. A welcoming staff that appreciated the nursing students allowed the students to benefit from the nurses' experience. While the clinical instructor was one factor in the students' success, being able to observe the nursing staff interact with patients and having the nurses give tips and pointers about "real nursing" to the students greatly enhanced their development of clinical reasoning. Participant 20 described one unit where the nurses were exceptionally helpful:

The nurses on that floor were phenomenal. They were very, very helpful. Every nurse I was assigned to, if it had something to do with a foley cath or anything like that, if I didn't know how to do it, they'd be like, well, you're going to do it. Let's go. It was just a better atmosphere.

Many of the participants described staff nurses as being helpful to their development of clinical reasoning. Participant 15, however, discussed the adverse effects on learning of an unwelcoming staff:

That clinical was difficult I think because of the dynamics on the unit and stuff like that. Well, the nurses on the unit I think didn't like students very much and didn't trust students in the slightest, which is understandable, but, so there was a lot of, you just always felt like you were in the way.

Strained relationships with the staff nurses were detrimental to student learning as Participant 14 indicated:

I did not like where we were at because the nurses there, I feel like they didn't want us to be there. I felt like they were always doing something else and they would just leave us.

Participant 17 also discussed the negative impact of bad relationships with staff nurses:

The nurses in the hospital were really mean. They did not want us. It's just like, they'd never say it to us, but there was a feeling they didn't want us to be there, you know? And its just like, they are not willing to teach us, they are not willing for us to participate in any activities to see what they do, so the majority of the time we were clueless.

Participant 16 discussed the disadvantage of an awkward relationship with nursing staff on effective learning:

It was like, I feel like you don't want me here kind of thing. It wasn't that we didn't have a chance to learn. Our teacher was there, and she would show us a bunch of stuff and explain everything to us, but it was just like, I feel like I'm an intrusion. It wasn't so much the learning itself; it was just the environment part of it.

Participant 20 indicated the nurses on one of her clinical units were unkind:

I just think the nurses weren't very kind, so a lot of us secretly hid out most of the clinical. We didn't really want to interact with the nurses because they weren't very kind, and we didn't really know all that we were supposed to do.

Although nursing instructors were available to assist the students when the nursing staff were not approachable, the number of students in each clinical group precluded much one on one time with the clinical instructor. Participants

expressed their beliefs that fewer students in each clinical group would have allowed more time for each of them to discuss patient care with the instructor and therefore would have enhanced their development of clinical reasoning in the clinical environment.

Subtheme: *Clinical group size*. Many participants discussed the disadvantage of having a large clinical or classroom group on their ability to learn and develop clinical reasoning. During clinical, students indicated their time spent with the clinical instructor was minimal and therefore their learning was diminished. As Participant 15 aptly expressed:

It takes a long time to give medications . . .you spent a lot of alone time because your instructor had to be or wanted [to be with each student]. I think its good that the instructor was with each student 'cause I think some of the nurses out there might be like, "Oh well you can just draw this out and give it." But so that was, I think, a lot of time just kind of waiting around for everybody else to give medications. So that's when I first saw the benefit of smaller clinical size, clinical group size.

Large clinical group size was a topic many participants discussed. Participant 16 described her views related to clinical group size:

And it was like you had some interaction, and you had patients with interesting things going on with them, but the, you didn't really get a lot of one-on-one time with your instructor because she was getting pulled in 10 different directions.

Student numbers in the classroom did not present as significant a deterrent to learning and in fact many participants indicated a large class size decreased the possibility they would be called on by the instructor, which eased the stress of that environment. Many participants indicated the smaller number of students in simulation enhanced their learning. As Participant 1 mentioned:

For learning it was great, because it was a small group. Being able to interact with each other, and the instructor, for more one on one. And have more responsibility for your knowledge.

While clinical, classroom, and simulation experiences were enhanced by good relationships and smaller groups, the amount of work associated with each aspect of the program was overwhelming to many of the participants. Class assignments, exams, care plans, and clinical paperwork were discussed for each of the courses in the baccalaureate nursing program. Participants expressed feelings of stress over the amount of work assigned in some of the courses and indicated their development of clinical reasoning suffered from too much emphasis on “busywork.”

Subtheme: *Work overload*. It was apparent throughout the interview process that participants felt overloaded with paperwork. Many of the courses in the nursing program were discussed as being content heavy and laden with assignments the students believed distracted them from experiential learning. The amount of paperwork required and the emphasis on completing every assignment perfectly created a stressful environment in the classroom and clinical and negatively impacted learning for the students. Participant 13 discussed how much time was spent preparing for clinical prior to the experience:

You have to prepare. You get a patient assigned to you before the day of clinical. You had to go to the hospital. You had . . . a sheet and you have to put like your patient's information . . . So just to fill out the worksheet, not including travel time to the facility, but just to fill out the worksheet was probably a good five or six, sometimes eight hours of work to do it properly. My clinical was on Monday evening. So you could come in Saturday evening or you could come Sunday.

Participant 17 expressed:

But it was just a lot of worksheets, and sometimes you just feel like a robot. Like, work, work, work, and that, you know, its like I feel like you miss out, like I feel I don't really know why am I doing this besides a good grade for her class.

Information overload in the classroom was distracting to the students and took away from their ability to develop clinical reasoning. As Participant 14 noted:

Trying to stay on the topic of clinical reasoning, honestly, that was probably the last thing on my mind in lecture because it was information overload. I was so worried about trying to get the factual information down that I wasn't thinking what if, what if?

Participant 3 discussed two different courses in the nursing program where learning was adversely affected by the workload:

I mean it was just so much information packed into one semester and I thought the way that the course was taught it didn't really give us an opportunity to truly learn the information. There was a lot more of memorization for the sake of passing an exam. Just because there was such a high volume of information, I didn't feel like I ever really got a good grasp of what was being taught and then being able to see it, in person as a nursing student.

Another component of work overload was the expectations from instructors that students "know everything" before class or clinical. As Participant 3 related:

I felt like when we walked into clinical it was as if we were expected to know everything. To remember everything that we had gone over in the lecture course, to know things we had never seen or heard of in our lecture course. So that made it very difficult when we were trying to ask questions because we weren't familiar with something and were almost kind of shot down in a way. By the instructor. And they would get very frustrated with us and then just not willing to help us understand any better at all.

Nursing is a profession in which experiential learning in various environments is essential to the development of clinical reasoning and progression in the discipline. The importance of the clinical environment on

student learning has been noted (Baxter & Rideout, 2006; Edwards, et al., 2004; Gidman et al, 2011) and students have indicated that positive relationships and a welcoming attitude from staff nurses have a beneficial impact on learning (Chuan & Barnett, 2012). Nursing students begin with a minimal base of knowledge and skill and work toward meeting the goal of becoming a competent provider of safe patient care (Banfield, et al., 2012; Benner, 1984/2010; Kuiper, 2013; Tanner, 2006). Curricula that emphasize content and the memorization of textbook material do not prepare students for the application of nursing knowledge in practice (Candela et al., 2006; Del Bueno, 2005). Active learning in the clinical environment with a variety of experiences expands and enhances the development of clinical reasoning (Candela et al., 2006; Hoke, 2005).

Theme Three: Progression of Learning

Participants consistently indicated that learning clinical reasoning was a process through which they progressed each semester in the baccalaureate program. Their first semester was focused mainly on the basics of disease processes, patient care, and patient safety. Participant 11 eloquently stated:

I would say I definitely started at absolute zero. Just not knowing what I could do, what was in my scope of practice, necessarily and then kind of learning from my mistakes and from other people's mistakes, this is what would be best. I guess it would go in the order of, this is the safest thing to do, and you know, if I have several options that are all safe, what is the fastest option, or sometimes what would my professor do.

As students progressed through the baccalaureate program, the emphasis shifted from basic skills to a deeper understanding of the nursing process and the development of new ways of thinking. Instructors began to emphasize clinical

reasoning through application of knowledge to practice. Those nursing instructors who were able to share their own experiences in the classroom and clinical environments were able to form a holistic picture of nursing for the students.

Subtheme: *Instructor knowledge*. Nursing instructors are required to be licensed in their discipline and must maintain their education throughout their career as nurses. As instructors, they bring their own experiential knowledge to the learning environment and act as role models of the professional nurse. Instructors who were most knowledgeable in their particular field of nursing helped the students bridge the gap between classroom and clinical. Participant 14 described the benefit of an instructor with knowledge of the course:

In the cases of the instructors who knew her stuff, I felt like, like I said, it was a conversation. It flowed easily. They knew what they were talking about, they could tie in the factual information and talking about clinical so easily that it flowed and I was okay, I get this.

Participant 9 discussed her instructor's knowledge as an asset to her learning:

She was, although she was intimidating because nursing instructors are intimidating, she was easy to talk to. You could ask her anything. Didn't feel like she thought you were stupid. She was very smart and willing to pass on and share her knowledge. Just really, it was good to be with her.

Instructors currently in practice added a different dimension to the students' learning as discussed by Participant 14:

Our instructor knew her stuff. She explained it in such a way where it was easy for me to understand and she herself had experience, she continues to have, she works. I forgot where she works, but she does this.

Instructors who were able to share their own experiences in nursing as well as with their own progression of clinical reasoning were able to connect with the students and provide guidance on how to connect clinical to the classroom.

Subtheme: *Class/clinical connection*. As students entered their senior year, a more holistic picture of patient care began to emerge. Connections were beginning to be made between classroom and clinical. Participant 15 discussed the connections she developed between classroom and clinical:

And so I enjoyed being able to see the things in clinical and really be able to, I felt like class connected really well with what we were seeing in clinical and stuff like that and I felt a lot more comfortable with patients in clinical because I knew what was going on and in previous semesters we'd only seen a glimpse of each of those things and not learned about really the management of them.

Participant 19 also discussed the connection between classroom and clinical and how that benefitted learning progression:

The teacher was very, very good. She wanted us to think of the things we were learning in a care plan kind of way so we would initially start thinking about how we were going to go about treating the patient with whatever problem it was. She is very focused on clinical reasoning I feel like. I feel like she really wanted us to know the clinical reasoning behind everything, all the management of care, all the care that we were giving. But that clinical and that class went together really well.

Participants consistently indicated that the ability to connect classroom with clinical made their learning more relevant. Seeing the holistic picture of the patient and care provided gave the students further insight into the need for strong clinical reasoning in practice.

Subtheme: *Prior healthcare experience*. Connecting classroom with clinical was an important aspect of the learning process and several participants

indicated their prior healthcare experience was an asset in seeing the “real world” of nursing. Many nursing students enter their program of study with prior healthcare experience. Several of the participants had worked as certified nursing assistants (CNA) before beginning nursing school. Participant 9 described the confidence prior healthcare experience provided in the first semester of nursing school:

There was a mix of us and some had prior experience, some didn't. And those that didn't have prior experience, it took a little bit longer for them just to get, I guess, confident in the setting, not feeling nervous, not wanting to hurt the patient, really worried about touching them and that sort of things. So it was, I felt lucky that I had that experience.

Participant 12 further explained:

Even if it wasn't skills, I think ... you have more confidence because you've already interacted with people who you know are strangers.

For those students without prior healthcare experience, the first semester presented challenges in how to speak with patients and family members and how to interact with other members of the healthcare team. However, each participants indicated that once they started the nursing program, they began to gain comfort in the nursing process and caring for patients.

Subtheme: *Basic to complex*. The first semester of nursing school for many students was a time to get comfortable with the nursing role and to learn basic skills. Clinical reasoning was only beginning to develop. When asked if clinical reasoning was a focus in the first semester of nursing school, Participant 20 stated:

No, just because I was more focused on the care of the patient. I didn't think outside of the class how everything relates. It was more what we

learned that head to toe assessment, different parts of it, so I was focusing on every single part and knowing that versus actually looking at how the person responds to it.

Many participants described their third clinical experience as the point where clinical reasoning and patient care began to make sense. Participant 18 related how the progression of basic to complex in the baccalaureate program became evident:

It made sense now, this semester, when we were in clinical that all these things are connected to each other and you know one part and you know another part and somehow it comes together.

Participant 11 indicated that at the end of her nursing program, she wished she had been more proactive in her learning. Her advice to future nursing students was:

Just do it, just try it. If the nurse asks you to do something, just try it. She's not going to, or he's not going to ask you to do anything they thing is going to be harmful. Just try.

When asked about their learning and the end result, every participants indicated that the ability to use clinical reasoning in practice was the goal of their nursing program. Each participant realized this goal at a different time in their progression through the program, however it was unanimously offered as the most important part of their education.

Clinical reasoning in nursing begins with learning the basic knowledge of the science and progresses to an understanding of how to apply that knowledge to practice (Victor-Chmil, 2013). Providing a solid base of information related to clinical reasoning in nursing is the first step in preparing nursing students to practice safely (Jensen, 2013; Tesoro, 2012). Nursing students develop clinical

reasoning over time through active, experiential learning (Banfield et al., 2012; Debourgh & Prion, 2012; Hoke & Robbins, 2004; Khanyile & Mfidi, 2005; Levett-Jones et al., 2010) and participants in this study indicated their development of “new ways of thinking” was important in their preparation for practice. Learning to connect new knowledge to existing knowledge and apply it in the clinical environment is key in developing clinical reasoning (Murphy, 2004).

Theme Four: Importance of Clinical Reasoning

As stated previously in this chapter, the baccalaureate nursing students who participated in this study recognized the importance of clinical reasoning throughout their education. As the students progressed from their first semester to their last, and past graduation, they began to see nursing as more than a profession of competency in psychomotor skills. Each of the participants discussed their progression to viewing nursing practice as a holistic approach to patient care.

Subtheme: *Big picture*. Clinical reasoning was described by many of the participants in this study as the ability to finally see the big picture in patient care. Participant 1 discussed how clinical reasoning began to make sense as an integral part of professional nursing:

So clinical reasoning is taking those things, those building blocks that you learned first semester, and making them a big picture for your patient and then planning their care out. Clinical reasoning starts to take on a huge, like team, as you go through nursing school, because you can't depend solely on your own clinical reasoning when it so advanced that you start to go outside of, like nursing, and have to ask somebody. That's when you can really see that your clinical reasoning makes sense.

Once the students began to see the bigger, more holistic picture of nursing, they indicated they realized how important clinical reasoning is to the delivery of safe and effective patient care.

Subtheme: *Safe patient care*. Participants consistently indicated that clinical reasoning was essential to the delivery of safe patient care. As Participant 16 eloquently described how clinical reasoning is important in providing safe patient care:

If all you know is everything on paper but you don't know how to do it with a patient, then you're not going to be any good to them. But if you only know, oh, I have to give this medication but you don't know why you're giving it, or what its for or what kind of side effects it could case, and then something goes wrong, and you don't know what to do, you could harm your patient in that way.

Safety of the patient was also a priority for Participant 11:

You have to be able to make decisions on your own. You have to use your nursing judgment – our professors use that phrase a lot – you have to be able to say, I can't ask anybody, "What should I do?" But you have to think safely, obviously, quickly, and what's going to be the best impact for the patient. I mean, it's difficult, it's hard, it's not necessarily basic instinct, definitely learned, but I would say it's absolutely vital to your success.

Participant 19 indicated that better nursing care is provided when clinical reasoning is used.

I feel like it can go above and beyond just the list of things to do, like if you see a wound and you know these are the things you are supposed to do, clinical reasoning helps to see other things around that you could take care of, I feel like rather than just doing what you're supposed to do. I'm trying to explain this. I just think you can give better care with clinical reasoning.

Participant 1 discussed the importance of clinical reasoning in nursing:

Because if we couldn't prove our clinical reasoning for our patients, then why are we getting paid more than someone who has maybe less

education behind their title? So, job security one. And also, the safety of our patients.

Along with learning clinical reasoning as a student, Participant 1 discussed how nurses use clinical reasoning in patient care:

And so she had to reason through that process. And she used clinical reasoning to teach [the family] and educate them on what was going on with their family member and our patient.

Participant 3 also believed clinical reasoning was very important in patient care:

Nurses, it's not all about so many stereotypes of just passing medications all day. It's being able to know what you're working with and anticipate and not blindly accept an order just because a doctor writes it, you've got to be able to look at something too and say well, this doesn't seem right. Extremely important.

The ability to clinically reason is one of the intended outcomes of nursing education and is important in the development of safe clinical practice (Hoffman et al., 2007; National Council State Boards of Nursing, 2006, 2009; National League for Nursing, 2003, 2005). Each of the participants in this study discussed clinical reasoning and the importance of it in providing safe patient care. Many discussed how their view of nursing had changed since the beginning of their baccalaureate nursing program. As their knowledge and skill increased, and they had more classroom and clinical experiences, they began to see that being a nurse was more than just passing medications to patients. Although the ability to use clinical reasoning was offered as the ultimate goal of nursing education, the best place to learn clinical reasoning during school was not unilaterally supported.

Theme Five: Best Place to Learn Clinical Reasoning

Nursing students responded to the question, in which environment did you best learn clinical reasoning, with a variety of answers. Most students indicated both clinical and simulation as the best places to learn how to make patient care decisions. The classroom was an excellent place to learn the basics about pathophysiology and disease processes, but active learning in the clinical environment enhanced their development of clinical reasoning the most.

Subtheme: *Classroom*. Participant 19 discussed the development of clinical reasoning in the classroom:

Clinical reasoning, I feel like we learned in that class because we were learning why we were going to give the care we were going to give for whatever was wrong with the patient. So you really started to develop clinical reasoning there because we had to figure out why were going to do this, why were going to do that, because if you didn't know why you were doing it, then it doesn't really make sense to do it.

The majority of participants indicated that clinical reasoning was best learned experientially. Although the classroom was an excellent environment in which to learn about disease processes and management of care overall, safe clinical practice was best learned actively. Many participants indicated simulation helped them with clinical reasoning because it was a safe place to make mistakes while not harming actual patients.

Subtheme: *Simulation*. Simulation was consistently deemed a safe place to learn clinical reasoning. Participants indicated they enjoyed the aspect of being able to make mistakes in simulation that would have been detrimental to

patients in the clinical setting. Participant 16 described the development of clinical reasoning in simulation:

Simulation lab was good. It was a nice chance to be able to go in there, and if you made a mistake, it was okay. And I felt like it was like a safe environment to learn, and you could try it on the mannequins, and you could be like, okay, let's stop. Let's try that again.

Participant 11 believed clinical and simulation were beneficial in different ways, but were equally beneficial in developing clinical reasoning:

They're two different things. Simulation is almost like lecture and clinical, kind of bridges that gap between lecture and clinical. You can't replace clinical, because you just have to have the experience of going and not knowing what you're going to find when you walk into that room. [Simulation] gave you the chance to watch other students, what they would do, and learn from their mistakes, or learn from what they're doing correctly.

Participants indicated they wished they could have had more simulation experiences. Many believed it would have enhanced their clinical reasoning and better prepared them for actual clinical practice. While simulation was a place where the baccalaureate nursing students could practice skills, clinical was discussed as the place where "real life" experience and actual patient care benefitted the development of clinical reasoning.

Subtheme: *Clinical*. The data showed the majority of nursing students believed they developed clinical reasoning best in the clinical environment with hands on care of live patients. Participant 9 discussed working on real patients in clinical as the key to developing clinical reasoning:

Because you are working on real patients with real diseases. You can see them in front of you. You can look at their labs and their assessment and everything that's going on with them. And then you can decide, you can

see what the plan of care is for them, what their, what's going on with them and what they're doing to get this patient better.

As stated by Participant 19:

Class really helped with clinical reasoning, but mostly the clinical experience over classroom and simulation.

Participant 18 described her experiences:

I mean with class you can only learn so much and even though you know everything you still don't know anything. And then simulation, there's only so much they can simulate in the lab. I think clinical had the most variety and the most different environments for a nurse, I guess, that you can't learn in the classroom or a simulation. So I think there should be more clinical aspects to nursing because every day after clinical, even though it's not ours, I feel like I've learned so much rather than just sitting in class and hearing a teacher talk.

Referring to the clinical course in the senior semester, Participant 19 further explained:

That was the first clinical I can honestly say I enjoyed. It helped with clinical reasoning a lot. I felt like things were coming together. Things were tying together and I actually felt more like a nurse than I had in other semesters, so I felt like the clinical reasoning aspect of that was, I think the clinical helped a lot and probably more than the class.

The development of clinical reasoning as an outcome of baccalaureate nursing education was supported by each of the participants in this study.

Although each student's progress through nursing education was unique, certain aspects of the process were unanimously agreed upon. Learning to be a safe and effective healthcare provider was believed by the participants to be the goal of baccalaureate nursing education and the ability to use clinical reasoning in all aspects of nursing care was crucial in achieving that goal.

Summary

This chapter addressed the management, analysis, and synthesis of the data gathered through the qualitative interview process used in the study.

Themes and subthemes were listed and discussed along with verbatim quotes from study participants supporting them. Excerpts from the literature were discussed in support of the themes identified by the researcher.

CHAPTER 5

DATA SYNTHESIS, CONCLUSIONS, RECOMMENDATIONS

This chapter presents a synthesis of the data gathered through interviews with participants in this qualitative study. Recommendations for nursing education and for further research are provided. The chapter concludes with final reflections of the researcher.

Data Synthesis

This study focused on pre-licensure baccalaureate nursing students' perceptions of their development of clinical reasoning. Twenty current pre-licensure baccalaureate nursing students or recent baccalaureate nursing graduates (3 months) participated in this study and shared their views on their nursing education, their instructors, and their progression through the baccalaureate nursing program. Each participant shared individual thoughts, ideas, and passions.

The themes that emerged from these interviews included instructor characteristics, learning environment, progression of learning, importance of clinical reasoning, and best place to learn clinical reasoning. Overwhelmingly, the participants viewed clinical reasoning as an essential component of both their baccalaureate nursing program and the practice of nursing. Each participant's

words described a journey from learning the basic skills of being a nurse to seeing the bigger picture that would lead them to the development of clinical reasoning and the provision of safe and effective patient care.

Providing safe and effective patient care should be the goal of every nursing professional and teaching students to provide care in a manner that keeps patients free from harm is the overarching goal of nursing education (Chuan & Barnett, 2012; Daly, 2001; Debourh & Prion, 2012; National Council State Boards of Nursing, 2006, 2009). The conceptual framework for this study, Benner's Novice to Expert Theory (1984/2010), can be applied to the process whereby nursing students gain the requisite knowledge to provide patient care. Benner's (1984/2010) work focused on nurses in practice, while this study focused on nursing students preparing for practice. Each participant discussed their individual journey through the baccalaureate nursing education process, which began with learning the basics of patient care and progressed through courses, clinical experiences, and simulation experiences to more complex thought processes leading to their development of clinical reasoning.

Eight recently graduated pre-licensure baccalaureate nurses were interviewed for this study and contributed their thoughts and perceptions regarding their preparation for practice. It was noted throughout the study that participants entering their final semester were on the cusp of incorporating clinical reasoning as an inherent part of their practice. Similarly, the participants who were new graduates expressed a belief that the final semester in nursing

school brought everything together for them and they were able to see that what they had learned would carry them through to orientation as new nurses.

Although the newly graduated participants had the most insight into the ultimate development of clinical reasoning, each participant throughout the study identified instructor characteristics, course structure, environmental components, and learning progression that enhanced their clinical reasoning. Instructors were valued for open communication, availability, questioning attitude, approachability, and knowledge of subject matter. Instructor characteristics that negatively affected student learning included intimidation, disorganization, poor relationships with nursing staff, and inability to relate to the students. Overall, participants valued their instructors and the knowledge they were able to convey and displayed respect for the difficulty inherent in teaching patient care to pre-licensure nursing students.

Benner's (1984/2010) novice to expert theory was supported in this study from the perspective of a novice nursing student progressing through nursing school to become an expert nursing student. Although each of the participants understood they would be beginning as a novice nurse once they graduated, each of the participants indicated their learning had progressed incrementally through each semester of their nursing program. The newly graduated participants indicated they were prepared with basic knowledge and skills, as well as a basis of clinical reasoning to begin providing safe and effective patient care in the acute care setting.

The purpose of this study was to determine how nursing students best develop clinical reasoning while in nursing school. The participants in the study were provided with a definition of clinical reasoning at the beginning of the interview and then were asked a series of questions related to what and how they developed clinical reasoning. The voices of these nursing students provided rich data about what they believed was most relevant to their learning and how they best learned in varied settings. Each participant's words added more depth to the data, further completing a picture of the most beneficial methods and environment for the development clinical reasoning.

Significance of the Study

The purpose of this descriptive phenomenological study was to explore the development of clinical reasoning in nursing students from their perspectives. Discussing their lived experiences in individual interviews provided a wealth of knowledge for the researcher to examine how nursing students learn about and develop clinical reasoning. The topic of clinical reasoning in nursing students has been studied from the faculty perspective and how it is taught (Kuiper, 2013; Kuiper et al., 2009; Lasater, 2007; Levett-Jones et al., 2010). Research has been conducted related to clinical reasoning in the clinical setting, simulation, and the classroom (Bartlett, et al, 2006; Jensen, 2013; Kuiper, 2013). Each of these studies provided excellent data to change nursing education practice. However, the development of clinical reasoning from the nursing students' perspective is an essential component in planning curricula and strategies for teaching in nursing school (DiVito-Thomas, 2005) and has not been thoroughly

examined through empirical studies. This study was significant because it delved into nursing students' thoughts, values, and attitudes toward their learning, as well as how successful they believe their nursing program was in providing the basis for their professional practice.

Safe and effective patient care is the goal for all healthcare providers and the ultimate provider of bedside care is the nurse (Institute of Medicine, 2010; National Council State Boards of Nursing, 2006, 2009; National League for Nursing, 2007). Educational preparation for nurses must continually be reviewed and updated to meet the needs of nurses in the current healthcare environment (Candela & Bowles, 2008; Diekelmann, 2005; Hoffman et al., 2011; Hoke, 2004; National League for Nursing, 2003, 2005). As information and technology change, so must nursing education to prepare the next generation of nurses for the complexity of patient care (Candela & Bowles, 2008, Cruz, 2009; National League for Nursing, 2003, 2005). Participants in this study were eager to learn while in nursing school and expressed their views on how well they believed they would be or were prepared for practice.

Implications and Recommendations for Nursing Education

The development of clinical reasoning in baccalaureate nursing students has been the focus of many studies, dissertations, and publications, several of which have been discussed in previous chapters. Clinical reasoning in patient care is an essential skill that differentiates licensed from unlicensed healthcare personnel (Banning, 2008; Benner et al, 2010; Carr, 2004). The qualitative interview process utilized in this study provided the researcher with invaluable

information related to the process of developing clinical reasoning from the nursing student's perspective. Students' actual words are the only true source for determining how they learn and if learning has occurred for them (Candela & Bowles, 2008). Based on the data gathered through individual interviews, the researcher has derived the following implications for nursing education:

1. The development of clinical reasoning in baccalaureate nursing students is a process occurring throughout nursing education.
2. Baccalaureate nursing students develop clinical reasoning best from instructors who approach teaching with a focus on the learning needs of the students.
3. Baccalaureate nursing students learn clinical reasoning in the classroom, simulation, and clinical environments with support and encouragement from faculty and clinical nursing staff.

Clinical Reasoning as a Process

Participants in the study expressed how the progression of their development of clinical reasoning provided them with an understanding of the importance of clinical reasoning in the delivery of safe and effective nursing care. Participants consistently discussed the nurses' role in the healthcare team and how clinical reasoning differentiated them from other healthcare professionals and placed them at the forefront of safe patient care. Nursing education should provide nursing students with the tools to begin seeing the big picture in safe patient care delivery (Fero et al., 2009). Students should be given the experience of being a part of the healthcare team and determining their role as a

nurse (Gidman, et al., 2011). In learning to “think like a nurse” students realize they are more than dispensers of medications and givers of bed baths (Tesoro, 2012). Participants overwhelmingly concluded that nursing education provided them with a new view of nursing and an understanding of the responsibility placed on nurses to provide safe patient care. The majority of participants indicated they believed their nursing instructors focused on the learning needs of their students, however, the interviews revealed that many of the methods and teaching strategies used in nursing education are ineffective and should be reviewed and updated to enhance the development of clinical reasoning in pre-licensure nursing students.

Learning Needs of Students

The Institute of Medicine (IOM) has recommended that changes be made in nursing education to keep pace with healthcare in the 21st century (Institute of Medicine, 2010). Nursing instructors should focus on student-centered learning rather than teacher-centered instruction (Candela et al., 2006). Baccalaureate nursing programs should place emphasis on how students learn and instructors should evolve and change to meet the needs of a diverse student population. Many of the participants in the study were non-traditional nursing students, indicating, they were not recent high school graduates obtaining their first college degree. They came to nursing school with life experience, families, past employment, and responsibilities other than just taking classes. Instructors must recognize that each student is an individual and should be treated with respect for what they bring to the profession (Candela & Bowles, 2008).

Healthcare is a fluid discipline. Changes are made daily based on evidence gained through research and practice. Nursing education has not necessarily kept pace with the changes in nursing practice (Institute of Medicine, 2003, 2010; National League for Nursing, 2003, 2005; National League for Nursing Foundation, 2009). Baccalaureate nursing students today are far more advanced technologically (Berry, 2009; McCurry & Martins, 2010) than many of the current faculty members who graduated nursing school two decades ago. Healthcare itself is more technologically advanced and education should reflect the real world of nursing practice (Baldwin, 2002; Institute of Medicine, 2003). Instruction in the classroom, simulation, and clinical environments should be based on the evidence in actual practice and students should be guided through actual situations to develop clinical reasoning for safe practice.

Expectations for student learning in the clinical setting should be well communicated between students, instructors, and staff nurses in order to ensure the best possible experience. Communication is key in developing an environment where students can learn from experienced nurses while being supervised by a knowledgeable nursing instructor. The researcher has observed that on many clinical units, nursing instructors supervise up to 10 clinical students, so they may rely on the nursing staff to provide education and direction regarding patient care. If the nursing staff are already overburdened by their own patient workload, or if they are unwilling to share their knowledge and experience, students may spend large amounts of time waiting for the nursing instructor to be free to supervise their activities.

Many of the participants in this study discussed the benefit of fewer students in a clinical group. Smaller clinical groups are essential in providing time for student and instructor to communicate one on one and for the instructor to provide immediate feedback on student performance. Instructor questioning and debriefing of students and discussion of patient care activities enhances students' development of clinical reasoning (Duchscher, 2003). Down time in clinical waiting for an instructor to supervise implementation of nursing activities is time lost in nursing education (Chuan & Barnett, 2012).

It is important for nursing faculty to understand that overloading nursing students with content and assignments does not produce better clinical reasoning (Del Bueno, 2005). Time spent with nursing faculty in experiential learning settings helps to ensure students are able to apply what they have learned in the classroom to practice. Basic knowledge gained from books and classroom discussions provides a basis for the provision of safe and effective patient care.

Support and Encouragement of Faculty and Nursing Staff

Nursing students' learning is enhanced by positive relationships with nursing instructors who teach with respect for their students (Cassimjee, 2006; Chuan & Barnett, 2012; Gidman, 2011). Belittling speech and intimidation are not productive ways to encourage nursing students to perform at the highest level of student practice. Coaching and guidance from knowledgeable instructors on safe nursing practice benefit learning as well as build confidence and instill value of the nursing profession (Benner et al., 2010; Casimjee, 2006; National

Council State Boards of Nursing, 2006, 2009). The focus of nursing education should be to prepare a generation of nurses who are capable of providing patient care for complex patients in an ever-changing healthcare environment (Bartlett et al., 2008; Candela & Bowles, 2006).

Throughout the interviews conducted for this study, participants indicated a negative relationship with their instructor did not benefit them in the learning process. Although instructors should maintain leadership in the classroom and in the clinical setting, students' voices must be heard and respect for learning must be promoted. As reflected by some of the participants in this study, no student should have an encounter with an instructor that leaves them feeling inadequate, stupid, or unable to learn.

Positive working relationships among nursing staff, instructors, and students is also essential to the development of clinical reasoning (Baxter & Rideout, 2006; Chuan & Barnette, 2012). Nursing instructors are the bridge between the student nurse and the staff nurse. If the instructor does not have a positive relationship with the staff nurses on a clinical unit, the students will not benefit from the experience. Additionally, if students do not have a positive attitude toward the staff and the experience, the quality of learning will be adversely affected (Chuan & Barnett, 2012).

Recommendations

Based on the implications discussed in the above paragraphs, the researcher presents the following recommendations:

1. Clinical reasoning should be the focus of nursing education from the first semester of the program until the last. For students to complete nursing school and enter the practice arena prepared to deliver safe patient care, every course in nursing school should focus on students' development of clinical reasoning.
2. Faculty members should approach learning from a student-centered perspective. Faculty should reflect on their teaching strategies and evaluate their effectiveness in facilitating the development of clinical reasoning. Outdated strategies that are teacher focused and courses that are content laden need to be updated to reflect newer student centered strategies that promote learning.
3. Clinical reasoning should be emphasized throughout the learning environments including classroom, clinical, and simulation. The learning environments for nursing students should be evaluated to ensure students are benefitting and progressing in knowledge and skill acquisition. Continuing to use clinical sites where students are not supported and using methods in the classroom that do not encourage the development of clinical reasoning negatively affects student performance and ultimately, their ability to safely enter practice.

Focus on Clinical Reasoning

Clinical reasoning should be emphasized in nursing education throughout every semester of the program. Classroom, clinical, and simulation courses should be consistent in the definition of clinical reasoning used and the students

should be aware from the start of the goals and expectations for learning clinical reasoning. Learning opportunities should be focused on the development of clinical reasoning and safe nursing practice. Participants in this study overwhelming recognized the need to be a part of the healthcare team and the importance of every member of the team in using clinical reasoning in practice.

Strategies for Promoting Clinical Reasoning

The development of clinical reasoning in baccalaureate nursing students is dependent on the quality of instruction provided in nursing school. As participants in this study indicated, certain methods for teaching were not as effective as others in promoting their development of clinical reasoning. Along with nursing instructors maintaining the habit of lifelong learning, nursing school curricula should be continually updated to ensure new nurses are prepared to step into practice with the knowledge and skills to provide safe and effective patient care. Clinical courses should focus on the development of clinical reasoning through active learning experiences and instructor guidance.

Evaluation of Learning Environments

Emphasis should be placed on the learning environment as well as the content taught in the classroom, clinical, and simulation. Nursing students are better able to develop clinical reasoning in an environment in which they feel safe, respected, and welcome. Schools of nursing and nursing instructors should work to build positive relationships with healthcare facilities where clinical courses are held and determine how effective particular nursing units and staff

nurses are in the overall goal of learning safe and effective patient care.

Instructors should thoroughly evaluate nursing units at the end of each semester from the perspective of the students as well as the nursing staff and make changes if the findings indicate the unit was not a positive learning environment. When changing clinical units is not an option, nursing faculty should work with nursing staff and managers on clearly delineating expectations for the learning experience and developing a working relationship that will benefit the students without burdening the nursing staff.

Implications and Recommendations for Future Research

Key implications for future research include:

1. Continued exploration of students' perceptions of learning in baccalaureate nursing programs and their views on improving how clinical reasoning is taught.
2. Strategies for promoting clinical reasoning based on student learning needs rather than faculty teaching needs must continue to be explored to improve new graduate nurses' preparation for practice.
3. Focus on the continued development of teaching tools incorporating technology to promote and develop clinical reasoning with baccalaureate nursing students is imperative to ensure preparation for practice.

In determining the implications for future research, a review of how the findings from this study apply to the initial three research questions is essential.

Three research questions were explored in this study:

Question 1:

What are pre-licensure baccalaureate nursing students' experiences with clinical reasoning throughout their nursing program?

Question 2:

What are pre-licensure baccalaureate nursing students' perceptions of facilitators in the development of clinical reasoning?

Question 3:

What are pre-licensure baccalaureate nursing students' perceptions of their use of clinical reasoning in delivering safe and effective patient care?

Baccalaureate Nursing Students' Experiences with Clinical Reasoning

The findings from this study demonstrated that clinical reasoning was a concept introduced to the participants in the first semester of their baccalaureate nursing program. Some of the participants believed they began using clinical reasoning in the first semester, but the majority indicated they did not use clinical reasoning until later in the program when they had acquired enough basic knowledge of disease processes and patient care to see the big picture. Each participant indicated clinical reasoning was discussed in the classroom, clinical, and simulation environments; however, much of the development of clinical reasoning was dependent on the instructor, the class, and the setting.

Facilitators in the Development of Clinical Reasoning

Facilitators in the development of clinical reasoning were instructor characteristics, learning environments, and type of class, as described in chapter

4. In essence, those instructors who were open communicators, had good working relationships with both students and staff nurses, and who used questioning techniques to guide students to think like nurses were the most successful in promoting the development of clinical reasoning. Certain characteristics such as intimidation, lack of availability, and lack of trust were not helpful to the students and at times adversely affected their learning.

The Use of Clinical Reasoning in Delivering Safe and Effective Patient Care

As the students' learning progressed, they began to determine that clinical reasoning was critical to the delivery of safe patient care. Although many of the participants began their nursing program with the view of a nurse as someone who spent the majority of their day administering medications, most spoke about the transformation in their view as they began to see that nurses use clinical reasoning to make patient care decisions that promote safe and effective care. Many of the participants noted their view of the healthcare team changed as they realized that nurses were at the core of the team and that their ability to use clinical reasoning advanced the patient's plan of care.

Recommendations

Although nursing education research has indicated that clinical reasoning is essential to the preparation of graduate nurses for safe and effective practice, baccalaureate nursing education has not kept up with changes in the healthcare environment, advances in technology, and the recommendations from nursing stakeholders to improve teaching and learning (Institute of Medicine, 2010;

National Council State Boards of Nursing, 2006, 2009; National League for Nursing, 2003, 2005). Many nursing faculty continue to teach with outdated modes of instruction which overburden nursing students and take their focus away from learning clinical reasoning to learning how to complete assignments and tasks in a manner that satisfies instructors' needs.

As indicated by the Institute of Medicine (2010) and the National League for Nursing (2003, 2005), nursing education research must begin to focus on the needs of students and how they best learn the essential knowledge and skills for delivering safe and effective patient care. As noted in Chapter 2, a plethora of research is available on methods for teaching clinical reasoning in various learning environments. However, little research actually conveys the best methods for promoting the development of clinical reasoning in nursing students. More emphasis should be placed on research into producing learner-centered curricula in which nursing students learn and grow into safe and effective practitioners of care. The ultimate goal in preparing these practitioners is to positively affect patient care outcomes and to produce nurses with the knowledge and skills to make sound clinical decisions (Chuan & Barnett, 2012; Daly, 2001; Debourh & Prion, 2012; National Council State Boards of Nursing, 2006, 2009).

Continued research into teaching and learning strategies is imperative for nursing faculty to deliver content and facilitate learning in a most effective manner. Modern technology, a student body brought up in a technology rich world, and the technological changes in healthcare demand that nursing education take on new methods for enhancing learning. Simulation has brought

technology to the learning arena and has been demonstrated to be an excellent environment in which students can learn without the fear of causing patients harm. Chapter 2 reviewed simulation in nursing education and tools that have been created to determine how well students learn clinical reasoning in simulation. However, tools to measure clinical reasoning in the clinical environment were not as readily available.

The researcher reviewed the literature for a tool to measure nursing students' ability to clinically reason and came up short of a tool that could be used in all environments. Research needs to be conducted to explore how to measure nursing students' ability to use clinical reasoning in the clinical environment. Post conference discussions, reflective writing, and debriefing are all methods for measuring a student's view of their clinical day. However, no tool exists that quantitatively measures how a student uses clinical reasoning in the context of an acute care clinical situation. Patient safety and positive clinical outcomes depend on the nurse's ability to use clinical reasoning in making patient care decisions. The ability to determine if clinical reasoning has been learned in baccalaureate nursing education provides a means for determining the success or failure of a nursing education program.

Researcher's Final Reflections

Throughout my career in nursing education, I have often reflected on my own journey through nursing school. As a second-degree student, and an adult over the age of 30, I was unique in my baccalaureate nursing class. I brought life experience as well as healthcare worker experience when I began my nursing

courses. The majority of my nursing instructors left a positive impression on me and provided me with excellent role models for my own practice. However, as a student, I also experienced the detrimental effects of nursing instructors and clinical environments where my learning was not the primary concern. When I became a nursing instructor, my priority personal goal was to teach in a manner that facilitated learning without mirroring the few negative instructor characteristics I had observed as a student.

Throughout the many courses I have taught, I have learned that students enter nursing school for many different reasons. Most enter the profession because they want to help people, some because they want to have a career with job security, and still others because they love the science. Regardless of the reason for entering nursing school, each student wants to succeed as a student and enter the nursing profession. Educating future nurses is not a responsibility I take lightly. I have reflected on what I can do to help these students succeed and have determined helping students learn is not about me; it is about what students need to become safe healthcare practitioners.

Many nursing faculty have evolved over the last decade toward a more learner-centered focus. Most nursing schools proclaim their programs are learner-centered, but the voices of the students are often contradictory. One impetus for this study was my curiosity about how students actually perceived the quality of their education. Healthcare stakeholders can make recommendations for nursing education, educators can attempt to provide adequate experiences

for their students, but if the student is not learning, then nursing education has failed.

As new nursing faculty, I was often told that I was “too nice” to my students. That I did not need to ask them what they needed because as nursing faculty, I was to decide what they needed. The results of this study have given me insight into what the students need to be successful and I have found from reviewing the interview transcripts, that my view of learner-centered education is indeed the core of nursing students’ success.

Summary

This chapter presented a synthesis of the data collected in the study as well as conclusions about the results and recommendations for nursing education and nursing education research. The future of nursing is dependent on the preparation of competent nurses and nursing educators are at the forefront of that process. Nursing faculty need to listen to the voices of their students and determine the best methods for promoting learning and developing a basis for clinical reasoning in nursing practice.

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APPENDICES

APPENDIX A
MERCER UNIVERSITY INSTITUTIONAL REVIEW BOARD
APPROVAL LETTER

11-Jun-2014

Ms. Elizabeth K. Herron

Mercer University

Georgia Baptist College of

Nursing 3001 Mercer University

Drive Atlanta, GA 30341

**RE: Pre Licensure Baccalaureate Nursing Students' Perceptions of their
Development of Clinical Reasoning (H1406176)**

Dear Ms. Herron:

Your application entitled: Pre-Licensure Baccalaureate Nursing Students' Perceptions of their Development of Clinical Reasoning (H1406176) was reviewed by this Institutional Review Board for Human Subjects Research in accordance with Federal Regulations 21 CFR 56.110(b) and 45 CFR 46.110(b) (for expedited review) and was approved under Category 6, 7 per 63 FR60364.

Your application was approved for one year of study on 11-Jun-2014. The protocol expires 11-Jun-2015. If the study continues beyond one year, it must be re-evaluated by the IRB Committee.

Item(s) Approved:

New Application

Please complete the survey for the IRB and the Office of Research Compliance. To access the survey, click on the following link: <http://https://www.surveymonkey.com/s/K7CTT8R>

Respectfully,

Ava Chambliss-Richardson, M.Ed., CIP, CIM

Associate Director of Human Research Protection Programs (HRPP)

Member

Intuitional Review Board

Mercer University IRB & Office of Research Compliance

Phone (478) 301-4101

Fax (478) 301-2329

ORC_Mercer@Mercer.E

du

Mercer University has adopted, and agrees to conduct its clinical research studies in accordance with, the International Conference on Harmonization's (ICH) Guidelines for Good Clinical Practice.

1508 College Street • Macon, Georgia 31207-0003
(478) 301-4101 • FAX (478) 301-2329

APPENDIX B
UNIVERSITY OF NORTH CAROLINA SCHOOL OF NURSING
IRB APPROVAL LETTER

UNC CHARLOTTE

Research and Economic Development

Office of Research Compliance

9201 University City Blvd, Charlotte, NC 28223-0001

t/ 704.687.1876 f/ 704.687.0980 <http://research.uncc.edu/compliance-ethics>

Institutional Review Board (IRB) for Research with Human Subjects

Acknowledgement of IRB Authorization Agreement

Protocol #: 14-06-13
Title: Pre-Licensure Baccalaureate Nursing Students' Perceptions of their Development of Clinical Reasoning [Mercer U #H1406176]
Designated IRB: Mercer University
FWA #: 00000133
Date: 6/17/2014
Investigator: Ms. Elizabeth Herron School of Nursing

UNC Charlotte's has obtained sufficient supporting documentation regarding this study to rely on the review and continuing oversight performed by the Designated IRB. UNC Charlotte is assured that the review provided by the Designated IRB meets the human subjects protection requirements of an OHRP-approved FWA.

The Designated IRB will follow OHRP-required procedures for reporting its findings and actions to appropriate officials at UNC Charlotte. The Designated IRB remains responsible for ensuring compliance with its determinations and with the terms of its OHRP-approved Assurance for activities under its purview.

This document must be kept on file at both institutions and provided to OHRP upon request.

Please note that it is the investigator's responsibility to promptly inform the IRB committees of any changes in the proposed research, as well as any unanticipated problems that may arise involving risks to subjects. UNC Charlotte's Amendment and Event Reporting guidelines and forms are available on our web site: <http://research.uncc.edu/compliance-ethics/human-subjects>

Dr. Lisa Walker, IRB Vice Chair

6/25/14
Date

The UNIVERSITY of NORTH CAROLINA at CHARLOTTE

An Equal Opportunity/Affirmative Action Employer

Institutional Review Board (IRB) Authorization Agreement

Name of Institution or Organization Providing IRB Review (Institution A):

Mercer University

Federalwide Assurance (FWA)#: 00000133 IRB Registration #: 00000910

Name of Institution Relying on the Designated IRB (Institution B):

UNC Charlotte

Federalwide Assurance (FWA)#: 00000649 IRB Registration #: 00001466

The Officials signing below agree that **UNC Charlotte** may rely on **Mercer University's** designated IRB for review and continuing oversight of its human subject research described below: (*check one*)

(☐) This agreement applies to all human subjects research covered by Institution B's FWA:

(☒) This agreement is limited to the following specific project(s):

Name of Research Project: **Pre-Licensure Baccalaureate Nursing Students' Perceptions of their Development of Clinical Reasoning (H1406176)**

Principal Investigator: **Elizabeth K. Herron**
Mercer University
UNC Charlotte

Sponsor/Funding Agency: Award Number, if any:

The review performed by the designated IRB will meet the human subject protection requirements of Institution B's OHRP-approved FWA. The IRB at Institution/Organization A will follow written procedures for reporting its findings and actions to appropriate officials at Institution B. Relevant minutes of IRB meetings will be made available to Institution B upon request. Institution B remains responsible for ensuring compliance with the IRB's determinations and with the Terms of its OHRP-approved FWA. This document must be kept on file by both parties and provided to OHRP upon request.

Signature of Signatory Official Providing IRB Review:

Wayne C. Glasgow, Ph.D.
Senior Vice Provost for Research and Dean of Graduate Studies, Mercer University, 1400 Coleman Avenue, Macon, GA, 31207-0001; PH: 478-301-2209

Date: 6/16/2014

Signature of Signatory Official Relying on Designated IRB:

Robert G. Wilhelm, Ph.D.
Vice Chancellor for Research and Economic Development, UNC Charlotte 9201 University City Blvd., Charlotte, NC 28223-0001; PH: 704-687-1888

Date: 6/17/2014

APPENDIX C

APPROVAL LETTER FROM DIRECTOR OF NURSING PROGRAM

College of Health and Human

Services School of Nursing

9201 University City Blvd, Charlotte, NC

28223-0001 t/ 704.687.7952

www.nursing.uncc.edu

May 16, 2014

Ms. Betsy Herron, PhDc, Lecturer

College of Health and Human

Services School of Nursing

9201 University City Boulevard

Charlotte, NC 28223

Dear Professor Herron:

Your request for permission to conduct research with the pre-licensure Baccalaureate Nursing students at UNC Charlotte has been reviewed and approved by the School of Nursing, and must also be approved by the CHHS Research Office as well as the University's IRB for Human Subjects Office.

Please note that because you are a faculty member in the School of Nursing, I am requesting that you not recruit and include any students in your study that you are currently interacting with as an advisor, a course faculty member, a clinical instructor, or in any situation where you will have supervisory authority over the student. Further, all manuscripts related to this study must be reviewed by the School before publication, and not include the name of the institution (UNC Charlotte) in which the data were collected.

If you have questions, I can be reached using the contact information listed above.

Sincerely,

A handwritten signature in black ink that reads "Dee M. Baldwin". The signature is written in a cursive, flowing style.

Dee M. Baldwin, Associate Dean/Director, School of

Nursing Cc: Chris Blanchette, CHHS, Associate Dean for

Research

APPENDIX D

EMAIL TO STUDENTS REQUESTING PARTICIPATION

Dear Nursing Student,

My name is Betsy Herron. I am a doctoral student in the PhD in Nursing program at Georgia Baptist College of Nursing of Mercer University. I am conducting a research study about nursing students' perceptions of their development of clinical reasoning while in nursing school. The title of my study is: **PRE-LICENSURE BACCALAUREATE NURSING STUDENTS' PERCEPTIONS OF THEIR DEVELOPMENT OF CLINICAL REASONING**

I am emailing to ask if you would like to participate by agreeing to be interviewed.

If you would be interested in participating in a one-on-one interview with me, please reply to this email and I will contact you to set up an interview time at your convenience.

Interviews may be conducted in person or via Skype.

Mercer University's IRB requires investigators to provide informed consent to the research participants. You will be provided with an informed consent form to review and sign prior to the interview.

If you have any questions about the study please contact Betsy Herron, the Principal Investigator, via telephone (704) 280-0165 or via email at elizabeth.kay.herron@live.mercer.edu.

Mercer University's Institutional Review Board (IRB) reviewed study H140617 6 and

approved it on June 11, 2014.

Questions about your rights as a research participant:

If you have questions about your rights or are dissatisfied at any time with any part of this study, you can contact, anonymously if you wish, the Institutional Review Board by phone at (478) 301-4101 or email at [ORC_Research @Mercer.edu](mailto:ORC_Research@Mercer.edu).

Thank you in advance for your time and participation!

APPENDIX E
INTERVIEW GUIDE

Individual Interview Guide

Individual one-on-one interviews were conducted with each participant who agreed to participate in the study. The following script was used to facilitate the interview process:

“Thank you for agreeing to meet with me today to discuss the development of clinical reasoning in nursing students. Our conversation will be recorded to assist in data collection and analysis. Do you have any objections to being recorded? All of the information gathered today will be kept confidential and will have no bearing on your progression in your nursing program. Your participation is voluntary and you may ask to stop at any time during the interview. Please read and sign the informed consent.”

“Do you have any questions about the informed consent, the interview process, or the study itself?”

“Before we begin the interview, please complete the demographic data form.

Thank you. “

“This study was designed to explore undergraduate nursing students’ perceptions of the development of clinical reasoning. I am going to show you a definition of clinical reasoning:

The process whereby nurses use clinical judgment and critical thinking to make decisions based on both knowledge and experience. It has been defined as “the ability to reason as the clinical situation changes, taking into account . . . patients’ trends and trajectories” (Benner et al., 2010, p. 85).

Do you have any questions regarding this definition of clinical reasoning?

Okay, let's get started."

1. For purposes of this study, tell me how your program is/was structured?
How many semesters is/was it and how are/were the courses laid out?
2. Describe a typical clinical day during your nursing program. How was it structured? What about simulation? How was that structured?
 - a. How much time did you spend with an instructor?
 - b. How much time in simulation was spent on patient scenarios/care?
3. Think about a situation during your nursing program where you used clinical reasoning to make a patient care decision. Describe it to me.
 - a. What most helped you make this decision?
4. What do you believe was most helpful in your development of clinical reasoning?
5. Think back to the beginning of your nursing program and reflect on each course and clinical you have experienced.
 - a. Which of the teaching environments best helped you develop clinical reasoning?
 - b. Describe examples from each environment where you believe you used clinical reasoning.
6. Describe some specific examples of how your instructor(s) helped you to develop clinical reasoning. Whether it be clinical, class, or simulation.
You do not need to name names, but you can tell me the particular course (i.e. Peds, Maternity, Med-Surg, etc.).
7. Do you believe clinical reasoning is important in nursing? How?

8. Describe teaching strategies or environments in nursing school that did not benefit your development of clinical reasoning?
9. What do you believe could have been done differently to improve your development of clinical reasoning?
10. Do you believe you have developed clinical reasoning? How did it develop? Was there an aha moment or was it more gradual?

Probing questions :

1. Are there any other situations (other than classroom, clinical, or simulation) where you experienced clinical decision-making?
2. How specifically did the learning environments enhance learning clinical decision-making?
3. Describe teaching methods your instructor used to enhance your clinical decision-making.

APPENDIX F
INFORMED CONSENT

Georgia Baptist College of Nursing

Appendix G

Informed Consent

**PRE-LICENSURE BACCALAUREATE NURSING STUDENTS' PERCEPTIONS OF THEIR DEVELOPMENT
OF CLINICAL REASONING**

You are being asked to participate in a research study. Before you give your consent to volunteer, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Investigators

Principle Investigator:

Elizabeth K. Herron, RN, MSN, CNE

Georgia Baptist School of Nursing

Mercer University

Faculty Advisor:

Dr. Tanya Sudia-Robinson, RN, PhD

Georgia Baptist School of Nursing

Mercer University

Purpose of the Research

The research study is designed to explore baccalaureate nursing students' perceptions of their development of clinical reasoning and the facilitators that enhance and promote their ability to use clinical reasoning in providing safe and effective patient care.

The data from this research will be used to complete my dissertation requirements.

Procedures

If you volunteer to participate in this study, you will be asked to take part in a one-on-one interview with the researcher to discuss your perceptions of your development of clinical

Mercer University IRB
Approval Date 06/11/2014
Protocol
Expiration Date 06/11/2015

reasoning while in nursing school. The interview will be audio recorded and the researcher will take notes.

Your participation will take approximately one hour on one day to complete the interview.

Potential Risks or Discomforts

There are no foreseeable risks associated with this study. Your participation in the study will not in any way disadvantage you in your progression through the nursing program or once you become a registered nurse. You have the right to discontinue participation, either temporarily or permanently, at any time throughout the study.

Potential Benefits of the Research

Participation in the study may not benefit you personally. We hope that information gleaned from the study will help nurse educators to improve and enhance pre-licensure nursing education for all nursing students.

Confidentiality and Data Storage

Audio tapes of the interview will be sent to a professional transcriptionist and then reviewed by the researcher for accuracy. The transcriptionist will be asked to sign a confidentiality agreement that states he/she will not share any of the information from the audio tapes. Once the tapes have been transcribed, they will be stored in a locked drawer in the researcher's office for the duration of the study. All names mentioned during the interview will be redacted from the verbatim transcripts to protect your confidentiality. Only the researcher and her faculty advisor will have access to the transcripts. The study information will be kept for up to three years after completion of the study at Mercer University.

Participation and Withdrawal

Your participation in this research study is voluntary. As a participant you may refuse to participate at any time. To withdraw from the study, please contact Elizabeth Herron at eherron1@uncc.edu or 704-280-0165.

Questions about the Research

If you have any questions about the research, please speak with Elizabeth Herron, principal researcher at 704-280-0165.

Incentives to Participate

You will receive a \$5.00 gift card to Starbuck's for your participation in the individual interview.

Audio or Video Taping

The interview will be audio recorded. Names will be redacted from the transcription of the interview.

Mercer University IRB
Approval Date 04/11/2014
Protocol
Expiration Date 04/11/2015

Reasons for Exclusion from this Study

You will be excluded from the study if (1) you are less than 18 years in age, (2) you do not read, write, and speak English, (3) you are not entering your final year in a pre-licensure nursing program, and (4) you do not consent to being audio taped.

This project has been reviewed and approved by Mercer University's IRB. If you believe there is any infringement upon your rights as a research subject, you may contact the IRB Chair, at (478) 301-4101.

You have been given the opportunity to ask questions and these have been answered to your satisfaction. Your signature below indicates your voluntary agreement to participate in this research study.

Signature of Research Participant

Date

Participant Name (Please Print)

Date

Signature of Person Obtaining Consent

Date

Rev.08/19/2010

Mercer University IRB
Approval Date 06/11/2014
Protocol
Expiration Date 06/11/2015

APPENDIX G
MODIFIED INFORMED CONSENT

Georgia Baptist College of Nursing

Informed Consent

**PRE-LICENSURE BACCALAUREATE NURSING STUDENTS' PERCEPTIONS OF THEIR DEVELOPMENT
OF CLINICAL REASONING**

You are being asked to participate in a research study. Before you give your consent to volunteer, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Investigators

Principle Investigator:

Elizabeth K. Herron, RN, MSN, CNE

Georgia Baptist School of Nursing

Mercer University

Faculty Advisor:

Dr. Tanya Sudia-Robinson, RN, PhD

Georgia Baptist School of Nursing

Mercer University

Purpose of the Research

The research study is designed to explore baccalaureate nursing students' perceptions of their development of clinical reasoning and the facilitators that enhance and promote their ability to use clinical reasoning in providing safe and effective patient care.

The data from this research will be used to complete my dissertation requirements.

Procedures

Mercer University IRB
Approval Date **06/05/2014**
Protocol
Expiration Date **06/11/2015**

If you volunteer to participate in this study, you will be asked to take part in a one-on-one interview with the researcher to discuss your perceptions of your development of clinical reasoning while in nursing school. The interview will be audio recorded and the researcher will take notes.

Your participation will take approximately one hour on one day to complete the interview.

Potential Risks or Discomforts

There are no foreseeable risks associated with this study. Your participation in the study will not in any way disadvantage you in your progression through the nursing program or once you become a registered nurse. You have the right to discontinue participation, either temporarily or permanently, at any time throughout the study.

Potential Benefits of the Research

Participation in the study may not benefit you personally. We hope that information gleaned from the study will help nurse educators to improve and enhance pre-licensure nursing education for all nursing students.

Confidentiality and Data Storage

Audio tapes of the interview will be sent to a professional transcriptionist and then reviewed by the researcher for accuracy. The transcriptionist will be asked to sign a confidentiality agreement that states he/she will not share any of the information from the audio tapes. Once the tapes have been transcribed, they will be stored in a locked drawer in the researcher's office for the duration of the study. All names mentioned during the interview will be redacted from the verbatim transcripts to protect your confidentiality. Only the researcher and her faculty advisor will have access to the transcripts. The study information will be kept for up to three years after completion of the study at Mercer University.

Participation and Withdrawal

Your participation in this research study is voluntary. As a participant you may refuse to participate at any time. To withdraw from the study, please contact Elizabeth Herron at eherron1@uncc.edu or 704-280-0165.

Questions about the Research

Mercer University IRB
Approval Date 08/15/2014
Protocol #
Expiration Date 08/11/2015

If you have any questions about the research, please speak with Elizabeth Herron, principal researcher at 704-280-0165.

Incentives to Participate

You will receive a \$5.00 gift card to Starbuck's for your participation in the individual interview.

Audio or Video Taping

The interview will be audio recorded. Names will be redacted from the transcription of the interview.

Reasons for Exclusion from this Study

You will be excluded from the study if (1) you are less than 18 years in age, (2) you do not read, write, and speak English, (3) you are not recently graduated from (within the last six months), entering into or in your final year in a pre-licensure nursing program, and (4) you do not consent to being audio taped.

This project has been reviewed and approved by Mercer University's IRB. If you believe there is any infringement upon your rights as a research subject, you may contact the IRB Chair, at (478) 301-4101.

You have been given the opportunity to ask questions and these have been answered to your satisfaction. Your signature below indicates your voluntary agreement to participate in this research study.

Signature of Research Participant

Date

Participant Name (Please Print)

Date

Signature of Person Obtaining Consent

Date

Rev.08/19/2010

Mercer University IRB
Approval Date: 08/19/2014
Protocol:
Expiration Date: 08/19/2015

APPENDIX H
DEMOGRAPHIC DATA FORM

PRE-LICENSURE BACCALAUREATE NURSING STUDENTS' PERCEPTIONS OF THEIR
DEVELOPMENT OF CLINICAL REASONING

Demographic Data Form

1. What is your age in years? _____
2. Gender: Male Female
3. Have you recently graduated from a pre-licensure nursing program?
Yes No If Yes, Date graduated _____
4. Are you currently a nursing student in a pre-licensure nursing program?
Yes No
5. Are you entering or in your final semester of the nursing program?
Yes No
6. Have you had at least one clinical course in your nursing program?
Yes No
7. Have you had at least one simulation experience in your nursing program?
Yes No
7. Are you currently enrolled in a clinical course in your nursing program?
Yes No
8. Do you have a prior college degree(s)?
Yes No If Yes, please list:

9. Do you have prior healthcare related work experience?
Yes No If Yes, please list:

10. Are you able to speak, read, and write English?

Yes No

11. Are you willing to be audio-recorded during the interview process?

Yes No