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A Mixed Methods Case Study Exploring Simulation and Caring in Nursing Education

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A MIXED METHODS CASE STUDY EXPLORING SIMULATION AND
CARING IN NURSING EDUCATION

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The School of Education

by

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In loving memory of my grandmother, Betty L. Smiley, who taught me the importance of faith in God. Her caring and nurturing spirit was a constant source of joy in my life.

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ABSTRACT

Current research in nursing education suggests a shift from traditional didactic transmission methods to student-centered pedagogies to prepare nursing students with substantive knowledge necessary for competent practice in a complex healthcare environment. Simulation has emerged as a pedagogy that offers students the opportunity to critically think, solve problems, and care for diverse patients in a nonthreatening, safe environment. As the use of simulation increases, a concern is whether or not it can hinder the development of caring behaviors necessary for competent and compassionate nursing practice.

This research was a study of nursing students' descriptions of the simulation experience, and perceptions of caring in nursing along with the display of caring behaviors in the simulated environment. Key findings include: 1) simulation was viewed as a positive and negative learning experience by students; 2) students displayed nonverbal and verbal caring behaviors during simulation; 3) students believed displaying caring in a simulated environment was challenging because the simulator could not respond as an actual person.

CHAPTER 1

INTRODUCTION

Overview

Contemporary nursing practice is becoming more complex, and the role of the nurse must include the knowledge and skills to practice in a rapidly changing healthcare environment. The nursing profession is demanding competent nurses who are “thinking” nurses as well as “doing” nurses. Cherry and Jacobs (2014) posit, “Thinking nurses learn to integrate essential knowledge, attitude, and skills into care that involves best practices and evidence-based practices that promote patient safety and quality care” (p. 36). Nursing education should develop relevant curricula aimed at preparing and equipping nurses for the roles and responsibilities of a professional nurse. This includes a curriculum that is congruent with “global trends, national circumstances, advancements in science and technology, professional priorities, academic forces, the school’s mission, and faculty values” (Billings & Halstead, 2012, p. 92). Billings and Halstead further explain, “Without a fit between the curriculum and the broad practice environment, nurses would not have the relevant knowledge, skills, and attitudes necessary to provide patient-centered care, effectively intervene in contemporary health care challenges, or advocate for improved delivery of healthcare” (p. 92).

Nursing practice has evolved because of technological advances in healthcare (Cherry & Jacobs, 2014). Computers offer nurses swifter access to various resources pertaining to patient care such as past and present medical conditions, documentation of interventions, and educational resources. Internet access “provides endless data that can benefit patients in addition to the individualized nurse or the profession as a whole” (Cherry & Jacobs, 2014, p. 315). Many nursing programs are incorporating technology into the curriculum with the use of software that

allows students to immediately access pertinent information about medical terminology, laboratory values, and medications.

Current issues affecting the profession encompasses a shortage of nurses and nursing faculty along with the aging of practitioners and educators which pose a threat to patient safety and the quality of health care delivery (Billings & Halstead, 2012). Contributing factors impacting the nursing shortage include a decline in nursing school enrollment, shortage of nursing faculty, a significant segment of the nursing workforce is nearing retirement age, job dissatisfaction, and high turnover rates (American Association of Colleges of Nursing (AACN), 2014). Although nursing programs, particularly baccalaureate programs, experienced a 2.6% enrollment in 2013, this rise was not sufficient to meet the projected demands for nursing service. Access to healthcare has increased with the passage of the Affordable Care Act 2010, which projects more than 32 million Americans will gain access to healthcare services (AACN, 2014). The nursing shortage is further exacerbated by a shortage of nursing faculty that is restricting nursing program enrollment. According to AACN's report on *2012-2013 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*, "U.S. nursing schools turned away 79,659 qualified applicants from baccalaureate and graduate nursing programs in 2012 due to insufficient number of faculty, clinical sites, classroom space, and clinical preceptors, as well as budget constraints" (AACN, 2014).

A significant segment of the nursing workforce is nearing retirement age. According to a 2013 survey conducted by the National Council of State Boards of Nursing and The Forum of State Nursing Workforce Centers, "55% of the RN workforce is age 50 or older" (AACN, 2014). Nurses are leaving the profession because of "insufficient staffing, inadequate support staff, heavy workload, employer expectation to work overtime, inadequate wages, and the rigors of

treating increasingly ill patients” (Billings & Halstead, 2012, p. 101). Furthermore, a high turnover rate among newly graduate nurses exist because of the difficulty transitioning from school to practice. As a result, the Institute of Medicine (IOM) (2010) advocates for an improved education system “to ensure that the current and future generations of nurses can deliver safe, quality, patient-centered care across all settings” (p. 6). To accomplish this task nurse educators are replacing passive learning strategies such as lectures with new pedagogies that promote active learning.

Simulation has emerged as a new pedagogy to foster critical thinking, and understanding of patients’ needs, and hands-on nursing skills. Nursing programs throughout the United States are using simulation with human patient simulators to reconstruct real-life patient problems, ensuring that students have opportunities for learning appropriate nursing care. Traditionally, nursing courses consist of didactic, skills laboratory, and clinical components. In the classroom, students obtain theoretical knowledge about various healthcare alterations along with applicable nursing interventions. The skills laboratory allows students to practice and demonstrate competency in learned clinical skills on a static mannequin before performing these skills on actual patients. Afterward, students are assigned to a healthcare agency for clinical practice with the expectation that theoretical knowledge is applied when caring for patients to recognize alterations in a patient’s status and intervene appropriately. Although the clinical experience is vital for preparing students to transition successfully into the nursing profession, the value of the experience depends on the types of patients they encounter. Because of this, nursing students may not have the opportunity to practice clinical decision making skills for patients with various health issues.

Simulation renders a safe learning environment for students as they determine proper nursing interventions for a broad range of health issues (Abdo & Ravert, 2006). Benefits for students involved in the simulation experience include opportunities to learn in a self-paced manner, develop higher-order thinking skills, and make mistakes without harming actual patients (Ravert, 2008). Hence, when the previously simulated situation is encountered with real patients, students have more confidence in their ability to successfully manage the patient's condition. According to Goodstone, Goodstone, Cino, Glaser, Kupperman, and Demper-Neal (2013), "The desired outcome is a nursing student who is more confident in the clinical area and who demonstrates improved critical thinking skills" (p. 159). As a result, the student begins to think like a nurse. In addition, students have less anxiety, which enhances their capacity to learn (Dearmon, Graves, Hayden, Mulekar, Lawrence, Jones, Smith, & Farmer, 2013).

The relationship between simulation and caring is important to consider because of the notion that simulation can be just as effective as real-life clinical experiences (Blum, Hickman, Parcells, Locsin, 2010; Eggenberger & Keller, 2008; Locsin, 2008). There are limited studies regarding the incorporation of caring in simulation. Nursing education struggles with balancing scientific and technical aspects of the curriculum with the humanistic portion (Garno, 2010). Nursing programs have the responsibility of preparing nurses who are competent and efficient as well as compassionate. Nursing education can play a vital role in maintaining caring as a core value of nursing. In order to maintain an ethics of care, nursing education must teach the importance of caring, and provide ample opportunities for clinical practice of caring behaviors (Sadler, 2003). Several studies have shown that nursing faculty can serve as influential role models in nurturing a student's capacity to care (Cook & Cullen, 2003). This is crucial because of Dillon and Stines (1996) notion of "merely possessing the human capacity to care does not

necessarily mean the individual will practice caring behaviors, just as intellectual capacity does not automatically result in the acquisition of knowledge” (p. 113). Since the nursing profession recognizes caring as a core value, attention to caring behaviors while interacting with a simulated patient is important to consider so that nursing retains the concept of caring as an essential component.

History of Nursing Education

The Nurse Poem

The world grows better, year by year,
Because some nurse in her little sphere, Puts on her apron and grins and sings
Keeps on doing the same old things
The temperatures, giving the pills
To remedy mankind's numberless ills;
Feeding the baby, answering the bells
Being polite with a heart that rebels
Longing for home and all the while
Wearing the same old professional smile;
Blessing the new born babe's first breath,
Closing the eyes that are still in death.
Taking the blame for
The doctor's Mistakes,
Oh Dear, what a lot of patience it takes,
Going off duty at seven o'clock
Tired, discouraged, and ready to drop.
When we lay down our caps
And cross the bar
Oh Lord, will you give us just
One little star,
To wear in our crowns with
Our uniforms, new
In that city above, where the
Head nurse is you.

-Author and Date Unknown

This poem reflects the educational preparation and mindset of females that were typical of nursing programs in the past. Yet, on closer observation, some of the abilities described are relevant today. According to Young and Paterson (2007), “The notion that nurses “answer the

bells' parallels the role of contemporary nurses who respond to their clients' needs. The depiction of caring and concern and professional demeanor is still relevant in today's world" (p. 326).

Historically, in the west, religious schools offered training for nurses. In 1836, the Deaconess School of Nursing at Kaiserswerth, Germany, was founded by Pastor and Mrs. Fliedner. Bevis and Watson (2000) describes the curriculum pattern of the Kaiserswerth School as a "three-year program which included household duties, cleaning, laundry, cooking, as well as nursing care in women's and men's wards" (p. 20). In this school, education was synonymous with the "banking" concept in which the nurse is presented as the empty vessel and the physician the expert. Freire (1993) explains, "Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiques and makes deposits which the students patiently receive, memorize, and repeat" (p. 34). The curriculum included lectures in theory (ethics, religion, and nursing) in addition to bedside instruction by physicians. Anderson (1981) posits, "The pattern here was training nurses to implicitly follow the physician's order; hence, the physician was responsible for nursing care as well as medical care" (p. 20).

In 1860, a paradigm shift in nursing education occurred when Florence Nightingale established the first formal training program for nurses (Finkleman & Kenner, 2016). Nightingale, recognized as a pioneer of modern nursing, was against merely following physicians' orders as she believed nurses should have knowledge of the rationale for a task rather than merely execution of a task. In contrast to earlier forms of nursing education, the school provided classes in theory coupled with clinical experiences on hospital wards. Nightingale's model of nurse training used an apprenticeship approach to prepare students to work in hospitals

and help the poor, as well as mentor graduates to start their own programs. She believed that practitioners rather than textbooks provided the best training for students. Thus, most of the educational preparation occurred in the hospital. Nightingale's philosophy of education aligns with Dewey's (1938) approach to "learning by doing" that advocates a hands-on approach to learning.

In 1872, after the Civil War, the first American nursing program was established because of the nursing care given to soldiers by untrained women (Anderson, 1981). At the New England Hospital for Women and Children, a nurse training program patterned after the Nightingale school was developed. The school had a set curriculum with 12 hours of required lectures, equipment for practicing nursing skills, and provision for clinical experiences within the surrounding hospitals. Initially, the program was for one year, but was extended to 16 months in 1875.

During the nineteenth century hospital-based nursing programs, also using Nightingale's model of learning, began to flourish in the United States. In 1873 the first three educational programs were established: New York Training School at Bellevue Hospital, Connecticut Training School at the State Hospital (later renamed New Haven Hospital), and Boston Training School at Massachusetts General Hospital. These schools were also reflective of Dewey's philosophy of education. As Young and Paterson (2007) describe,

The primary purpose of hospital school was to train young women to provide care within the parent institution. Students were viewed as apprentices and given on-the-job training, providing a source of cheap labor for the hospital. Because there were no accreditation standards for programs of nursing education, each hospital school decided on the length of its program and curriculum. Clinical experiences were determined by the number of patients admitted to the hospital, and the types of diagnoses. Hospital staffing, not the education of nurses, was the purpose of the hospital schools (p. 329).

The curriculum plan for these schools was organized according to the medical model of education which placed more emphasis on clinical practice and less on didactic learning. Upon completion of the educational program, students received a diploma, and no college credit was awarded for any of the courses (Keating, 2014).

By the 1900's the apprenticeship model was deemed inadequate by educators because of "its lack of rigor and exploitation of student labor" (Egnes, p. 19). In 1919, a *Committee for the Study of Nursing Education*, supported by the Rockefeller Foundation, was established to examine the state of nursing education. According to Egnes,

The committee's published report, the *Goldmark Report* (1923), recommended that nursing education should have educational standards, and that schools of nursing should have a primary focus on education, rather than on patients. The report further recommended that nursing education be moved to universities, and that nurse educators receive the advanced education that was required for the role (p. 19).

As a result of this report, the Rockefeller Foundation funded an experiment in nursing education. Thus, in 1923, the first university-based nursing program, the Yale University School of Nursing was established with its own dean, faculty, and budget (Keating, 2014). This changed the focus of nursing education to training based on an educational plan rather than on the service needs of the hospital. Although significant changes were made in nursing education, they were neither far-reaching nor permanent because of resistance from hospital administrators because this would eliminate the "free" labor provided by nursing students.

Baccalaureate programs transformed nursing into a professional role. By 1926, 25 universities granted bachelor's degrees in nursing (Keating, 2014). However, by the 1950s and 1960s, baccalaureate programs begin to decline while hospital-based diploma programs continued to educate a vast number of nursing students. The curriculum continued to place more

emphasis on training in the hospital rather than theory as well as failed to correlate the didactic component with the student's clinical experience.

Associate Degree Nursing programs were created because of the post-World War II nursing shortage (Keating, 2014). Several pilot studies implemented in the community college setting found that there was little difference in the graduates of associate degree programs than those from baccalaureate and diploma programs. Near 1957, 18 associate degree programs existed. Success of these programs began the controversial issue of how to differentiate the practice differences between Bachelor of Science in Nursing and Associate Degree Nursing preparation. Keating posits, "Despite the continued efforts of nursing leadership, professional organizations, government-sponsored task forces, and educators to clarify the differences between associate and baccalaureate degree nurses, the issue continues to be divisive" (p. 56).

The American Nurses' Associations' (ANA) *First Position on Education for Nursing* (1965) marked a turning point for nursing education. During this time hospital-based diploma programs were struggling to produce competent graduates because medical and nursing practice had become more complex. Graduates from these programs were struggling to keep up with the increased pace that required more than ritualistic practice. In response to the inadequacy of hospital-based nursing programs, ANA affirmed that nursing is recognized as a profession that requires higher level knowledge and skills, theory oriented rather than technique oriented that can only be obtained through a rigorous course of study in colleges and universities (ANA, 1965). Thus, nursing professionals should be grounded in science and critical thinking. According to ANA, "The primary aim of nursing education is to provide an environment in which the nursing student can develop self-discipline, intellectual curiosity, the ability to think clearly, and acquire the knowledge necessary for practice" (p. 111). Martins, Mazzo, Baptista,

Coutinho, Godoy, Mendes, and Trevizan (2012) contend, “Nursing schools were obliged to evolve in their way of being and offering teaching, absorbing, and using didactical and pedagogical knowledge” (p. 620). This marked the beginning of the evolution of nursing from a task-oriented occupation to a skilled profession based on well-developed knowledge. Currently, the three basic nursing education programs continue to exist: the hospital or diploma school, the two-year junior college or associate degree program, and the four-year baccalaureate program (Anderson, 1981).

Evolution of Nursing Curricula

The year 1917 marked a turning point in the development of nursing curriculum with the publication of the Curriculum Committee of the National League of Nursing Education’s (NLNE), *Standard Curriculum for Schools of Nursing* (Keating, 2014; Anderson, 1981). The purpose of the *Standard Curriculum* was

To serve as a guide for training schools struggling to establish good standards of nursing education, and to represent to the public and to those who wish to study our work, a fair idea of what, under our present system, we conceive to be an acceptable training for the profession of nursing (Gray, 1918, p. 791).

This book provided guidelines on how to enhance standards in the schools of nursing and “guidelines on how to set up actual courses.” (Keating, 2014, p. 25) which changed the focus of nursing education. The guide defined objectives, content, and methods for each course, and provided lists of needed teaching materials and equipment. An excerpt of the section titled, Standards of Methods of Good Teaching, relates to Dewey’s philosophy of experiential education:

Good teaching is shown by the degree of self-reliance, initiative and resourcefulness developed in the pupils, and their ability to adapt and apply their knowledge in new situations. The pupil who is absolutely dependent on the teacher who cannot take any step without guidance and help, will not be of much use in the wards or in the future work of her profession. The kind of teaching which substitutes tradition and authority for

inquiry and investigation, which discourages mental activity and free self-expression and which destroys originality and initiative, is no longer accepted as good in any branch of education (p. 27).

The *Standard Curriculum* was revised in 1927 and 1937. According to Keating (2014), “Each book increased the number of classroom hours and decreased the recommended hours of patient care” (p.25). After the last revision the guide was not republished and nothing else existed. Bevis and Watson (2000) posit, “From postwar 1940s until the mid-1950s, there was a hiatus in curriculum development paradigms” (p. 60).

By the mid-1940’s, “Dewey’s influence on educational theory was waning, giving way to behaviorism , a school of thought rooted in Thorndike’s famous assertion that, “whatever exists, exists in the same amount” and therefore can be measured” (Locsin, & Purnell, 2009, p. 49). Starting in 1950, nursing curricula began to see a transformation (Keating 2014). Many nursing programs adopted the Tylerian curriculum model because of its highly structured, orderly, and scientific approach. This model provided a prescribed curriculum consisting of a philosophy, conceptual framework, program objectives, behaviorally-defined, measurable objectives for every level, and evaluation of learning based on the pre-specified objectives. Bevis and Watson (2000) posit,

The usefulness and practicality of the Tyler model for training caused it to become the only model acceptable to approval and accrediting bodies for use in developing nursing curriculum in all levels of nursing education, hospital, community college, and baccalaureate programs despite its limitations for professional education (p. 23).

Use of the Tyler model changed the student-centered learning environment in nursing education to one that became faculty dominated and highly structured. Billings and Halstead (2009) explain, “Learning occurs in an environment that consists of clearly established learning objectives and highly structured learning experiences in which student behavior is intentionally shaped and managed by faculty’s cues, prompts, directions, and redirections” (p. 319).

Critics of the Tylerian curriculum model “questioned how nursing education philosophies speak to holism, caring, and the human experience, but plan curriculums based on behavioral objectives” (Young & Paterson, 2007, p. 339). Particularly, Bevis and Watson (2000) who advocated for a new curriculum-development paradigm that “must liberate both students and faculty from the authoritarian restraints of empiricist/behaviorist models as represented by specified behavioral objectives and the teacher roles and functions necessitated by these objectives” (p. 1). Because learning is an active process, teachers should serve as facilitators while “students are responsible for their own learning agendas” (Bevis & Watson, 2000, p. 339).

Ethics of Care

Caring is considered a core value of the nursing profession (Brown, 2011). However, as technology in medicine increases, those values and behaviors inherent in caring are threatened. Additionally, nurse educators grapple with whether caring is innate or if it is teachable. Therefore, an ethics of caring provides a useful framework for understanding the importance of caring in nursing. Caring in nursing aligns with Noddings’ (2003, 2012) notion of caring as a reciprocal relationship. Noddings (2012) operationalized the caring process in two stages: caring-for and caring-about. The first stage refers to the actual hands-on application of caring services once an expressed need is detected. What follows is a sense of motivational displacement, which temporarily directs the motives away from individual tasks towards those of the cared-for (Noddings, 2012). The second stage involves the nurturing of caring ideas or intentions. Caring is viewed as an act of engrossment whereby the one caring is free of any selfish motives or judgments and evaluations in order to act on behalf of the cared-for. Noddings (2003) posits, “The engrossment need not be intense nor need it be pervasive in the life of the one-caring, but it must occur” (p. 314).

Noddings (2003) declares that the caring relationship is complete once the cared-for "responds in a way that shows that caring has been received, recognized" (p. 53). The aforementioned response is crucial in confirming the caring relation as Noddings posits, "without this response, there is no caring relation no matter how hard the carer has worked at it" (p. 53). Noddings contends that the cared-for response completes the caring encounter as well as provides further information about an individual's needs and interests, and how the carer might deepen or broaden the caring relation.

Noddings (2012) identifies the origin of caring as a natural, innate sentiment that is easily expressed followed by the memory of receiving care referred to as ethical caring. Natural caring occurs on a regular basis in harmonious homes, schools, and workplaces in which "people address and respond to one another in ways characteristic of caring, and they do so by inclination, because they want to care and be cared for, not out of duty" (p. 54). Noddings (1984) explains,

The relation of natural caring will be identified as the human condition that we, consciously or unconsciously, perceive as "good." It is that condition toward which we long and strive, and it is our longing for caring – to be in that special relation – that provides the motivation for us to be moral. We want the motivation for us to be moral. We want to be moral in order to remain in the caring relation to enhance the ideal of ourselves as one-caring (p. 1984).

With this type of caring no moral effort is required as people strive to meet the needs of family members, neighbors, and friends. The memory of receiving care shapes the notion of ethical caring as individuals build caring based on recollections of caring and being cared for in hopes of restoring the desired condition of natural caring. What follows is an ethics built on caring "that strives to maintain the caring attitude and is thus dependent upon, and not superior to, natural caring" (Noddings, 1984, p. 80). Caring is viewed as an ethical obligation to act on behalf of the cared-for, or refrain from acting if it thought to not benefit the cared-for. Noddings contends that a

person “desires to be moral in order to remain in the caring relation and to enhance the ideal as the one-caring” (p. 80).

Leffers (1993) extends the ethics of care as a work of mothering that involves maternal thinking that “fosters growth in the morality of love” (p. 64). Leffers, drawing on the work of Dewey, offers a universal approach to the caring response that includes the self, personal relationships, and those relationships outside of the circle of personal relationships. According to Leffers,

For if we see ourselves connected to everyone and everything, then problematic social conditions are problems for us in our social environment; problematic environmental conditions are problems for us in our environment; problematic world conditions are problems for us in our world;...we must be concerned, i.e., receptive and vulnerable to the problems in our world. We must be conscious and purposeful in our desire to find solutions to them, and we must take action according to our own creative impulses (p. 74).

Pettersen (2008) also offers an expansion of the ethics of care from the notion of personal and local care to socializing care, and globalizing care. Socializing care implies that “the ethics of care has political implications in addition to moral ones” (p. 176). Pettersen contends that if core values of ethics of care such as “compassion, collaboration, responsibility, and attention towards needs” (p. 176) became the main values for political thinking and practice, it would “defy the traditional borders between ethics and politics, between private and public” (p. 176). This transformation of care could also shadow the demarcations of gender behaviors in expressing caring behaviors, creating “gender-neutral, common values” (p. 176). Moreover, revisiting relational ontology from a societal perspective results in “relationship networks where reciprocal care, mutual trust, attention and response are as crucial to public life as to government policy” (p. 176) as well as interrogation of public policies in terms of their capacities to deliver well-being.

Tronto (2013) posits, "...making care into a political concern will improve not only the quality of care, but also the quality of democratic life" (p. 363). Tronto maintains that care should be conceived as a public value as well as a personal value. This is demonstrated through the creation of another step in the caring process, "caring with", which "requires that caring needs and the ways in which they are met need to be consistent with democratic commitments to justice, equality, and freedom for all" (Tronto, 2013, p. 538).

Ethics of care from a global perspective consists of mutually dependent relationships. This perspective has the potential to eradicate environmental issues and economic depression in poor countries. Silk (2004) contends,

...there is no logical reason to suppose that moral boundaries should coincide with the boundaries of our everyday community; not least because these latter boundaries are in themselves not closed, but rather are defined in part by an increasing set of exchanges with distant strangers" (p. 229).

Silk (2004) identifies basic components of care required to care for "distant others". The first component, benevolence, is expressed when there is "sympathy and concern for the plight of others" (p. 231). This results in an act of beneficence, the second component, that "is constituted by actions actors take with the intention of improving and relieving the plight of others in need" (p. 231). Moving from benevolence to beneficence requires moral motivation, the third component.

Tronto (1993) describes moral principles that are necessary for care. The first principle, attentiveness, suggests that without awareness and recognition of the need for care, then care cannot be given. Once the need is identified, the second principle of responsibility implies accepting that action is required in response to the identified need. The caring action must be performed competently, which is the third principle. The final principle of responsiveness refers to how the person who is receiving care perceives the caring behavior.

Ethics of Care in Nursing

Embracing an ethics of care in nursing is vital to ensure that caring is maintained as a core value within the profession. As a result of caring, patients experience physical and mental well-being, decreased stress, improvement in self-esteem, personal growth, and self-actualization (Finfgeld-Connett, 2008). Caring in nursing leads a spiritual connection between the nurse and patient that can potentially lead to healing (Watson, 2009).

Caring in nursing involves genuine presence, attentiveness and response to a patient's request without distractions from technology (Smith, Turkel, & Wolf, 2012). Hudacek (2008) posits, "Emphatic caring, feeling an individual's pain and trying to implement strategies to improve his or her health, is the heart of nursing" (p. 126). In addition, a caring attitude symbolizes respect and appreciation for patients and their individuality. According to Woods (2011), "The use of an ethic of care in nursing enhances nurses' abilities to respond to the needs of their patients in ways that are grounded in the particular welfare and situation of each individual patient" (p. 272).

Specifically, Edwards (2009) illustrates Tronto's (1993) four phases of caring in the context of nursing as,

...when 'caring about' one tries, as a nurse, to be aware of patients' needs. When 'taking care of' one works out the best way to help the patient. When 'caregiving' one puts the plan into effect (making a patient comfortable by repositioning or talking to them). And in the 'care-receiving' phase, if all goes well the patient will feel better, more comfortable, more reassured, etc. (p. 237).

Consequently, patients who feel they have been cared for report a higher level of satisfaction (Labrague, 2012).

The Caring Curriculum

Teaching a caring ethic is possible if caring is incorporated in the nursing curriculum (Brown, 2011; Drumm & Chase, 2010; Adamski, Parsons, & Hooper, 2009; Murphy, Jones, Edwards, James, & Mayer, 2009). Drumm and Chase (2010) add,

When caring is central to the educational process, the interactions/relationships between teachers and students, responsiveness of providing feedback to students, nature of the assignments, the style of testing, and the types of projects, will be reflective of the nurturance of caring between faculty and students (p. 31).

Nurse educators have a responsibility to ensure that students develop caring behaviors by teaching the importance of caring as a vital component of nursing through role modeling of caring behaviors, and providing ample opportunities for displaying those behaviors in clinical practice (Mlinar, 2010). Ali (2012) summarizes this as “when...instructors are perceived as caring, nursing students develop caring abilities (p. 15).

In Drumm and Chase’s (2010) study students “expressed the value of the caring curriculum and the importance of clinical experiences as facilitating their learning to care” (p. 34). The students’ knowledge of caring grew as they progressed through the program. This is further illustrated by the following statements from students, “I think it (caring) has to be within you and I think it is within everybody” (p. 33), and “It’s that feeling inside; I didn’t know how to transfer that to nursing” (p. 33).

Watson’s (2008) Caring Science theory situates relational ontology as the foundation for “epistemology, pedagogy, and praxis of caring in nursing and related fields” (p. 18).

Watson contends nursing and caring have an expansive worldview that involves an intertwining of arts, humanities, philosophy, science, and technology. This can begin in nursing education if schools develop curricula based on Caring Science. Nurses who adapt a caring attitude are “capable of having loving, caring, kind, and sensitively meaningful, personal connections with

an increasing enlightened public” (Watson, 2009, p. 468). Correspondently, effective caring results in health promotion and healing.

Nodding’s (1988) theory that educators who embrace an ethic of caring can influence this behavior in students is applicable to nursing education. Nurse educators can nurture caring in students through “modeling, dialogue, practice, and confirmation” (p. 222). Modeling involves encouraging responsible affirmation in students while true dialogue is open and nonjudgmental. The practice of caring extends beyond the cared-for, and caring occasions is used to confirm the cared-for. In other words, “nursing students can be professionally trained to develop the competency of caring through the concepts of modeling and role modeling” (Labrague, 2012, p. 106).

Bevis and Watson (2000) advocates for a new paradigm of curriculum development that is grounded in an ethic of caring to provide an expanded context for nursing education “by calling upon the highest ethical self in the process of an evolving consciousness” (p. 53). Caring is concerned with the human center of self and other. In this sense, caring educators are known as healers that provide “alternative pathways and enable others to find their own voice” (p. 53). Maxine Greene’s (1978) notion of shifting from a sort of mechanical type of behavior to a “Wide-Awakeness” of landscape that demands an “informed passion that frames the very perceptions and questions about knowledge and reality” (p. 38) is the philosophical foundation for caring curriculum. Bevis and Watson explains this as

Such an approach calls for encouragement of self-reflection wherein the educators can come in touch with their own humanity and encourage the release of the human spirit in teaching-learning processes – caring processes that must be considered in nursing education as we seek to facilitate learning associated with human health and healing processes and expert human caring practices (p. 37).

A caring curriculum must integrate all three domains of learning: cognitive, affective, and psychomotor “to enhance the graduates’ knowledge and skills for competent practice and their capacity for attitudes and mindsets that promote humanistic, caring, interactions with patients” (p. 361). Brown (2011) explains,

Nursing education has traditionally placed great emphasis on the development of cognitive and psychomotor skills to produce competent clinical practitioners. While the acquisition of knowledge and skills is important to professional practice, nursing students are also required to develop attitudes, beliefs, and values that are central to the nurturing and caring perspective of nursing (p. 361).

The cognitive domain includes those mental actions required to perform a particular nursing skill. The psychomotor domain involves musculoskeletal actions and dexterity required to perform the skill. The affective domain is manifested by performing the skill in a caring manner (Brown, 2011).

A caring curriculum employs experiential learning that affords students the opportunity to practice interpersonal communication to develop a therapeutic relationship (Brown, 2011). A helpful pedagogical strategy to develop a foundation of caring is to afford students the opportunity to discuss their personal meaning of caring. This allows them to realize that caring is defined in various ways and influenced by a person’s culture. Afterwards, faculty provide students with definitions of caring from nursing leaders, which are “used as a foundation for discussing the role of caring in nursing” (p. 195). Another affective strategy is role-playing of appropriate caring behaviors in a nonthreatening environment. In the clinical setting students begin to initiate caring behaviors with patients, and encouraged to reflect on those behaviors through journaling.

Labrague (2012) developed a Caring Intervention Guide (Table 1.1) to facilitate the development of a caring curriculum (p. 111). This guide is based on findings of a quantitative

study that examined the caring competencies of nursing students as perceived by patients. The Caring Behavior Assessment Tool (CBA) was completed by 174 hospitalized patients.

Table 1.1
Caring Intervention Guide

Objectives	Specific Behaviors
Formulate activities that would allow nursing students identify and clarify their own caring behaviors.	Self-Awareness Workshop/Activity Caring Behavior Assessment Group/Classroom Discussion
Develop strategies to increase the level of knowledge and understanding of caring practices.	Lecture/Seminar on Components of Caring
Develop caring-focused teaching strategies.	Infuse caring enrichment activities in every subjects
Conceptualize a strategic plan to help nursing students improve/enhance their caring capabilities.	Seminar-Workshop on Role Modeling Role playing Group Discussion
Strengthen students commitment to the value of caring.	Submission of a written journal, Nursing Care Plans (NCP's) and anecdotal record of demonstration of carative factors. Summative self-assessment on integration of carative factors during clinical exposure.
Provide an environment that models and promotes caring.	Faculty positive role modeling of caring Workshops for clinical instructors on Caring Competency

Emergence of Simulation in Nursing Education

Historically, the use of simulation can be traced back as early as 1939 as a teaching strategy in the aviation field (Hyland & Hawkins, 2009). In the early 1900s, the first low-fidelity simulator in nursing education, Mrs. Chase, was a life-size human mannequin developed to allow students to practice psychomotor nursing skills. Resusci-Anne was created in the early 1960s for cardiopulmonary resuscitation training (Hyland & Hawkins, 2009). The conception of Sim One in the mid-1960s was the starting point for actual computer-controlled simulators. A more

sophisticated simulator, The Harvey model, introduced in 1969, "provided heart and lung sounds to enhance learning taking place in the psychomotor laboratory" (p.16). In 1996, the first human patient simulator was created followed by the PediaSim in 2005, which mimics a child (Rodgers, 2007). The Laerdal Medical Company introduced the first high-fidelity manikin-based patient simulator, SimMan, in 2000, which operates on programming by an instructor. This type of simulator is widely used in nursing programs worldwide.

Over the past decade nursing education has experienced a paradigm shift because of the need to change from traditional pedagogies to the adoption of new teaching methods that are most effective in helping students learn to practice in rapidly-changing environments. Billings and Halstead (2009) provide additional information concerning the emergence of simulation,

The dynamics of the hospital environment today make it a less than ideal educational setting. Increased severity of illness of patients, decreased length of stay, heightened technology, patient safety initiatives, and workforce shortage all decrease the ability of staff nurses, even if expert, to mentor students. With increased enrollment in schools of nursing, nurse administrators are unable to accommodate all requests for student placements. Clinical learning using simulation has emerged because of these forces (p. 323).

One of the innovations reported in the nursing literature is the "use of high-fidelity simulation as an adjunct to or replacement for clinical experiences" (p. 39). Simulation is a type of experiential learning approach that allows students to combine prior and recent knowledge to work through diverse patient scenarios, as well as exposes students to educational experiences that enhance critical thinking skills (Park, Cleary, McMillan, Murphy, Conway, & Griffiths, 2012).

In 2003, the National League of Nursing (NLN) endorsed the use of simulation as a pedagogy to enhance students' critical thinking in the complex clinical environment (Sanford, 2010). Park et. al (2012) state, "Simulation as an educational method provides an opportunity to

structure learning systematically to help students acquire deep content knowledge and to facilitate the development of critical thinking processes” (p. 42). Simulation allows exposure to scenarios designed to replicate a real-life situation in a safe, protected environment.

As the use of simulation increases in nursing education, a concern is whether or not it can foster nursing students’ development of verbal and nonverbal caring behaviors inherent in establishing a reciprocal relationship with actual patients. According to Diener and Hobbs (2012),

Unless time is spent with human beings in the earliest stages of nursing education, transpersonal caring relationships do not have space to develop. Learning, crafting, and maturation of caring behaviors threatens to become a serendipitous event or is no longer perceived as an essential characteristic of nursing (p. 34).

During a simulation scenario, students practice responding to the physiological needs of the simulated patient. However, the emotional and spiritual aspects of patient care as well as the development of communication skills are often disregarded. According to Meehan (2012), “Spiritual care in nursing is primarily expressed in the attitudes and actions of nursing practice guided by spiritual nursing values, particularly recognition of human dignity, kindness, compassion, calmness, tenderness, and nurses’ caring for themselves and others” (p. 990).

Since healthcare is laden with technology, it is imperative that nursing students are taught to see beyond the technological competencies and focus on caring and knowing the person (Blum, et al., 2010). As Diener and Hobbs (2012) posit, “Caring behaviors must be nurtured and developed over time while cultivated by caring practitioners and educators” (p. 34). However as the authors further contend, “questions persist concerning the ability of technology-driven robotic devices to form and cultivate caring behaviors, or sufficiently develop interactive nurse-client communication necessary in the context of nursing” (p.35). For this reason, this study explored the perceptions of caring as well as caring behaviors in the simulated environment.

Problem Statement

The National Council of State Boards of Nursing's (2010) survey of simulation in nursing education revealed that 87% of associate and baccalaureate programs use either high- or medium-fidelity simulation experiences. High-fidelity experiences provide scenarios and program equipment to simulate serious clinical situations (Billings & Halstead, 2009). As students respond to these situations, “they demonstrate their abilities to establish priorities, make decisions, take appropriate action, and work successfully as part of a team” (p. 323). Students work with a patient simulator that talks and exhibits other human-like responses. A medium fidelity environment allows students to practice “procedural skills and caregiving in a safe environment that allows them to make mistakes, learn from those mistakes, and develop confidence in their ability to approach and communicate with patients in the clinical setting” (p. 323). Despite the increased use of simulation in nursing education, the evidence concerning its effectiveness is inconsistent (Foronda, Siwei, & Bauman, 2013; Regan & Onello, 2013; Shinnick, Woo, & Menten, 2011). Shinnick et al. (2011) declare, “Despite the popularity of simulation, this time-intensive and costly method of teaching has been accepted with little evidence to support its efficacy” (p. 65). Because of this, many educators struggle with evaluating the effectiveness of simulation as well as how to integrate it into the curriculum. An additional barrier is inadequate training of and support from administrators (Jeffries, 2008).

Several studies show that nursing students utilizing simulation demonstrate considerable improvement in student satisfaction, self-confidence, and critical thinking skills (Gore, Leighton, Sanderson, & Wang 2014; Dearmon et al., 2013; Goodstone, et al., 2013; Kim, Ko, & Lee (2012); Sharpnack & Madigan, 2012; Thomas & Mackey, 2012; Wood & Toronto, 2012; Guhde, 2011; Levett-Jones, Lapkin, Hoffman, Arthur, & Roche, 2011; Cant & Cooper, 2010; Vivian,

Laura, Lau, Mei, Kiat, 2010; Sullivan-Mann, Perron, & Fellner, 2009; Reilly & Spratt, 2007).

However, there are studies that dispute these findings. Rome's (2012) experimental pretest/posttest design using the Health Science Reasoning Test (HSRT) measured critical thinking in relation to an 8-hour simulated learning experience versus a traditional clinical experience for 45 second year associated degree nursing students. Results indicated no significant difference in HSRT posttest scores between the simulated and traditional group. Another quantitative study by Lewis and Ciak (2011) of senior level nursing students participating in a simulation laboratory revealed increased satisfaction and self-confidence compared to students not partaking in simulation. However, the study showed no significant difference in critical thinking ability between the two groups. Additionally, studies have shown that confidence level of students has been unaffected by simulation (Blum, Borglund, & Parcels, 2010; Alinier, Hunt, & Gordan, 2006; Alinier, et al. 2004; Feingold, Calaluze, & Kallen, 2004).

Assigning students to healthcare agencies for clinical is becoming a challenge because of the scarcity of accessible clinical sites as well as a limited number of faculty (Warland, 2011). In 2012, 79,659 qualified applicants were denied admission to baccalaureate nursing programs primarily because of an insufficient number of faculty and clinical sites (American Association of Colleges of Nursing, 2012). Because of this issue, nursing programs are beginning to use simulation as an alternative to clinical practice in the hospital (Kaddoura, 2010).

A personal concern with the increased use of simulation technology is the potential to further dehumanize the "patient" as the focus of nursing care. Thus, a question that arises is how can nursing students practice caring with a simulator. As a facilitator of multiple simulation scenarios over the past eight years, the researcher has witnessed how students focus their attention on monitors displaying the simulated patient's physiologic responses such as blood

pressure, heart rate, and breathing pattern rather than observing the patient for abnormal responses. As a result, students become fixated on the technology rather than the simulated patient. This type of behavior in a simulated environment has the potential to minimize the importance of caring in nursing. Especially if simulation comprises the majority of the nursing curriculum's clinical practice. According to Keating (2014), "...there is little evidence regarding how high-fidelity simulation compares to traditional clinical approaches" (p. 61). Although simulation is a type of technology, an expectation is that practice with the simulated mannequin should be as close as possible as caring for an actual patient.

The notion that clinical simulation is just as effective as the real-life clinical environment is unsettling. Although high-fidelity patient simulators are equipped with human-like responses, "humans are qualitatively different from mathematized machine representations...human responses are less sequential, less predictable, more emergent, and more variable than current technology represents" (Whitman & Backes, 2014, p. 15). Patients are living, breathing idiosyncratic human beings who cannot be controlled with a computerized apparatus. As Berragan (2011) hypothesizes,

As supporters of simulation, it is natural to be seduced by new and more capable technologies. There is very real possibility that our focus will move from real patients and the evolving identities of student nurses, towards the endless possibilities of the technology of simulation (p. 662).

The author further asserts that overexposure to the simulated environment may interfere with their socialization into the roles as student nurses as they find "it difficult to translate their learning in order to care for real patients and work as a member of a clinical team" (p. 662). This dissertation adds to the body of knowledge pertaining to simulation by obtaining information regarding the simulation experience from the perspective of nursing students as well as their perceptions of caring and the display of caring behaviors during the simulation experience.

Purpose

The purpose of this study was to explore the use of simulation in a nursing program along with the relationship between simulation and caring behaviors among nursing students. This mixed methods case study design describes third-year baccalaureate nursing students' perceptions about simulation along with their ideas about the meaning of caring in nursing and displaying caring behaviors in the simulated environment. Selection of participants was based on their varied encounters with simulation to provide in-depth information in relation to their experience. Quantitative data disclosed students' evaluation of the simulation activity along with whether or not they demonstrated caring behaviors in the simulated environment. Qualitative data sought to uncover students' beliefs about their involvement with simulation, and views about caring in nursing versus nursing in the simulated environment. The rationale for combining quantitative and qualitative methods was to obtain a holistic description of simulation and caring through the use of an observation protocol, evaluation survey, face-to-face interviews, and a reliable and valid quantitative instrument. A description of these tools is provided in Chapter 3. This study focused on the following research questions:

1. How do third-year nursing students describe the simulation experience?
2. How do third-year nursing students perceive and demonstrate caring behaviors while engaged in the simulation experience?

Definitions

Active learning- a process whereby students engage in activities, such as reading, writing, discussion, or problem solving that promote analysis, synthesis, and evaluation of class content.

Caring behaviors – genuine presence, attentiveness and response to a patient's request without distractions from technology (Smith, Turke, & Wolf, 2012).

Clinical agency/environment- a healthcare organizations that permits nursing students to care for patients.

Clinical component – the component of a nursing course that requires students to provide patient care in a healthcare agency.

Clinical simulation – when students practice technical skills as well as interpret patient variables (physical assessments, past medical history, laboratory test results, diagnostics, and physician orders) on a simulated patient (Wane & Lotz, 2013).

Clinical skills/processes – the capability to perform those duties directly related to patient care (<http://dictionary.sensagent.com/clinical%20skills/en-en/>)

Critical thinking skills – the process of purposeful thinking and reflective reasoning where practitioners examine ideas, assumptions, principle, conclusion, beliefs, and actions in the context of nursing practice (Brunt, 2005).

Healthcare- the diagnosis, treatment, or prevention of a disease or illness.

Healthcare agencies- organizations, such as hospitals or clinics, designed to meet the health needs of a target populations.

Healthcare alterations – a disease or illness.

High-fidelity simulator – includes software in the mannequin that can be accessed and manipulated with a laptop or desktop computer, and is adaptable in real time to change parameters in the condition of the mannequin. The mannequin can be programmed to simulate unstable or stable physiological signs and reacts in real time to actions taken by the user (Laschinger, Medves, Pulling, McGraw, Waytuck, Harrison, & Gambetta, 2008, p. 280).

Low-fidelity simulators – static mannequins that demonstrate limited features and realism of the human body (Rothberg, 2008).

Medium-fidelity simulators – mannequins that provide some realism of the human body such as heart or breath sounds (Rothberg, 2008).

Patient – a person who receives medical treatment.

Simulated patient – a high-fidelity simulator.

Simulation activity/exercise – a scenario depicting a deteriorating patient that requires students to work together in small groups “to recognize, interpret, and integrate new information with their previous knowledge so as to make decisions about the course of action to follow” (Park, et. al, p. 42).

Skills laboratory – a dedicated instructional room in a nursing program with interactive models and simulators that depicts the hospital setting for training and self-study of nursing students.

CHAPTER 2

REVIEW OF THE LITERATURE

For the purpose of this study, the literature review is divided into the following sections: definition of simulation, advantages of simulation, challenges of simulation, incorporation of caring in nursing curricula, and simulation and caring.

Definition of Simulation

Simulation is defined as the reproduction of essential features for the purpose of study or training; it is an imitation of something or an enactment of the experience (Dictionary.com Unabridged, n.d.). Traditionally, simulation in nursing education included instruments used by nursing faculty to guide students in learning the skills needed for clinical practice such as role-playing, games, use of static mannequins, case studies, and multimedia presentations (Smith & Roehrs, 2009; Rothgeb, 2008; Tuoriniemi & Schott-Baer, 2008). Over the past decade, simulation has evolved as computerized technology consisting of the following three levels: low-fidelity, medium-fidelity, and high-fidelity simulation (Kilmon, Brown, Ghosh, & Mikitiuk, 2010). Fidelity denotes to what extent the simulated mannequin imitates reality (Nehring & Lashley, 2009). Rothbeg (2008) offers the following descriptions of the levels of simulation:

Low-fidelity simulators are used to learn, practice, and achieve a designated skill; high-fidelity simulators are used to develop critical thinking skills. Low-fidelity simulators are static, without motion, and demonstrate few features with realism. Medium-fidelity simulators provide more realism, including heart or breath sounds. High-fidelity simulators present a realistic depiction of the human body in look, feel, and response to the provided care (p.489).

Simulation allows exposure to scenarios designed to replicate a real-life situation in a safe, protected environment.

Typically, simulation includes a planning, implementation, and debriefing stage (Vivien, Laura, Lau, Mei, and Kiat, 2010). The planning stage of the simulation entails evaluating if

simulation aligns with course objectives, and in what manner it can be used with current teaching activities. Additionally, role development is a crucial component of the planning stage of simulation. All students participating in a simulation exercise are assigned either a direct or indirect role. Students assigned a direct role, such as primary nurse, interact with the simulated patient and perform appropriate interventions. An indirect role assignment is usually an observer or family member who has no direct contact with the simulator. According to Whitman and Backes (2014), "Role direction has proved an important strategy for enhancing student learning" (p. 289). Role ambiguity is avoided by providing students with a detailed description in addition to expectations of assigned role.

During the implementation phase, students role-play a scenario that focuses on single- or multiple healthcare issues. The simulator is programmed to "produce human-like responses to numerous disease states and reactions to treatments and interventions such as medication administration and cardiopulmonary resuscitation" (Pasci, 2009). Students must rely on their current readings, class lecture/discussions, and practicing of skills in the laboratory environment in order to perform competently (Adamson, 2009). The simulated patient's response is based on the student's interventions during a predetermined period. If correct care and interventions are delivered in a timely manner, the simulated patient will demonstrate a positive response. Conversely, if inappropriate care is performed, the simulated patient will show signs of deterioration and in some cases may die. Multiple groups of students can participate in the same scenario at different times.

Debriefing, the stage whereby faculty and students reexamine the clinical encounter, fosters the development of clinical reasoning and judgment skills. Debriefing allows students to transfer knowledge from the simulation exercise to critically reflect upon their decision-making

process and performances to identify further learning needs (Drefeurst, 2012). Cato, Lasater, and Peeples (2009) discovered students' use of reflexivity through debriefing as a tool for furthering the students' clinical judgment/critical thinking skills by assisting them "to think deeply about the situations they encounter in simulation, analyze the patient events and their responses, and apply their experiences to their broader knowledge of nursing and the clinical judgment required to practice safely and effectively" (p. 108). Cato, et al. (2009) define objectives of debriefing are defined as,

- 1) Identification of the different perceptions and attitudes that have occurred; 2) Linking the exercise to specific theory or content and skill building techniques; 3) Development of a common set of experiences for further thought; 4) Opportunity to receive feedback on the nature of one's involvement, behavior, and decision-making; 5) Reestablishment of the desired classroom climate, such as regaining trust, comfort, and purposefulness (p. 106).

Advantages of Simulation

Enhancement of Clinical Knowledge

One of the advantages of simulation is related to the attainment of clinical skills such as inserting a catheter device into the bladder to aid in urinary elimination, and a tubing through the nose into the stomach to provide nutrition. Learning skills with a high-fidelity mannequin can help students to become more proficient with performing clinical skills with real patients. Grady, Kehrer, Trusty, Entin, Entin, and Brunye (2008) tested 52 first-year nursing students' achievement of basic nursing skills when taught with a low-fidelity versus a high-fidelity simulator. The students were evaluated with an observer-based instrument followed by the completion of a questionnaire regarding their attitudes about simulation in nursing education. Results demonstrated that students trained with a high-fidelity simulator performed skills better because it provided a more realistic environment.

Moule, Wilford, Sales, and Lockyer (2008) conducted a two-phase mixed methods study of clinical skills training with simulation. In phase one faculty tested 69 students performance of clinical skills pre- and post-simulation. The results of these tests were compared to determine if simulation could support the development of various skills. Phase two included interviews with the six mentors to determine if they believed simulation could prepare students for practice. The findings from both phases indicated simulation was an intense learning experience that facilitated students' preparation for clinical practice.

Enhancement of Critical Thinking Skills

Another advantage of simulation provided in the literature is the enhancement of critical thinking skills. This involves the ability to use previously learned information “to think through each situation to provide individualized, effective care rather than simply following routine procedures” (Billings & Halstead, 2009, p. 239). Cant and Cooper (2010) conducted a systematic review of twelve quantitative studies between 1999 and 2009 to determine the effectiveness of simulation as a teaching/learning strategy. All of the studies reported simulation as a valid pedagogical approach that led to additional gains in knowledge and critical thinking ability.

Vivien, et al. (2010) measured the critical thinking disposition of 409 first and second year nursing students prior to simulation training, and after exposure to 50 hours of simulation for 12 months. Based on the results, the critical thinking disposition scores of both groups were lower prior to simulation than scores after the completion of the simulation training. The students' scores on the critical thinking test after simulation were significantly higher. A similar study conducted by Wood and Toronto (2012) measured the critical thinking disposition of 85 first-year nursing students for two weeks prior to and following simulation. The results also revealed an increase in critical thinking disposition after the simulation exercise.

Sullivan-Mann, et al. (2009) measured critical thinking skills of 53 second-year associate degree students with the Health Sciences Reasoning Test pre-simulation and post-simulation. The control group participated in two simulation scenarios whereas the experimental group received two additional opportunities for simulation (a total of 5). According to the results, both groups' critical thinking scores increased post-simulation, with no significant difference between the two groups. Comparable results were found in previous studies (Horan, 2009; Shin, Jung, Shin, & Kim, 2009).

Several studies have compared the effects of the different levels of simulation on critical thinking skills. Goodstone, et al. (2013) explored the development of critical thinking of first-year associate degree nursing students who received instruction using high-fidelity patient simulation versus low-fidelity simulation. The results revealed an increase in critical thinking scores following exposure to both types of simulation. Additional studies resulted in the same conclusion (Guhde, 2011; Levett-Jones, Lapkin, Hoffman, Arthur, & Roche, 2011). These studies are significant for nursing programs who cannot afford the increased cost associated with a high-fidelity simulator.

Increased Self-Confidence and Satisfaction

Another advantage of simulation revealed in the review of the literature is improvement in students' self-confidence and satisfaction with the simulation experience. Gore et al.(2014) quasi-experimental study "explored students' perceptions of how well their learning needs were met by (a) comparing high- versus low-fidelity simulation groups within simulated and traditional clinical environments and (b) comparing simulated versus traditional clinical environments based on high- and low-fidelity groups" (p. 309). Students perceived their learning needs were enhanced with high-fidelity compared to low-fidelity simulation. Furthermore,

students found no difference in how well their learning needs were met when comparing high-fidelity simulation with the traditional clinical environment.

Dearmon et al. (2013) conducted a mixed methods study of 50 first semester baccalaureate nursing students following their participation in a simulation-based clinical orientation. Self-confidence was measured with the Self-Confidence Assessment Scale (SCA) before and after the orientation. The results revealed "a significant improvement in self-confidence as a result of simulation-based orientation" (p. 35). During the focus groups, the primary theme was "overwhelming satisfaction" (p. 35) with simulation. Dearmon et al. (2013) posit, "Students appreciated the relaxed and supportive learning environment and the opportunity to practice with a real patient prior to entering the clinical experience" (p. 35).

Kim, Ko, and Lee's (2012) quasi-experimental study examined the effects of simulation-based education on communication skill and clinical competence of 70 junior-level nursing students (control size of 35, and experimental group size of 35). The study showed that "the communication skill score and clinical competence score of the experimental group that participated in simulation-based education increased compared to the control group" (p. 318).

Thomas and Mackey's (2012) quasi-experimental pre-test and post-test design compared the level of confidence of junior and senior-level nursing students in a high-fidelity clinical simulation with students in traditional clinical experience. The Clinical Decision-Making Self-Confidence Scale was used to test a sample of 14 students enrolled in the simulation group and 10 students in the traditional course. The study concluded that the simulation group had a significant higher level of confidence than the clinical group at the end of the course.

Sharpnack and Madigan's (2012) mixed methods study tested sophomore students' overall satisfaction with low-fidelity simulation using the Student Satisfaction and Self-

Confidence in Learning questionnaire as well as interviews. All of the components on the questionnaire received a high rating from the students indicating their satisfaction with the simulation approach. According to Sharpnack and Madigan, “The sophomores who participated found the low-fidelity simulation approach to be realistic, collaborative, individualized, and supportive” (p 266). Qualitative responses indicated that students believe the experience “provided an opportunity to gain mastery of clinical thinking skills and clinical competencies” (p. 266).

Reilly and Spratt (2007) conducted a qualitative study of second-year students' experience with high-fidelity simulation. A theme that emerged from the interview data was simulation as a pedagogy to promote active learning. Another theme was that students developed the self-confidence to practice in a safe learning environment. This confidence transferred to the clinical setting. According one student, "Participation in high-fidelity simulation gave me confidence in what I had been through in the scenario...I already know the steps involved. It increased my confidence in practice" (p. 547).

Challenges of Simulation

Although review of the literature primarily revealed advantages of simulation, there were also specific challenges exposed. Howard, Englert, Kameg, and Perozzi (2011) evaluated faculty's perceptions after implementing high-fidelity simulation in an undergraduate nursing program. Faculty identified time as a primary hindrance for successfully implementing simulation. This included a lack of time for learning the simulation technology as well as scheduling students. An additional challenge was inadequate space for implementation.

Thompson and Bonnel's (2008) evaluation of the use of simulation in a pharmacology nursing course revealed that prepackage simulation scenarios failed to cover all of the course

objectives, and there was a lack of time available to develop new scenarios. Additionally, students often shared what occurred during the scenario with students in subsequent groups, which interferes with the goal of improving their critical thinking skills.

Harder, Ross and Paul (2013) conducted an ethnographic study of 84 third-year students to examine nursing students' learning in high fidelity simulation. The findings suggest that learning is based on the process of role assignments during the simulation exercise. Harder, et al. contend,

Students perceived that their learning experiences were impaired when they were not assigned to a clear role or when they were assigned to an observer role. Conversely, students perceived their learning to be enhanced through opportunities to participate in active roles and rotate roles during the simulation experience, as well as through the provision of clear definitions of students' and instructors' roles (p. 333).

Caring in Nursing Education

Incorporation of Caring in Nursing Curricula

Several studies illustrate the advantages of a caring curriculum. In Drumm and Chase's (2010) study students "expressed the value of the caring curriculum and the importance of clinical experiences as facilitating their learning to care" (p. 34). The students' knowledge of caring grew as they progressed through the program. This growth is further illustrated by the following statements from students, "I think it (caring) has to be within you and I think it is within everybody" (p. 33), and "It's that feeling inside; I didn't know how to transfer that to nursing" (p. 33).

Adamski, et al (2009) conveys the importance of incorporating caring in the nursing curriculum. The purpose of their study was to explore nursing students' perceptions of caring and ability to form caring relationships after hearing the stories of clinical nurses about their own caring experiences. The Coates Caring Efficacy Scale was administered as a pretest and posttest

as well as individual interviews. Although no significant difference was found between the pre- and post-test results, the interviews showed that the students were able to internalize the vital concept of caring after hearing the nurses' stories. This is illustrated in the following statement by a student that stated she tried some of the things the nurse talked about,

Touching people on the arm worked really well and I will do it again. I gained confidence. I noticed all the nurses made purposeful eye contact. I have consciously increased my eye contact and it has helped me connect with patients and start talking. Suddenly, the talk switch turns on. I say, "Tell me how you are feeling, I really want to." Trust was needed to know I really cared. I want to hurry up and be a nurse....This is the good stuff (Adamski, et al. 2009, p. 360)

Caring and Simulation

There are limited studies regarding the incorporation of caring in simulation. Blum, et al. (2012) used simulation as a tool to teach caring behaviors to students by providing reading assignments that focused on those behaviors before simulation. During simulation students were expected to perform behaviors during a simulated nurse-patient situation in the classroom. Caring was a major focus weekly as students were required to assess their caring behaviors and identify deficiencies in caring. The researchers discovered a significant increase in caring behaviors of students as they progressed through the course. The top ten caring behaviors exhibited by the students include: "touching the patient to communicate caring, spending time, being patient or tireless with the patient, trusting the patient, including the patient in planning his/her care, relieving symptoms, being empathetic or identifying with the patient, attentively listening, meeting the patient's stated and unstated needs, and being hopeful" (p. 47). Eggenberger and Keller (2008) also believed that caring can be successfully integrated into simulation technology with careful planning.

Conversely, Diener and Hobbs (2012) propose, "Unless time is spent with human beings in the earliest stages of nursing education, transpersonal caring relationships do not have space to

develop" (p. 34). The authors further contend that it is impossible to develop genuine caring feelings for a simulated patient because caring requires reciprocity that is not developed between the student and simulated patient.

Although studies have been conducted concerning students' perception of their experience with simulation, they lack an in-depth analysis. According to Foronda, et al., (2013), "The discipline of nursing lacks robust research and evidence that supports simulation as a method for nurse education" (p. 413). This dissertation's objective was to gain insight into students' feelings about simulation and the influence of simulation on caring behaviors.

CHAPTER 3

RESEARCH METHODOLOGY

This dissertation explored how students experience simulation and caring in nursing education by addressing the following research questions:

1. How do third-year nursing students describe the simulation experience?
2. How do third-year nursing students perceive and demonstrate caring behaviors while engaged in the simulation experience?

Research Design

Mixed Methods

This study utilized a mixed methods case study design to investigate how nursing students experience simulation, and the role of caring in the simulated environment. Mixed method research collects, analyzes, and combines qualitative and quantitative data fully to understand a phenomenon (Creswell & Clark, 2011). The rationale for combining both types of data is that neither qualitative nor quantitative methods alone is sufficient to provide a complete description of nursing students' encounter with simulation. When used in combination, qualitative and quantitative methods allowed the researcher to gain insight into students' impression of simulation as well as investigate the display of caring behaviors while interacting with the simulated patient. After data collection analysis, results from both methods were converged to provide a comprehensive description of simulation and caring.

Mixed methods research is often linked to pragmatism which focuses "on the consequences of research, on the primary importance of the question asked rather than the methods, and on the use of multiple methods of data collection to inform the problems under study" (Creswell & Clark, 2011, p. 41). Mixed methods researchers can draw liberally from both qualitative and quantitative methods to sufficiently meet their needs and purposes (Creswell,

2009). Consequently, these researchers have access to multiple methods, "different worldviews, and different assumptions, as well as different forms of data collection and analysis" (p. 11).

When designing a mixed methods study, four decisions require consideration: interaction, priority, timing, and integration (Creswell & Clark, 2011). Interaction refers to whether the quantitative and qualitative components are kept independent or interact with each other. A collaborative level of interaction occurred in this study, which involved an association between quantitative and qualitative strands. Initially, quantitative and qualitative data were analyzed independently. Specific information related to both strands is provided later in this chapter. Next, interview and survey data pertaining to participants' description of simulation were analyzed together. Afterwards, data from the observation protocol and interview data of perceptions of caring were collectively analyzed. Priority denotes the weighing of the qualitative and quantitative methods for answering the research questions. In this study quantitative and qualitative components play an equally important role in addressing the research problem. Timing refers to whether the collection and analysis of qualitative and quantitative data will occur concurrently, sequentially, or a combination of the aforementioned. Collection of data occurred sequentially. The researcher collected quantitative data first followed by the collection of qualitative data. Integration involves determining the point of the research process to mix both strands. Mixing in this study occurred during data analysis which is discussed further in chapter 4. Prior to data collection, the researcher obtained informed consent from all participants (Appendix A).

Quantitative Phase

Quantitative research is often associated with post-positivism that focuses on identifying and assessing the causes that influence the outcome (Creswell & Clark, 2011; Creswell, 2009;

Merriam, 2009; Gall, Gall, & Gorg, 2007). According to Gall et al. (2007), “Quantitative researchers study populations or samples that represent populations” (p. 32). They attempt to remain objective and neutral while studying participants in their natural settings (Johnston and Christensen, 2012; Gall et al., 2007). Numerical data is generated to represent the social environment, and analyzed with statistical methods.

For the quantitative phase, the researcher collected data over a six-week period pertaining to both research questions (Table 3.1). Observation protocol data provided information about nonverbal and verbal caring behaviors that were exhibited by participants as they were observed interacting with the simulated patient. Survey data revealed participants’ opinions of the simulation experience. This chapter includes a specific description of each instrument. Data from both instruments were entered into the Statistical Package for the Social Sciences (SPSS) for descriptive analysis which is provided in chapter 4.

Table 3.1
Researcher’s Observation Schedule

Date	Time	Number of Observed Scenarios
September 30 th	7:00 – 11:00 a. m.	3
October 7 th	7:00 – 11:00 a. m.	3
October 14 th	7:00 – 8:15; 9:50 – 11:00 a. m.	2
October 21 st	7:00 – 11:00 a. m.	3
October 28 th	7:00 – 11:00 a. m.	3
November 11 th	7:00 – 11:00 a. m.	3

Qualitative Phase

Qualitative research is typically associated with a constructivist worldview that focuses on participants’ interpretations of their experiences (Creswell and Clark, 2011; Creswell, 2009; Gall, et al, 2007). Rather than a single, observable reality, there are multiple realities, or interpretations, of a single event (Merriam, 2009). According to Creswell (2013),

Qualitative researchers collect data in a natural setting sensitive to the people and places under study, and data analysis that is both inductive and deductive and establishes patterns or themes. The final written report or presentation includes the voices of participants, the reflexivity of the researcher; a complex description and interpretation of the problem and its contribution to the literature or call for change (p. 44).

As Johnson and Christensen (2012) explain, "The researcher has direct contact with and gets close to the people, situation, and the phenomenon under study; the researcher's personal experiences and insights are an important part of the inquiry and critical to understanding the phenomenon" (p. 110). Furthermore, qualitative research provides a holistic perspective to comprehend the whole phenomenon as a complex system that is greater than the sum of its parts.

In the qualitative phase, a phenomenological approach was used to uncover additional information about simulation and caring. Using face-to-face interviews, the researcher uncovered the students' thoughts, feelings, images, and beliefs about the simulation experience.

Additionally, students disclosed impressions of caring in nursing along with thoughts of displaying caring behaviors with the simulated patient. Phenomenology does not involve a priori presuppositions placed on experiences in advance, "whether these are drawn from religious or cultural tradition, from everyday common sense, or, indeed, from science itself" (Moran, 2001, p. 25). The researcher relied solely on the students' accounts of simulation and caring during this study minus any premeditated expectations.

Philosophical Assumptions of Phenomenology

Husserlian phenomenology, because of its descriptive focus, was used for this study. Husserl formally introduced phenomenology in the first half of the twentieth century to provide a philosophical foundation for the sciences (Sokolowski, 2000). Husserl believed that experience as perceived by human consciousness has worth and should be the object of scientific study. According to Lopez and Willis (2004),

...subjective information should be important to scientists seeking to understand human motivation because human actions are influenced by what people perceive to be real. As human beings generally go about the business of daily living without critical reflection on their experiences, Husserl believed that a scientific approach was needed to bring out the essential components of the lived experiences specific to a group of people (p. 727).

Intentionality, the core doctrine of phenomenology, asserts that every experience is consciously related to an object of some kind (Sokolowski, 2000). Not only does an object exist, “it has meaning and a mode of being for the consciousness, it is a meaningful correlate of the conscious act” (Moran, 2001, p. 37). Essence refers to the features of the lived experience that are common to all persons that have the experience.

The descriptive phenomenology method of inquiry contains four core components: 1) bracketing (*epoche*), 2) analyzing, 3) intuiting, and 4) describing (Wojnar & Swanson, 2007). The initial component, bracketing, involves the researcher remaining objective by putting aside what is already known about the experience being investigated, and approaching the data with no preconceptions about the phenomenon in order to gain insight into the common features of the lived experience (Wajnor & Swanson, 2007). According to Moustakas (1994), “The value of the *epoche* principle is that it inspires one to examine biases and enhances one’s openness even if a perfect and pure state is not achieved” (p. 61).

The second component requires rigorous analysis of the descriptive phenomenological investigation. Colaizzi’s (1978) method described by Wajnor and Swanson (2007), consisting of the following seven steps, will be used as a guide:

1. Reading and rereading descriptions
2. Extracting significant statements that pertain directly to the phenomenon
3. Formulating meanings for these significant statements
4. Categorizing the formulated meanings into clusters of themes that are common to all participants
5. Integrate the findings into exhaustive description of the phenomenon being studied
6. Validating the findings with participants

7. Incorporating any changes based on whether or not the informants' feedback are accurate (p. 176).

The third step of intuiting involves the researcher experiencing a sense of actually living through the participant's experience. This occurs through the process of intimate interaction with the participants. Wajnor and Swanson (2007) further explain intuiting as

Consistent with Husserl's assumptions about the importance of transcendental consciousness (remaining open to the reality of another's experience) intuiting ultimately leads to an innate sense of what it might be like to "live in the participants skin." As accounts are generated, the investigator's intuition is "fed" by more and more data through attentive listening, deep critical reflection about commonalities across participants, and a concerted effort to understand what it must be like" (p. 176).

The final component, describing, involves "providing a theoretical model representing the essential structures of the phenomenon under study" (Wajnor & Swanson, 2007, p. 177). As Wajnor and Swanson contend, "Consistent with the Husserlian tradition, if the true structure of the phenomenon is identified, then anyone who has experienced the phenomenon should be able to identify their own experience in the proposed description" (p. 177).

Research Context

The study took place during the Fall and Spring of 2014, in a baccalaureate nursing program at a private, Catholic institution in the Southeast portion of the United States. The philosophy of the school ascribes to the beliefs of the Roman Catholic Church that all individuals are created by God and should be treated with dignity and respect. These principles are part of the school's conceptual model that focuses on preparing its graduates to provide holistic nursing care that encompasses meeting the healthcare needs of individuals, families, communities, and populations with full consideration of values, preferences, strengths, and needs.

Criteria for admission into the nursing program is completion of two semesters of prerequisite courses with a grade of C or better, a minimum grade point average of 2.75, and nine

hours of course work completed at the college. Each nursing course has a didactic and clinical component. Students must successfully pass both components before advancing to the next level of the program by attaining a didactic grade of C or better and a satisfactory clinical grade.

This institution was selected because simulation, using a high fidelity simulator, has been integrated into the nursing curriculum each semester of the program since 2014. Participants included students enrolled in a junior level nursing course during their third academic year. This population of students was selected because they have adequate practice with simulation to offer a valid description. The students were enrolled in Nursing Concepts 3, which focuses on providing holistic care for vulnerable individuals and families. The course had an enrollment of 114 students. Simulation is integrated into the course as a portion of clinical practice in maternal health, which focuses on care of women. In the hospital, students are exposed to nursing care of pregnant women before, during, and after pregnancy. However, because of the limited clinical sites for women's health, clinical hours in the hospital are inadequate. Students receive a learning plan that outlines simulation learning outcomes, the focus of each scenario, and pre-simulation assignments (Appendix B).

The course faculty randomly divided students into groups of six to eight students for clinical rotations in the hospital, and one simulation day. The simulation day for each group consisted of four hours of participation in three separate scenarios. Table 3.2 provides a sample of the simulation schedule along with a brief description of each scenario. On their assigned simulation day, students volunteered to portray a direct (primary nurse, secondary nurse) or indirect role (family member, observer) for each scenario. The primary nurse having the most direct interaction with the simulated patient, was ultimately responsible for the care of the patient while the secondary nurse served as the primary nurse's assistant for retrieving medications,

performing a treatment or repositioning the patient. When a student in a group volunteered for the role of primary nurse or secondary nurse, that student was not allowed to volunteer for these roles over again on that particular day. For example, if a student played the role of primary nurse in the first scenario, the student could not volunteer for that role in the next two scenarios.

Table 3.2
Sample Simulation Schedule

Date	Group	Scenarios
Tuesday, October 14, 2015	1	<p>Orientation (7:30-8:00 a. m.)</p> <p>Scenario #1 (8:00 – 8:30 a. m.) – K.A is hospitalized to receive medication to help with the delivery of her baby. Prior to delivery, she begins experiencing complications that is affecting her health as well as the baby. During the scenario, the students were expected to manage care of a patient in labor experiencing fetal complications.</p> <p>Debriefing (8:35– 8:50 a. m.)</p> <p>Break (15 minutes)</p> <p>Scenario #2 (9:05 – 9:35 a. m.) – D.N is admitted to the hospital for normal delivery of her baby. Her delivery is long and uncomplicated. During this scenario students are expected to care for the mother and prioritize and implement care of a newborn at birth.</p> <p>Debriefing (9:40 – 10:00 a. m.)</p> <p>Break (15 minutes)</p> <p>Scenario #3 (10:15 – 10:45 a. m.) – S.D is in the hospital following delivery of a healthy baby. She starts to have bleeding after delivery. Because of her religion, she cannot receive a blood transfusion. During this scenario students had to manage a patient experiencing bleeding within the context of cultural considerations.</p> <p>Debriefing (10:45 – 11:00)</p> <p>Completion of Evaluation (11:00 – 11:05)</p>

Physical Context

The simulation activity was conducted in the nursing school's recently developed simulation laboratory. The simulation suite consists of four rooms: an observation room, control

room, hospital room, and medication room. In the observation room students assigned the role of observer can watch the simulation scenario on a big screen television. The room also includes 15 chairs and a laptop computer. Simulation faculty use the laptop to determine if students completed the pre-simulation quiz for each scenario (Appendix C). The intention of these quizzes was test the students' knowledge pertaining to assigned readings related to each scenario (Appendix D). If the quiz was not taken, students received a grade of unsatisfactory, and were not allowed to participate in the scenario. The control room has a one-way mirror that allows faculty to view the scenario, as well as desk space with two chairs, and a laptop that permits manipulation of the simulator by faculty through the use of simulation software while observing the enactment of the scenario through the mirror. In the patient room, a high-fidelity simulator is positioned on its back in a hospital bed. Also in the room is a computer-like monitor on the wall that records the simulator's heart rate/rhythm, blood pressure, and respiratory rate along with other equipment and supplies typically stored in a hospital patient room. A telephone is located on the wall next to the bed. Students are expected to use this phone to call the physician when the need arises. A small room with a door is located adjacent to the patient room with a real-life medication cart that stores various medications.

The patient simulator is a female with the capability of delivering a baby (Figure 3.1). This is achieved by placing a toy baby in the abdominal cavity and turning on the birthing mode which pushes the baby through the vaginal canal electronically. The simulator is draped with a white blanket, and dressed in a hospital gown with a medium length black wig placed on its head. Faculty can manipulate the voice of the simulator either through automated voice controls via the simulation software or by speaking through the microphone. During the observed scenarios, the simulator communicated with students through the software as well as the voice of

the faculty facilitator. For example, when a student asked the simulator “How are you doing,” the simulator responded, “I don’t feel well, I’m having a lot of pain.” If the students asked the simulator a question that was not included in the software, the faculty responded through the microphone. Other props were included to make the scenarios more realistic, such as “blood” made from crushed cherry juice that was poured on the simulator to depict vaginal bleeding, and mineral oil that was rubbed on the baby to illustrate the texture of an actual baby during delivery.



Figure 3.1: High-Fidelity Simulator

The college uses a simulation software package with scenarios that depict various patient situations that may be encountered in the healthcare setting. A facilitator’s package for each scenario has instructions on facilitator and student preparation, patient data information, and preparing the setting with detailed instructions for each phase of the scenario. Additionally, there is a guide for debriefing that includes guided discussion questions for each scenario.

Description of Observation

The researcher arrived at 6:45 a. m. each week for the scheduled observations. After arrival of the entire group of students in the observation room, faculty provided a tour of the simulation suite. Afterwards, the students and faculty reconvened in the observation room, and sat in chairs arranged in a circular fashion. At this point, the researcher was allowed to inform the students of the purpose of the study, and have consent forms signed. Next, the faculty presented a description of the ‘patient’ including past medical history, reason for hospitalization, and current physician orders. Afterwards students were solicited to volunteer for the roles of primary nurse, secondary nurse, and family member. The remaining students served as observers.

The primary nurse having the most direct interaction with the simulated patient, was ultimately responsible for the care of the patient. The secondary nurse served as the primary nurse’s assistant for retrieving medications, performing a treatment or repositioning the patient. For instance, during one of the scenarios as the patient’s condition was rapidly declining, the secondary nurse had to obtain a certain medication because the primary nurse could not leave the patient unattended. The student portraying the family member was given a script for the scenario. This included providing additional information to the primary nurse about the patient’s condition, questioning the nurse’s actions, and becoming anxious about the patient’s condition. The remaining students stayed in the observation room and watched the implementation of the scenario on the big screen television. They were instructed to carefully observe the students’ actions and be prepared to discuss their findings during the debriefing period. Each of the three scenarios lasted approximately 30 minutes.

Once each scenario was completed, students and faculty met in the observation room for a 20-25 minute debriefing session. Faculty started each gathering by asking students to identify their strengths and weaknesses. This involved students in direct roles as well as observers. Some of the students accepted the constructive feedback from peers and students while others appeared frustrated and defensive. When debriefing was over, students were given a 15 minute break to allow the faculty to set-up for the next scenario.

Research Participants

The target population for this study consisted of junior nursing students participating in simulation. A convenience sample of 40 students who engaged in the observed scenarios, completed the Simulation Evaluation Tool (Appendix E), at the end of the day. The selection of this sample of students was based on the researcher's availability for observation of the simulation scenarios. Figures 3.2 and 3.3 illustrates the gender and racial composition of the sample. The sample included 34 females and six males. Racially, the demographic breakdown was 31 Caucasian students, five African-American students, three Hispanic students, and one Asian student. From the 40 students, seventeen of them were selected for observation of caring during simulation because of their role as the primary nurse. The role of primary nurse was selected because it allows for the most direct interaction with the simulated patient. Through purposive sampling, seven students from the observations were selected for individual interviews. This type of sampling strategy was selected to achieve gender and racial diversity. Originally 10 students were solicited for interviews but only seven responded. An appropriate sample size for phenomenology is one to 10 subjects (Creswell, 2013). Criterion for participation included never repeating a nursing course, participating in more than one simulation activity, and portraying at least two different roles during a scenario.

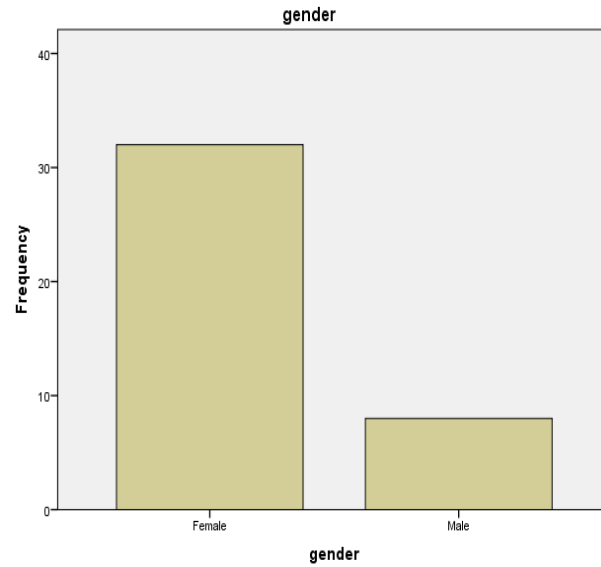


Figure 3.2: Gender of Total Sample (n = 40)

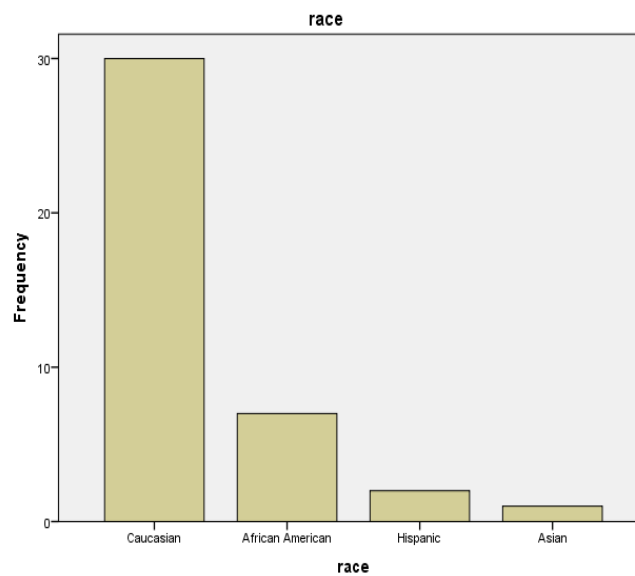


Figure 3.3: Race of Total Sample (n = 40)

Data Collection Methods

Quantitative Instruments

The Caring Behavior Checklist (CBC) was used as the observation protocol to quantify the presence of verbal and nonverbal behaviors (Table 3.3). According to Watson (2009),

McDaniel distinguished between notions of caring for and caring about. The process of caring (which involves caring about) was conceptualized at four levels: 1) acknowledgment of need for care, 2) decision to care (involves commitment on behalf of well-being of others, 3) actions to promote the welfare of others, 4) actualization involving the ultimate result of caring (p. 126).

The CBC includes 12 items that represent caring behaviors. During an observation of a nurse-patient interaction each behavior is dichotomously scored as either present or absent; high scores indicate a high number of behaviors was observed; low scores indicate a few. Reliability and validity were established with a content validity of .80, and inter-rater reliability ranged from .76 to 1.00.

Table 3.3
Observation Protocol: Caring Behavior Checklist

Present = 1, Absent = 0
<i>Verbal Caring Behaviors</i>
Verbally responds to an expressed concern.
Explains procedure prior to initiation.
Verbally validates patient's physical status.
Verbally validates patient's emotional status.
Shares personal observations or feelings (self-disclosing) in response to patient's expression of concern.
Verbally reassures patient during care.
Discusses topics of patients' concern other than current health problems.

Table 3.3 continued

<i>Nonverbal Caring Behaviors</i>
Sits down at bedside.
Touches patient exclusive of procedure.
Sustains eye contact during patient interaction.
Enters patient room without solicitation.
Provides physical comfort measures.

Note: N = 17

The con (Appendix E) was completed by students after participation in the three scenarios on their assigned day. A group of faculty assigned as the nursing program's simulation facilitators developed the survey. The evaluation tool is a 12 item likert-type survey.

Qualitative Data Collection

In qualitative research, interviews are necessary to obtain information about those occurrences that a researcher is unable to observe directly such as feelings, thoughts, and intentions (Merriam, 2009). Johnsons and Christensen (2012) contend that the qualitative interview is a useful data collection method because it provides "in-depth information about the participant's thoughts, beliefs, knowledge, reasoning, motivations, and feelings about a topic" (p. 60). Through qualitative interviewing, "a researcher can enter into the inner world of another person and gain an understanding of that person's perspective" (p. 60).

Types of interviews include highly structured, semistructured, and unstructured (Merriam, 2009). A highly structured interview includes predetermined questions that are usually used to obtain demographic data (age, gender, ethnicity, education, etc.). With a semistructured interview, there is a combination of more and less structured questions to allow "the researcher

to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic" (Merriam, 2009, p. 90). An unstructured interview includes open-ended questions and is used when there is very little known about the phenomenon to ask relevant questions.

The researcher conducted semistructured face-to-face interviews with students who portrayed the role of primary nurse during the observed simulation scenario. The main purpose of the interviews was to attain each students' point of view regarding their experiences with simulation as well as caring in the simulated environment to develop common themes. The researcher developed an interview protocol with six open-ended questions (Table 3.4). Open-ended questions can "reveal how case study participants construct reality and think about situations, not just to provide the answers to the researcher's specific questions and own implicit construction of reality" (Yin, 2012, p. 808). All of the students' interviews were conducted and recorded in the researcher's office for 20 to 30 minutes.

Table 3.4

Interview Protocol
1. Tell me about your experience with simulation.
2. What do you believe are the benefits of simulation?
3. What do you believe are the limitations of simulation?
4. Give me examples of caring in nursing and when you feel cared for.
5. How do you let your patients know you are a caring person?
6. How do you feel about displaying caring behaviors while interacting with the simulated patient?

Note: N = 7

Each interview session was audio-recorded with additional note-taking. Participants received assurance of identity protection through the use of a pseudonym. As mentioned earlier, consent forms were required for each participant.

Member checking is an effective approach for verifying and validating information transcribed by the researcher (Gall et al., 2007; Stake, 1995). After transcription of interviews, each participant was afforded the opportunity to review statements in the report for accuracy and completeness. The demographic questionnaire inquired about students' age, gender, cumulative grade point average, and grade in the previous course, if a nursing course had been repeated, number of simulation activities the student participated in, and the student's role in each simulation activity (Appendix F). Table 3.5 provides the gender, age, race, and cumulative grade point average (GPA) of each participant. All of the participants have never repeated a nursing course while enrolled in the program, participated in two previous simulation activities, and were assigned different roles during simulation.

Table 3.5
Interview Participants' Demographics

Student	Age	Gender	Race	GPA
CK	22	male	Caucasian	3.2
GL	24	female	Asian	3.4
AP	29	female	Caucasian	3.87
AD	28	female	African-American	2.89
MJ	35	female	Hispanic	3.5
AB	23	male	Caucasian	3.25
JW	30	female	African-American	3.0

Note: N = 7

Description of Interview Participants

Interviewee # 1: CK. CK, a 22-year-old Caucasian, expressed that he became interested in nursing while caring for his grandparents in their home. Initially his aspiration was to become

a doctor, yet after a year of pre-medicine courses, he realized that nursing suited him more because of his desire to have a more “hands on” interaction with patients. CK has portrayed the roles of nurse, physician, and observer during simulation. He arrived promptly at 1:00 p. m. to my office for his interview after class. He appeared very relaxed throughout the interview as he provided rather detailed responses to most of the questions.

Interviewee # 2: GL. GL is a 24 year old Asian female. She reported her interest in nursing began as a child because of her “nurturing spirit.” GL believes nursing is her “calling because she has always loved to help people.” Her experience with simulation included the roles of nurse, family member, and observer. GL’s interview was scheduled at 11:30 in the morning in my office. She arrived 10 minutes late because she “lost track of time while studying for an upcoming exam.” GL appeared distracted during the interview as she asked me to repeat several questions.

Interviewee # 3: AP. AP, a 29-year-old Caucasian female, became interested in nursing because she “always liked taking care of people, and I have a son that’s disabled, and I’ve cared for my grandparents before they passed. So it’s kind of always been a calling for me.” Her participation in simulation included the roles of nurse, family member, and observer. AP arrived on time for her interview, which was scheduled at 11:30 a. m. She maintained a calm demeanor throughout the interview as she provided lengthy answers to most of the questions.

Interviewee # 4: AD. AD is a 28-year-old African American female. She credits her family for provoking her interest in nursing as she stated, “I have three aunts that are nurses and a lot of cousins that are nurses and just hearing their stories of when they go to work, and what they have done to help the sick influenced by decision to become a nurse.” AD expressed that the final confirmation was after she took care of her father “when he burned his foot.” She has

participated in the roles of nurse, family member, and observer during simulation. AD arrived punctually to my office at 3:00 p. m. after clinical in the hospital. AD appeared shy throughout the interview, providing short answers to most of the interview questions.

Interviewee # 5: MJ. MJ, a 35 year old Hispanic female, expressed that she became interested in nursing because she “likes to work with people.” She was also attracted to the profession because of diverse opportunities, “Nursing, it provides a lot of different avenues to grow in my field of choice.” MJ has participated in the roles of nurse, family member, and observer during simulation. She arrived on time for her 2:30 p. m. interview after class. She maintained a serious demeanor throughout the interview, often pausing a few seconds before answering questions.

Interviewee # 6: AB. AB, a 23 year old Caucasian male, credits his grandfather and teachers for influencing his interest in nursing. He stated, “I would have to say my grandfather. He’s a doctor, and I just always wanted to be like him. So when I finished high school, I had no idea what I wanted to do, and I asked a few of my teachers, and they all said they thought I would be a good nurse.” AB’s participation in simulation involved the portrayal of nurse, family member, and observer. He arrived promptly to my office at 2:00 p. m. after class. He maintained a laid back demeanor during the interview providing short, specific answers to most of the questions.

Interviewee # 7: JW. JW, a 30-year-old African American female, stated her interest in nursing “has always been something I wanted to do.” She reported that taking care of a sick neighbor confirmed her decision to pursue nursing. Her roles in simulation included nurse, family member, and observer. J. W. arrived on time at 2:15 p. m. after class. She appeared

relaxed and smiled throughout the entire interview, and provided short answers to most of the questions.

Data Analysis

CBC data was entered into SPSS followed by descriptive statistical analysis to determine the frequency of nonverbal and verbal caring behaviors enacted during simulation. Evaluation survey data was also inputted into SPSS, and descriptive analysis was computed to determine the frequency, mean and standard deviation of each item.

Initially interview data was transcribed and compiled into a Microsoft Word file on a laptop computer that is password protected. Transcription is an important initial step in data analysis that allows the researcher to become familiar with the data (Reissman, 1993). Next, Colaizzi's (1978) phenomenological process was employed in analyzing participants' transcripts. The researcher read and reread the transcripts at least four times to obtain an overall feeling for them. Next, the researcher examined participants' responses to interview questions one, two and three (Table 3.4) for significant statements related to research question one. Afterwards, responses to questions four, five, and six were explored for significant statements related to research question two. All of these aforementioned statements were extracted verbatim and entered into a table in Microsoft Word. Then, the researcher formulated meanings for each of the significant statement. The final step involved categorizing the formulated meanings into common themes. All themes were developed to address the research questions.

The initial unit of analysis resulting from the first level of coding consisted of 40 significant statements obtained from interview data related to participants' description of simulation. The second level and third levels of coding consisted of 23 and 14 significant statements concerning participants' perception of caring in nursing, and caring in the simulated

environment. The formulated meanings were reviewed and sorted into themes. Consistent with Colaizzi's method, the researcher allowed each student to review the results to validate findings. Based on the notion that there is not absolute truth with phenomenology, the researcher did not seek a co-reader to validate themes. Figure 3.4 illustrates the process of descriptive phenomenological data analysis created by Colaizzi (1978).

The final step involved triangulation of themes, significant statements, and CBC checklist data, employing the side-by-side comparison method, to establish converging lines of evidence to achieve credibility. Triangulation makes findings as robust as possible "when three (or more) independent sources all point to the same set of events, facts, or interpretations" (Yin, 2009, p. 837).

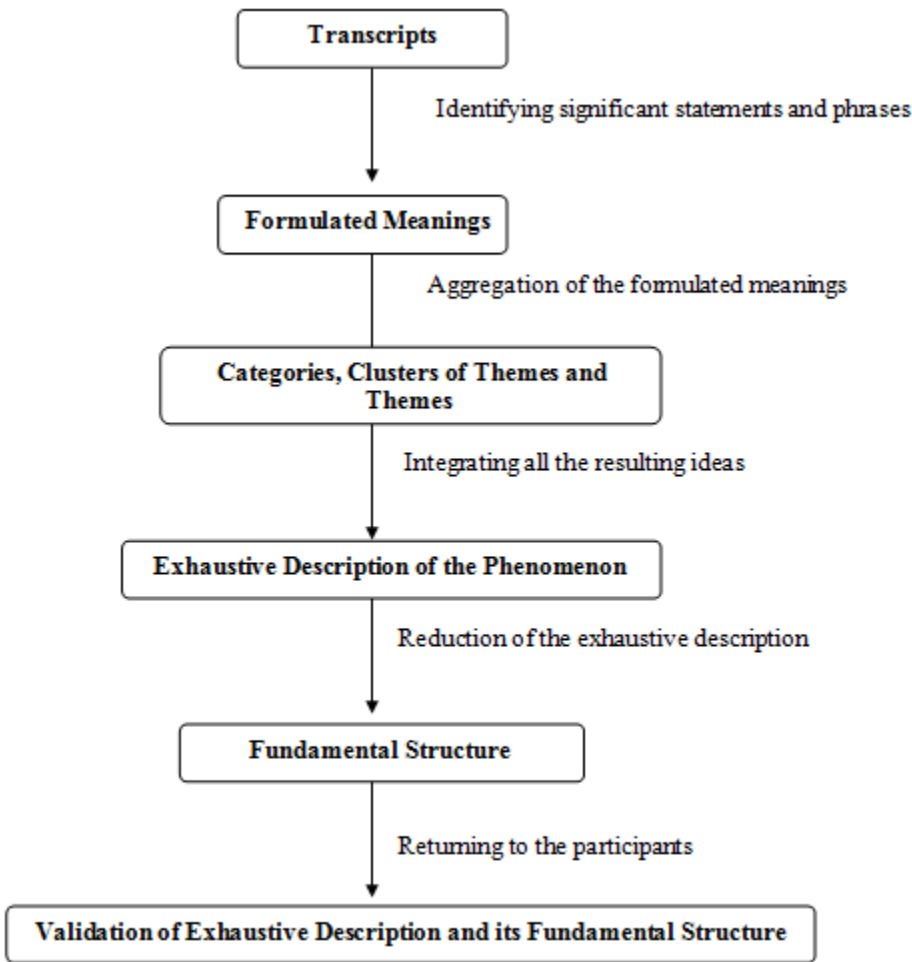


Figure 3.4: Colaizzi's Method of Data Analysis

Researcher's Position

Researchers position themselves in a qualitative study to "convey their background, how it informs their interpretation of the information in a study, and what they have to gain from the study" (Stake, 1995, p. 47). Particularly in a phenomenological study, the process of bracketing is important to attempt to remove any bias that may influence the outcome of the study. The researcher approached this dissertation study with previous experience with simulation as a nurse educator for ten years. Although the researcher's interest in conducting this study stems from her

involvement with the phenomenon of simulation, the researcher took her presuppositions and assumptions about the phenomenon and “bracketed” them apart from her experience in order to gain an understanding of the experience under investigation from the perspectives of the participants.

The researcher’s intended role as a case researcher for this study is that of the teacher. The goal of the researcher is to provide readers with a holistic depiction of the simulation experience. As Stake (1995) contends the responsibilities of the teacher "is to inform, to sophisticate, to assist the increase of competence and maturity, to socialize, and to liberate" (p. 91). Through this research, she hope to convey to readers that simulation scenarios should be designed to help students understand complex information as well as facilitating caring behaviors of students.

Ethical Considerations

A noteworthy consideration is a possible relationship between the researcher and some of the participants. Prior to the selection of participations, the researcher ensured that academic advisees were not selected to participate in the study, and the students are not enrolled in a course that the faculty member currently teaches.

Conclusion

This chapter has covered basic research design for this study. In the next chapter, I will detail the simulation experience and caring, as well as present findings on the essence of the experience as documented from interviews with simulation participants.

CHAPTER 4 RESULTS

Overview of the Study

Using a mixed methods approach, this case study utilized quantitative and qualitative data to gain a holistic understanding of students' perceptions of strengths and limitations of simulation along with their perception and display of caring behaviors. This study utilized a single case study design involving nursing students enrolled in a junior-level nursing course. This type of inquiry seeks to understand a complex issue or concern, and then selects one bounded case to illustrate this issue (Creswell, 2013; Yin, 2009). Chapter 4 provides results from simulation evaluation survey, interviews with students, and the CBC instrument.

Description of Students' Simulation Experience

Research question one, how do third-year nursing students describe the simulation experience, was addressed through quantitative analysis of simulation evaluation survey data, qualitative analysis of interview data, and mixed methods analysis of both.

Simulation Survey Data

Responses to the simulation survey are presented through descriptive statistics. Students used a Likert-type scale to respond to the survey statements. The scale ranged from 1 to 5 (1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree*). These responses are summarized in Table 4.1

Table 4.1
Simulation Evaluation Survey Data

Evaluation Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	M	SD
challenged in thinking and decision making skills	0	0	2 (5%)	12 (30%)	26 (65%)	4.60	.591
increased knowledge of content discussed	0	0	5 (12.5%)	9 (22.5%)	26 (65%)	4.53	.716
knowledgeable faculty	0	2 (5%)	1 (2.5%)	11 (27.5%)	26 (65%)	4.52	.784
valuable debriefing and discussion	0	0	2 (5%)	18 (45%)	20 (50%)	4.45	.597
post discussion enhanced class content	0	0	4 (10%)	15 (37.5%)	21 (52.5%)	4.43	.675
helped to understand roles of other members of the health care team	0	2 (5%)	2 (5%)	17 (42.5%)	19 (47.5%)	4.33	.797
activity was organized	0	2 (5%)	4 (10%)	14 (35%)	20 (50%)	4.30	.853
learned as much by observing as when actively involved in caring for the simulated patient	0	3 (7.5%)	4 (10%)	16 (40%)	17 (42.5%)	4.18	.903
more confident in recognition of changes in patient's condition	0	2 (5%)	5 (12.5%)	17 (42.5%)	16 (40%)	4.17	.844
feel better prepared for real patient care	0	4 (10%)	10 (25%)	11 (27.5%)	15 (37.5%)	3.93	1.023
enjoyed simulation	3 (7.5%)	1 (2.5%)	8 (20%)	10 (25%)	17 (42.5%)	3.85	1.350
pre-simulation assignments prepared for simulation	1 (2.5)	8 (20%)	12 (30%)	11 (27.5)	8 (20%)	3.43	1.107

Note: N = 40

The sample of nursing students (n = 40) responded positively that the simulation activity challenged their thinking and decision making skills (M = 4.60), and increased knowledge of the content discussed (M = 4.53) as well as faculty facilitating the simulation discussion was

knowledgeable in the content area ($M = 4.52$). The respondents also felt that debriefing and discussions were valuable ($M = 4.45$), and post discussion of the simulation scenario added interesting enhancement to the class content ($M = 4.43$). Although the mean score indicates the simulation activity was organized ($M = 4.30$), the mean scores were lower for enjoyed simulation ($M = 3.85$), and pre-simulation assignments prepared for simulation ($M = 3.43$).

Individual Interviews

From the seven interview transcripts, 40 significant statements were extracted that was related to the research question. The underlying meaning was formulated from each statement. This resulted in four themes. Table 4.1 includes significant statements with their formulated meanings.

Table 4.2
Significant Statements of Students' Description of Simulation and Related Formulated Meanings

Significant Statement	Formulated Meaning
1. The text readings on how to prepare and preparing on site is two different stories I feel.	Student was uncertain about the expectations of simulation.
2. It kind of gives you somewhat of a framework but filling in the details that's kind of up to you.	Student understood that pre-simulation assignments are important, but desires more information from faculty to assist with the application of clinical reasoning and judgment skills during the scenario.
3. I guess like the feeling am I going to mess up, you know the unknown. Even though you get the report before the scenario happens, when you step into there, you're like ok, what should I do first.	Student entered the scenario with a sense of uncertainty although a detailed report of the simulation experience was given.

Table 4.2 continued

Significant Statement	Formulated Meaning
<p>4. Up until this semester when we did our simulation, I have not had very good experiences with simulation. It's very focused on negative reinforcement I guess, so it's kind of set up to make the student fail. You're set up to get in there and not have any idea of what you're supposed to do because you've never been in that situation before so a lot of the focus is what you didn't do right, which is fine but then there's no redirection to say okay this is how you should have done it, or what you should be doing.</p>	<p>Student felt a sense of uncertainty after the simulation experience when faculty focused more on incorrect interventions rather than on correct interventions.</p>
<p>5. Sometimes a simulation lab can be not so good of a learning environment. Like a student may have not prepared enough for it or is not fully aware of what is expected of them.</p>	<p>Student felt that lack of student and faculty preparation resulted in an unsuccessful simulation experience.</p>
<p>6. We had already taken our test so we had knowledge of all of the information but I think for myself and for the rest of the group, we kind of walked in not really knowing what is expected of us in the sim lab and what we were going to be doing. So that added a little bit of tension</p>	<p>Student experienced anxiety related to the simulation experience although the information was recently presented in class as well as a test was taken.</p>
<p>7. So when the teacher was asked what are we going to be doing the answer was, "if you read you would have known." I didn't think that was an appropriate answer cause the readings told us what our exam findings would be and how we would do an assessment, but it didn't specifically say you would have X patient, and with this patient you will know to do this, this, and this.</p>	<p>Student believed that faculty should have provided more direction about the simulation experience rather than rely solely on the reading assignments.</p>

Table 4.2 continued

Significant Statement	Formulated Meaning
8. I mean, maybe it was understood by the teacher, but as a student, I really didn't feel the readings and the quizzes prepared me for that. That made me feel inadequate and not prepared where I really was. Just because I had read the readings, I didn't feel that it specifically said...so in that scenario, I didn't feel like the simulation was a 100 percent effective.	Student felt unprepared for the scenario although reading assignments and quiz was completed beforehand.
9. I think a sim lab would have been more effective with a little run through of how "this is what we're going to be doing, we're expecting you guys to perform, just remember X, Y, and Z.	Student would have felt more prepared with further instructions about the simulation experience.
10. I think the stressor of having to critically think at that point in time definitely changes your mindset.	Student experienced stress with having to think about appropriate interventions during a scenario within a limited timeframe.
11. I think the stress really overwhelmed me in the scenarios more than anything.	Student believes increased anxiety felt during simulation was a major barrier.
12. To critically think, I guess that's where it really liked puts the fine line. Can you stay calm and deal with the situation that you're put in?	Student believes the stress experienced during simulation may interfere with the ability to think about the correct intervention.
13. Not knowing what to do makes me a little nervous.	Student experienced stress during simulation when there is inadequate preparation.
14. This semester it was more real-life, it was more set up properly like an actual situation.	Simulation provides exposure to a real-life situation.
15. It's kind of a reenactment of what you would actually do in a hospital but it helps you to decrease the anxiety that you would have in an actual setting. So it's like you work out your kinks.	The realness of the simulation experience prepares the student for the actual clinical experience.
16. Because it puts us in a situation where if we're faced with it in the hospital or real-life setting we'll feel more confident in what we're doing and not like I don't know what I'm doing.	Practice in a real-life setting during simulation helped to increase the student's confidence when caring for actual patients in the hospital.

Table 4.2 continued

Significant Statement	Formulated Meaning
17. It's set up like real-life and you have more access to things. You know like the med room is set up more like a med room. The actual room is set up like a real room, you have more room to actually work around, move around.	Student believes simulation was more beneficial when it truly depicted the hospital setting.
18. I think it definitely puts me in a situation that can be realistic, thinking on my toes, and gathering from the knowledge that I have already learned.	The realness of the simulation experience enhances the student's knowledge.
19. You get to experience a possible real-life scenario. The more you do something, the more practice you have, the better you get at it.	Student believes that repeated practice in the life-like simulation setting helped to prepare for clinical.
20. Being able to perform and do and practice my skills that helps me learn the skills better and maybe have less anxiety about it when I get out there in the real world. I think simulation gives you a complete view or idea or how it should be done.	Simulation provides an opportunity to practice nursing skills in a real-life setting that helps to prepare for clinical.
21. It [simulation] puts us in a situation where if we're faced with it in the hospital or real-life setting we'll feel more confident in what we're doing and not like I don't know what I'm doing.	Student believes the benefit of simulation is the increased confidence experienced with practicing in a real-life setting.
22. So it makes you comfortable so that when you go in to the actual setting it's like second nature. I like that.	Student believes simulations increases the confidence to perform in the actual clinical setting.
23. It was more real-life, it kind of went along with more of what we were learning, and having applied it, and also having taken the test, having gone through clinical already, and then coming back and doing the whole simulation really did make me feel more confident in my decisions.	Student believes simulation enhances knowledge in the clinical setting.
24. Simulation helped me feel more confident because I kind of been tested on it, studied it, seen it in person, and then was able to come in and do it.	Student believes simulation increased confidence to care for patients in the hospital.

Table 4.2 continued

Significant Statement	Formulated Meaning
25. I definitely believe that, it definitely helps us to build up our confidence.	Simulation increased the student's confidence in the ability to care for patients in the clinical setting.
26. This simulation that we did, I felt way more prepared. I felt it was much more effective because more things went right than they did wrong.	Student believes simulation was effective when appropriate nursing interventions are performed.
27. I liked all of the simulations. Each one, we learned something different. It helps you understand what to do in the clinical setting.	Simulation helps to prepare the student for clinical.
28. You get to be a nurse in a life-like scenario.	Simulation affords students the opportunity to practice nursing care in a real-life setting.
29. It's more practice and you have like a safe environment so if you mess up or don't know what you're doing. It's not like when you're in the hospital, if it's a real person whereas here you treat it like a real-life situation but if you mess up you can talk it out and see where you went wrong, and learn from your mistake without it being a real-life situation.	Simulation provides a safe environment to practice as well as reflect on mistakes that were made to improve clinical performance.
30. It's more practice and you have like a safe environment so if you mess up or don't know what you're doing..it's not like when you're in the hospital, if it's a real person whereas here you treat it like a real-life situation but if you mess up you can talk it out and see where you went wrong, and learn from your mistake without it being a real-life situation.	Simulation provides students with a safe environment to correct errors without harming an actual person
31. It's a good practice, having you and another person talk it out and say what are you gonna do and working through the whole process and making sure that you have done everything correctly before you care for a real patient.	Simulation provides the benefit of practicing prior to caring for actual patients.

Table 4.2 continued

Significant Statement	Formulated Meaning
32. It gives you the chance to make mistakes while you're not on stage. So you don't have the patient, and the patient's family, and the doctors and nurses, and everybody watching you while you messing it up, it is, you know, you're not really on stage.	Student appreciates having the opportunity to practice and make errors in front of peers instead of the hospital staff and family members of patients.
33. Simulation prepares us for the clinical setting, to try to prevent errors, to make sure you have a general knowledge or from hurting someone...you can kill someone even if you make a small error.	Student believes simulation provides an opportunity to practice nursing care without harming an actual patient.
34. It made me feel pretty dumb cause I almost killed my patient, but that's okay, I won't do it again.	Student understands that making a mistake in the simulation environment enhances knowledge.
35. Although some of those experiences may have been stressful. I definitely won't forget what to do if I'm in that situation again. Those little things you have to do to make sure mistakes are avoided.	Simulation was a stressful yet valuable experience because it allows students to learn from their mistakes.
36. You're set up to get in there and not have any idea of what you're supposed to do because you've never been in that situation before so a lot of the focus is what you didn't do right, which is fine but then there's no redirection to say okay this is how you should have done it, or what you should be doing.	Student believes that lack of direction from faculty hinders their performance during simulation because expectations are unclear.
37. It's kind of confusing, because although you're kind of prepared, you have to take the quizzes, and read the background information, you've never been a nurse in that type of situation. Therefore, you kind of don't know how to handle things.	Student felt unprepared in an unknown situation in spite preparation beforehand.

Table 4.2 continued

Significant Statement	Formulated Meaning
38. I couldn't wear latex gloves, and they're like just pretend like you have on nonlatex gloves, you know stuff like that. Just the supplies and setup is not totally realistic.	Student believes that too much pretending in the simulation environment diminishes the realness of the situation.
39. I think before that it was space that wasn't really set up like a real situation, like the real room, like a real hospital setting.	When the simulation lab fails to depict the actual hospital setting, students thought of this as a major limitation.
40. I really think that was the biggest limitation that it's not the right set up, and it doesn't really depict the real hospital setting. It makes you just feel like, oh ok, let me just do my best because this is what I would do. In the past it wasn't a real-life situation.	A limitation of simulation is when the set-up doesn't totally portray a real hospital setting.

Integration of Interview Themes and Evaluation Survey Data

Theme 1: Sense of Security. Patient situations depicted in the simulation lab made the students feel “more confident” in their clinical skills if a similar circumstance is “faced in the hospital,” and according to one student, “being able to perform and practice my skills, that helps me learn the skills better and have less anxiety about it when I get out there in the real world.” As students stated, “I definitely won't forget what to do if I'm in that situation again,” and “so it makes you comfortable so that when you go into the actual setting it's like second nature.” Reports of increased confidence provides information that supports the findings from the evaluation survey which revealed 85% ($M = 4.17$) of the students indicated feelings of increased confidence in recognizing changes in a patient's condition after the simulation experience.

Students appreciated the “safe environment” of simulation to “make mistakes without harming a real person.” This is essential to students because “you can kill someone even if you make a small error” in the hospital setting. One student further explained,

It’s more practice and you have like a safe environment, so if you mess up or don’t know what you’re doing...it’s not like when you’re in the hospital, if it’s a real person whereas here you treat it like a real-life situation but if you mess up you can talk it out and see where you went wrong, and learn from your mistake without it being a real-life situation.

Although interviews revealed an appreciation for a safe environment in simulation, the item on the survey related to feeling better prepared for real patient care received less than favorable results compared to the other items (65%, $M = 3.93$).

Students valued the opportunity to discuss strengths and weaknesses during the debriefing period. As one student stated, “I really enjoyed debriefing afterwards, discussing how we could do better, or what things that we didn’t do that would have definitely helped the patient and getting some feedback.” This correlates with the results of the survey item that 95% ($M = 4.45$) of the students believed simulation provided valuable debriefing and discussion.

Theme 2: Reality. Students acknowledged the importance of the simulated environment depicting an actual hospital environment, because they felt more prepared to practice in the clinical setting. Simulation was described as an enjoyable experience because “it felt real,” or “how real-life the situations were,” and it was a “realistic setting.” Students received instant feedback from the simulated patient as they responded to the situation in the scenario by which outcomes of their interventions were apparent. One student described the reality of simulation as “to prepare us for the clinical setting, to try to prevent errors, to make sure you have a general knowledge.” Other significant statements include, “I think it definitely puts me in a situation that can be realistic, thinking on my toes, and gathering from the knowledge that I have already learned,” and “you get to experience a possible real-life scenario. The more you do something

the more practice you have, the better you get at it.” An appreciation for the reality of simulation relates to the survey results showing 95% ($M = 4.60$) of the students were challenged in thinking and decision making skills during simulation.

Theme 3: Stressful event. Students described simulation as stressful because the expectation to “think fast” interfered with their ability to think about the correct intervention. This was evident in the following responses, “I think the stressor of having to critically think at that point in time definitely changes your mindset,” and “I think the stress really overwhelmed me in the scenario more than anything. Can you stay calm and deal with the situation that you’re put in?”

Certain simulation roles were viewed as a source of stress because as students who portrayed the primary nurse stated, “As the primary nurse, for me, I get stage fright in front of everybody and I get nervous and frazzled,” and “I had to give a medication, and you know I was so worried about giving it, I didn’t remember to explain it to my patient before I gave it.” A relationship exists between the students’ feelings of stress and only 67.5% ($M = 3.85$) of students indicating that they enjoyed simulation on the survey.

Theme 4: Ambiguity. Students reported a sense of uncertainty about the expectations of faculty. Although students were required to complete reading assignments and take a quiz prior to the simulation scenario, they did not consider this as adequate preparation. As one student stated, “The text readings on how to prepare and preparing on site is two different stories I feel.” Another student declared,

We had already taken our test so we had knowledge of all of the information but I think for myself and for the rest of the group, we kind of walked in not really knowing what is expected of us in the sim lab and what we were going to be doing.

Receiving insufficient feedback from faculty after the simulation scenario was a source of uncertainty for students because of “no redirection.” One student explained this as “a lot of the focus is on what you didn’t do right, there’s no redirection to say okay this is how you should have done it, or what you should be doing.”

Students reported feeling doubtful about their performance when the arrangement of the simulation laboratory was “not totally realistic.” This was evident in statements such as “when it’s not the right set up and it doesn’t really depict the real hospital setting. It makes you just feel like, oh ok, let me just do my best because this is what I would do,” and “I think the hardest thing for me was just pretend like we have this. You don’t know where everything is at in the room.” The students’ feelings of uncertainty due to feeling unprepared relates to the least favorable item on the survey, which revealed 47.5% ($M = 3.43$) of students believed pre-simulation assignments prepared them for simulation.

Description of Caring and Simulation

Quantitative analysis of the CBC instrument, qualitative analysis of interview data, and mixed methods data analysis of the CBC and interview data addressed Research question 2, how do third-year nursing students perceive and demonstrate caring behaviors while engaged in the simulation experience.

Students’ Display of Caring Behaviors

Using the CBC instrument, participants were observed for the presence or absence of nonverbal and verbal caring behaviors as nursing care was provided for the simulated patient. The presence of nonverbal and verbal caring behaviors are presented through descriptive statistics. Table 4.3 presents this data.

Table 4. 3
Caring Behaviors during Simulation

Nonverbal Caring Behaviors	Frequency
Sits down at bedside	0
Touches patient exclusive of procedure	12
Sustains eye contact during patient interaction	14
Enters patient room without solicitation	17
Provides physical comfort measures	12
Verbal Caring Behaviors	
Responds to an expressed concern	16
Explains procedure prior to initiation	17
Validates patient's physical status	17
Validates patient's emotional status	8
Shares personal observations or feelings (self-disclosing) in response to patient's expression of concern	10
Verbally reassures patient during care	13
Discusses topics of patients' concern other than current health problems	1

Note: N = 17

Nonverbal caring behaviors most frequently displayed were enters patient's room without solicitation ($f = 17$), and sustains eye contact during patient interaction ($f = 14$). Overall nonverbal caring behaviors were more present than absent with the exception of sits down at bedside ($f = 0$). All of the students entered patient's room because they were making morning rounds to check on the patient's status. Most of the students stood close to the bedside and sustained eye contact when the simulator asked a question or voiced a concern. The context and time limitation of the scenarios did not afford students the opportunity to sit down at the bedside.

Verbal caring behaviors most often present were explains procedure prior to initiation ($f = 17$), validates patient's physical response ($f = 17$), and responds to an expressed concern ($f = 16$). The least present behavior was discusses topics of patients' concern other than current health problems ($f = 1$). Students provided the simulator with a brief explanation of all procedures prior to executing them. Evidence of validating patient's physical response was when the simulator moaned, the students inquired about pain, and provided medication to relieve the

pain. Students responded to an expressed concern by the simulator by further investigating the source of the complaint. For example when the simulator stated, “I feel sick to my stomach. Something is not right. What’s the matter with me? I feel so lightheaded,” the students discovered the excess vaginal bleeding after further exploration based on this concern. Essentially, verbal caring behaviors were also more present rather than absent during simulation.

Students’ Perception of Caring in Nursing

From the seven interview transcripts, 23 significant statements were extracted that pertain to research question 2. The underlying meaning of each statement was formulated. This revealed five common themes. Table 4.4 includes significant statements and their formulated meanings.

Table 4.4
Significant Statements of Perceptions of Caring and Related Formulated Meanings

Significant Statement	Formulated Meaning
1. Going beyond the normal call of duty to make your patient feel comfortable and building up that trustful relationship.	Caring involves giving patients extra attention.
2. Make sure they get their medicines, make sure they get their meals and stuff on time. Just be there, be like a support system while they’re in there.	Caring constitutes ensuring that the patient needs are addressed in a timely manner.
3. Just talking with your patient, and letting them know all of your plans and showing empathy into their situation, and not just telling them it will be okay but trying to understand what they’re going through, or just being a human to them and not a robot, do your task and get out of there. Talk with them, treat them like a real person, like a friend of yours.	Caring involves keeping patient informed about their care as well as showing genuine concern for their well-being

Table 4.4 continued

Significant Statement	Formulated Meanng
4. Showing them that I care by spending time with them. Just making sure they have their own personal needs.	Caring involves giving patients attention and tending to their individual needs.
5. This semester, particularly, I had an elderly woman and she didn't have any family there. You could tell she just wanted somebody to talk to and I had set up to where I went in and introduced myself and I could see that she just wanted to talk. I said let me go check on my other patient, to see if everything's stable and I'll come back and talk to her. I went back in there and sat down, she was sitting up in a chair, sat right down in her bed. I sat there and talked to her for like 30 minutes, and you can just tell how much that made a difference in her day.	Caring involves spending extra time with patients beyond the call of duty.
6. For example, the patient I recently had, and luckily and I am bilingual, I was able to speak to her in her native language of Spanish because she didn't understand English very well, and that was important because it let her know that I cared about what her needs were, and being able to listen to her and understand, and explain certain procedures, and whatever needed to be done. I wanted her to feel that her voice was being heard, and that even though there was a language barrier, I was there to help.	Showing genuine concern is important for promoting a caring environment.
7. You're there because you want to be there caring for that patient, not just this is just a job, and I'm here to make money.	Motivation beyond material gains influences an authentic caring attitude.
8. Making sure needs are met, talking, taking an interest in what you have to say.	Caring involves showing a genuine interest in patients by taking the time to communicate with them.
9. I have held hands and prayed with patients.	Caring involves looking beyond the patient's physical needs.

Table 4.4 continued

Significant Statement	Formulated Meaning
10. I try to make sure that I make eye contact with them, that I listen to what they have to say even if it's not just when they're complaining about something, but even when they're just talking to me about they're life outside of the hospital.	Showing interest in the patient outside of their medical condition constitutes caring.
11. Making sure their privacy is intact. I remember I had a younger patient, and I know from my own personal experience that when you're in the hospital, that kind of does get lost. Being able to make sure you keep intact their dignity as much as you possibly can, like giving a bedbath, making sure that whatever you're not bathing at that time is covered and keeping them feeling their own sense of pride, making sure that they know that they are still in control in somewhat of a way, and not just lose complete dignity and pride	Providing comfort is an important characteristic of caring.
12. Building that initial rapport with them that allows you to give proper care.	Establishing a relationship with patients helps to establish a caring environment.
13. To me it's really important to be able to express that ability to show that I'm there to help them, and will do whatever I can. Because that helps people be more receptive to opening up and receiving care.	A sincere caring spirit helps patients to communicate better because trust is established.
14. It's really important to establish that good relationship with a patient and make sure they know that you're there to care for them, and you care. You're not just here for the money.	Displaying a genuine caring attitude with patients fosters a caring environment.
15. Being genuine, showing empathy, or having empathy. Being concerned, being truly concerned. You know sometimes people fake it but to actually be concerned about the patient you know.	Caring must be driven by a sincere motivation.

Table 4.4 continued

Significant Statement	Formulated Meaning
16. To me, when I go in, I introduce myself. I talk to them, I let them know why I'm here and what I'm coming to do. I just try to be personable, and try to make them feel as comfortable as possible.	Making an effort to establish a rapport with patients demonstrates a caring attitude.
17. I always smile. I smile a lot when I'm in the patient's room. I try and talk to them about their family. Especially when I'm doing an assessment. The first thing I'll ask them is where their from, and nine times out of ten, every unit I'm on, they're where I'm from, and then they know people I know, and then we'll start talking, and they don't even realize we're doing an assessment at that point. We're just talking.	Caring involves forming a relationship with patients through verbal and nonverbal communication.
18. When I walk into a patient's room, or meet a patient, I want them to immediately know that I am acknowledging them. I want them to feel like they're important, not just a number, and they're not just another person in that room.	Taking the time to get to know a patient shows a caring spirit.
19. For instance, when you go in to meet someone, you suppose to make them feel comfortable, and explain everything to them so they will know what's going on, and you have to think of them as if they are your family or yourself sitting in that chair.	Providing explanations to patients displays a caring attitude.
20. Coming into a room, acknowledging the patient, smiling, building that initial rapport with them that allows you to give proper care.	Attempting to establish trust with a patient promotes a caring environment.
21. I let them know why I am here and what I am coming to do.	Caring involves effective communication with patients.
22. Keeping promises and doing things in a timely manner, and try not to forget.	Providing timely feedback promotes a caring environment.

Table 4.4 continued

Significant Statement	Formulated Meaning
23. When they say they need something, make sure I actually follow through. If I say that, let me go talk to your nurse, or let me go ask the doctor, I'll go get this for you, or I'll be back in an hour. I actually follow through, I actually do come back in an hour	Keeping promises and follow-through is an important characteristic of caring.

Theme 1: Establish a rapport. Students believed caring involved establishing a rapport with patients. This involves attempting to form a relationship with patients through verbal and nonverbal communication and is reflected in the following student's comment, "This definitely happens during that first introduction. The way you walk in, the way you hold yourself, the way you introduce yourself means a lot." Other students indicate the importance of nonverbal communication, "Coming into a room, acknowledging the patient, smiling, building that initial rapport with them that allows you to give proper care," and "I always smile. I smile a lot when I'm in the patient's room."

Building trust was viewed as a means for establishing a rapport with patients. This happens by informing the patient about their care and the nurses' intentions. As one student stated, "I let them know why I'm here and what I'm coming to do." Another student declared, "To me it's really important to be able to express that ability to show that I'm there to help them, and will do whatever I can. Because that helps people be more receptive to opening up and receiving care."

Theme 2: Being genuine. Students deemed having a genuine attitude with patients fostered a caring environment. For students caring means, "You're there because you want to be there caring for that patient, not this is just a job, and I'm here to make money," and "I want

them to feel like they're important, not just a number, and they're not just another person in the room." A Hispanic student shares her experience with a Spanish-speaking patient that she considers as a display of genuine concern,

The patient I recently had, and luckily I am bilingual. I was able to speak with her in her native language of Spanish because she didn't understand English very well, and that was important because it let her know that I cared about what her needs were, and being able to listen to her and understand, and explain certain procedures, and whatever needed to be done. I wanted her to feel her voice was being heard, and that even though there was a language barrier, I was there to help.

Theme 3: Providing timely feedback. Students considered responding to patients' needs or requests in a timely manner as an important aspect of caring. In describing caring in the context of timely feedback, students stated, "Keeping promises and doing things in a timely manner, and try not to forget," and "when they say they need something, make sure I actually follow through. If I say let me go talk to your nurse, I'll go get this for you, or I'll be back in an hour. I actually follow through, I actually come back in an hour."

Theme 4: Spending quality time. Students deemed spending extra time with patients beyond normal duties as an example of caring. This is reflected in the following response by a student giving extra attention to an elderly patient with no family,

This semester I had an elderly woman and she didn't have any family there. You could tell she just wanted somebody to talk to. I said let me go check on my other patient, to see if everything's stable and I'll come back and talk to her. I went right back in there and sat down. She was sitting up in the chair, so I sat right down in her bed. I sat there and talked to her for like 30 minutes, and you could tell how much that made a difference in her day. Made her so happy just to have somebody that actually cared just to sit there and talk to her, and asked her how she felt.

Responses related to spending quality time also involved addressing the patient's spirituality by "holding hands and praying with patients."

Theme 5: Providing comfort. Students reported that providing physical and emotional comfort demonstrates caring. The key characteristic of comfort identified by the respondents

included: therapeutic touch, providing a calm, relaxing environment, and listening, and providing explanations. The first characteristic was expressed as a need to provide “a gentle therapeutic touch.” The second characteristic was described by a student as, “to me, it’s making sure that your patient is happy and comfortable.” The third characteristic was evident in the following statement, “you suppose to make them feel comfortable, and explain everything to them so they will know what’s going on.”

Students’ Perceptions of Caring in the Simulated Environment

Out of seven interview transcripts, 12 significant statements were extracted. The development of the underlying meaning of each statement resulted in three theme. Table 4.5 includes the significant statements with their formulated meanings.

Table 4.5
Significant Statements of Perceptions of Caring and the Simulated Patient

Significant Statement	Formulated Meaning
1. What I try to do while in there, is try to think of it as a real person because if I don’t practice I don’t know what to do when I go in the hospital.	Student use the simulated patient to practice caring behaviors.
2. Most of the time when I’m in a simulated environment. I try to practice caring. I talk to my patient as if they were a patient. I remember I would say ‘hi Mr, so and so, I am a nursing student, I am here to do such and such. I use that time to really practice that skill of communication.	Student practice caring and communication skills in the simulated environment.
3. I try to think of it as a real person and practice communicating and responding to it just like it’s a real person.	Communication with the simulator is easier when it’s thought of as a real patient.
4. I use this time to practice everything I would do for a patient in the hospital. The more I do it the better I am prepared.	Practicing caring behaviors in the simulated environment facilitates a caring attitude with actual patients.
5. Because it can’t talk back to you, it doesn’t feel as real.	Showing caring behaviors with a simulator is difficult because of its limited responses.

Table 4.5 continued

Significant Statement	Formulated Meaning
6. Even though they say, you know they say you should try to act like the real patient you know I think it's probably because it can't respond as well.	Displaying caring with the simulated patient is difficult because of a lack of reciprocal exchange during communication.
7. You know if you actually tried to talk to it, it's not going to be able to speak back to the equal response.	The simulator lacks the ability to truly communicate which hinders the ability to displaying caring behaviors.
8. I'm a really talkative person when I go into my patient's room so as I'm doing my assessment and whatnot, I'm talking to them trying to establish that relationship, and it definitely makes it more difficult in the simulation experience to do that because I find out a lot of information by talking through as you're doing your assessment and finding out more things, you can ask questions and get answers that you wouldn't get by just going in there and doing your certain things.	Attempting to establish a rapport with a simulated patient is difficult because of the limited conversation.
9. It's difficult, cause it's difficult to have eye contact, and talk to someone who's not responding back. Usually in a real life situation, when you're having a conversation, it's gonna be a two-way thing, and they're gonna tell you something, and you're gonna read they're facial expressions, and you're gonna gauge your response on them, and try to make sure that you're in sync with the conversation.	The lack of nonverbal expressions from the simulated patient makes it difficult to determine if attempts to display caring is effective.
10. So when you're talking to a plastic doll, it's kind of difficult. Its reactions are delayed. The breathing and heart tones give you an idea of what to look for in a real patient but it's never the same.	Display of caring behavior is difficult because the simulator is seen as a just a mannequin.
11. The reactions of the simulated patient is delayed or isn't immediate. The breathing and the heart tones gives you an idea of what to look for in a real patient but it's never the same.	Although the simulated patient talks, breathes, and displays other human-like responses, students are unable to practice caring because they think of it as just a mannequin to practice skills.

Table 4.5 continued

Significant Statement	Formulated Meaning
12. I definitely find it harder to do because it's not as easy to establish a true relationship with them because it doesn't talk to you like a real person.	Lack of response from the mannequin makes caring difficult.

Theme 1: Hard to pretend. Students expressed difficulty with displaying caring behaviors in simulation because of difficulty pretending with the simulated mannequin. This is evident by the following responses, “I definitely find it harder to do because it’s not as easy to establish a true relationship with them,” and “talking to a plastic doll was difficult, yeah it’s totally different when it’s not an actual person”

Theme 2: Lack of reciprocity. Students struggled with exhibiting caring actions with the simulation patient because of “it doesn’t respond like a real person.” The ‘patient’ lacked nonverbal communication such as smiles or grimaces. This was evident by the following responses,

I tried to implement that caring aspect but I wouldn’t say I would do just as much as if it was an actual person. Even though they say, you should try to act like it’s a real patient, it’s hard because it can’t respond as well. You know if you actually tried to talk to it, it’s not going to be able to speak back with the equal response.

I’m a really talkative person when I go into my patient’s room so as I’m doing my assessment and whatnot, I’m talking to them trying to establish that relationship, and it definitely makes it more difficult in the simulation experience to do that because I find out a lot of information by talking through as you’re doing your assessment and finding out more things. You can ask questions and get answers that you wouldn’t get by just going in there and doing your certain things. It definitely is hard to do that with the simulation patient.

It’s difficult, because it’s difficult to have eye contact, and talk to someone who’s not responding back. Usually in a real life situation, when you’re having a conversation, it’s gonna be a two-way thing, and they’re gonna tell you something, and you’re gonna read they’re facial expressions, and you’re gonna gauge your response on them, and try to make sure that you’re in sync with the conversation.

The final student explained, “Because it can’t talk back to you, it doesn’t feel as real, I guess. I don’t think it’s an environment to practice caring behaviors.”

Theme 3: Opportunity to practice caring. Some of the students expressed that simulation was used to prepare for interactions with an actual patient. Evidence of this includes the following statements,

Most of the time when I’m in a simulated environment, I talk to my patient as if they were a patient. I remember I would say, ‘Hi Mr. so and so, I am a nursing student, I am here to do such and such. I use that time to really practice that skill of communication. What I try to do while in there, is try to think of it as a real person. That’s the only way I’m going to get the most out of it. If I think about it as a mannequin, you act like it’s a mannequin, but if you act like it’s an actual person, you’re able to, I guess, show more care. I would say, ‘hi, how are you doing today,’ because if I don’t practice I don’t know what to do when I go into the hospital. I try to stay consistent with my behaviors whether it’s in clinical or in simulation.

Comparison of Students’ Perceptions of Caring and Display of Caring Behaviors in the Simulated Environment

Qualitative and quantitative data were merged, using side-by-side analysis, to determine whether or not results of the interview data and CBC data on five major themes associated with caring converged. According to Creswell (2011), “Merged data analysis strategies involve using analytic techniques for merging the results, assessing whether the results from the two databases are congruent or divergent” (p. 223). Findings from the side-by-side comparison show evidence of convergence between the five major themes, the CBC checklist data, and interview data. This information is presented in Table 4.6.

Table 4.6
Perceptions and Display of Caring Behaviors

Caring Themes	Observation Protocol Data	Significant Interview Statements
Establishing a rapport	NV: Enters patient room without solicitation (f = 17)	When I walk into a patient's room, or meet a patient, I want them to immediately know that I am acknowledging them. I want them to feel like they're not just another person in that room.
	V: Explains procedures (f = 17)	When you go in to meet someone, you suppose to explain everything to them so they will know what's going on, and you have to think of them as they are your family or yourself sitting in that chair.
	V: Reassures patient (f = 13)	I try to talk to them to see what they're thinking about to see what I can do to help them. Building up trust by letting them know if they need anything I'm close by.
Being genuine	NV: Sustains eye contact during interactions (f = 14)	I try to make eye contact with them to make sure they know I'm listening to what they have to say.
	V: Validates physical status (f = 17)	Just talking with your patient, and showing empathy in their situations, and not just telling them it will be okay, but try to understand what they're going through, or just being a human to them and not a robot, not just do your task and get out of there.
Providing timely feedback	V: Responds to an expressed concern (f = 16)	Doing things in a timely manner, if you promise something, do it. Try not to forget and get caught up doing something else. Like if you say you're going to give them a bath in a certain timeframe, do it, don't waste time or forget about it.
Providing comfort	NV: Provides physical comfort measures. (f = 10)	I make sure they get their medicines, make sure they get their meals and stuff on time. Just be there, like a support system while they're in there.
	NV: Touches patient exclusive of procedure (f = 12)	A gentle therapeutic touch on the shoulder...those are all ways a nurse can show that they care.

Summary

This chapter presented the results of quantitative, qualitative, and mixed methods data analysis pertaining to participants' perceptions of simulation and caring. After all of the themes from interview questions were developed, the researcher sought assistance from a colleague with experience in qualitative research to establish credibility. This person was asked to read some of the significant statements along with their formulated meanings and associated themes.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

Summary

Chapter 5 presents the findings, limitations, and conclusions of this study in addition to recommendations for research. The purpose of this mixed methods case study was to gain insight into nursing students' depiction of simulation as well as the display and perceptions of caring behaviors with the simulated patient. The study design included the use of quantitative and qualitative data as a sequential mixed methods approach to answer the following research questions:

1. How do third-year nursing students describe the simulation experience?
2. How do third-year nursing students perceive and demonstrate caring behaviors while engaged in the simulation experience?

A mixed methods approach was chosen to acquire a holistic illustration of students' encounter with simulation, and beliefs about demonstrating caring behaviors with the simulated patient as well as whether or not those behaviors were revealed during a scenario. Mixed methods research enables the use of multiple tools of data collection to provide evidence for studying a research problem (Creswell, 2011).

The study contained 40 participants in which seven participated in face-to-face interviews, and seventeen in the observation of caring behaviors in the simulated environment. Quantitative, qualitative and mixed methods data analysis provided results for both research questions.

Discussion

Students Description of Simulation

A purpose of this study was to gain insight into the use of simulation in a nursing program through findings from the simulation evaluation survey, and descriptions from students

with multiple experiences with simulation. From these findings, students viewed simulation as a positive and negative learning experience. Simulation as a positive learning experience was based on their perception that simulation helps to increase confidence in recognizing changes in their patient's condition, and performing clinical skills while providing care of patient's in the hospital setting. This is consistent with Reilly and Spratt's (2007) notion that increased confidence is a desirable outcome of simulation because it leads to improvement in critical thinking skills in the clinical setting. Another positive aspect of simulation described by students was the provision of a safe environment for making errors without the fear of harming a real patient, which is cited in the literature as one of the main benefits of simulation (Ravert, 2008; Abdo & Ravert, 2006). An additional positive feature of simulation revealed was students believed that debriefing sessions following a simulation exercise was valuable because of the opportunity to discuss strengths and weakness. This finding supports the belief that debriefing offers students a chance for critical self-reflection that fosters the development of clinical reasoning and judgment skills (Drefeurst, 2012).

The literature cites the human-like responses of the high-fidelity simulator and design of scenarios to depict actual situations encountered in the hospital setting as vital components for creating a realistic clinical environment during simulation (Dearmon, et al., 2013; Goodstone, et al., 2013; Park et al., 2012; Thomas & Mackey, 2011; Parsh, 2010; Radhakrishnan, et al., 2007). Yet, this study revealed that students considered other elements of simulation that create a realistic environment such as design of the space to depict the actual hospital setting along with ensuring the availability of all essential supplies. Thus, they felt more prepared taking care of patients in the hospital because practicing in a true-life setting challenged their thinking and decision making skills.

Apart from the findings in the literature, this study revealed simulation was viewed as a negative learning experience because of feelings of stress associated with the responsibilities of primary nurse. Contrariwise to these findings is Harder et al's (2013) notion that students assigned more active roles, such as nurse, found simulation more beneficial.

Furthermore, this study revealed simulation as a negative learning experience because students felt unprepared for the expectations of the scenario irrespective of completing assigned readings and quizzes related to the scenarios in advance. However, Adamson (2009) posits that students must rely on their current readings, class lecture/discussions, and practicing of skills in the laboratory environment in order to perform competently.

Caring and Simulation

Another purpose of this study was to examine students' display and perceptions of caring behaviors in the simulated environment. Although these students did not receive reading assignments or instructions that focused on caring behaviors as in Blum et al's (2012) study, results from the CBC instrument revealed that nonverbal and verbal caring behaviors were exhibited while interacting with the simulated patient. These findings may be relevant to Eggenberger and Keller's (2008) belief that simulation can be successfully integrated into the simulated environment.

Results also revealed convergence between caring themes from interviews, CBC results, and significant interview statements about caring. However, emerging themes from interview data concerning perceptions of caring were not absolutely supportive. While some students used simulation as the opportunity to practice caring, others expressed difficulty displaying caring with the simulator because it doesn't talk back like a real person as well as it lacks facial expressions. This is consistent with Diener and Hobbs' (2012) notion that the development of

genuine feelings for the simulated patient is impossible because caring requires reciprocity that is not developed between the student and simulated patient.

Limitations of the Study

A possible limitation of this study is that it reflects the experiences of students in one nursing program. Inclusion of multiple sites could reveal a variety of results. A second limitation was access to students. In order to optimize their time, most interviews were scheduled before or after class, clinical or a test. This may have affected some of the students' ability to provide more in-depth responses to the interview questions.

Another possible limitation is the use of the CBC instrument alone as an indicator of caring. Although this instrument captures the display of caring behaviors, it does not indicate an ethics of caring inherent in a reciprocal relationship between the carer and cared for. Since caring is a mutual process that is also subject to the recipients feelings about being cared for, the results from the instrument only provides a single point of view regarding the presentation of caring behaviors. An additional possible limitation pertaining to the CBC is capturing the caring behaviors only once. The instrument does not indicate if each behavior was exhibited by the students multiple times during each scenario.

Conclusions

A significant conclusion that emerged from this study was that caring behaviors can be demonstrated during simulation. Therefore, development of a caring curriculum that incorporates simulation combines the benefits of maintaining caring as a core value of nursing with the multiple advantages of simulation that was provided in this study. Nurse educators can teach caring to students through role-modeling of appropriate behavior. This is accomplished as educators strive to maintain open, honest, caring, and supportive relationships with students

(Billings & Halstead). Additionally, a caring curriculum should develop pedagogy that address each domain of learning: cognitive, psychomotor, and affective (Brown (2011).

Nurse educators can use simulation as a tool for students to practice caring behaviors by ensuring that caring is a focus of each experience. Labergue's (2012) Caring Intervention Guide that was provided in chapter one is a useful guide for organizing a caring curriculum. The researcher believes that inclusion of specific behaviors related to simulation can be incorporated into this guide to ensure that caring is an expectation of students.

The results from this study indicate that an observation protocol such as the CBC instrument is a useful tool for the identification of caring behaviors during a simulation scenario. However, nurse educators should share the components of the protocol with students to ensure they are knowledgeable about expectations of essential caring behaviors. Furthermore, students should be allowed to reflect on those behaviors and discuss them during the debriefing sessions.

Results from this study indicate simulation is a positive and negative learning experience. Nursing programs can make the best use of simulation by using a "simulation framework or model so the simulation can be adequately and appropriately designed for the learning that is intended" (Billings & Halstead, 2009, p. 332). A useful guideline for faculty implementing simulation is to ensure that the objectives and nature of simulation is clearly defined for the students (Billings & Halstead, 2009). Another recommendation is setting a time limit for the simulation and debriefing encounter, and ensuring that students stay within that timeframe. Additionally, students should be aware of specific role assignments during simulation. In order to enhance decision-making and problem-solving attempts, faculty should avoid interrupting the simulation encounter. Following a simulation activity, students should be afforded the

opportunity to evaluate each simulation activity to ensure the goals of simulation are matching students' perceptions.

Based on the results from this study, the researcher advocates the use of simulation as preparation for clinical rather than replacement. Nurse educators must determine the appropriate balance between simulated and live patient educational experiences (Billings & Halstead, 2005). While simulation is Deweyian in nature as it provides reflexive practice and experiential learning, it cannot adequately replace the value of exposure to the intricate needs of an actual patient.

The results of this study indicate that faculty development is crucial to ensure the success of simulation. Thus, administrators must provide adequate support and resources to ensure that faculty are properly trained to effectively design and implement the scenarios as well as operate the simulator (Jeffries, 2008).

Implications for Future Research

Further research focusing on caring and simulation is warranted to measure the growth in caring in students over time as they participate in simulation activities. Nurse educators require an understanding of caring in the simulated environment to ensure that the main focus is not competency in decision-making skills. Longitudinal studies of caring in a cohort of students from the first semester to the final semester of the nursing program would be beneficial.

Subsequent mixed methods studies should be conducted to explore the strengths and weaknesses of simulation from the perspectives of students and faculty. Particularly further exploration of the portion of students who indicated that they did not enjoy simulation. Nurse educators should be aware of the benefits and limitations of simulation prior to its incorporation

into the curriculum. Inclusion of faculty in these studies would uncover helpful strategies for implementation as well as barriers that may exist.

An unexplored area in the current study is the transition of caring from the simulated environment to clinical practice. While this study illustrated that caring behaviors were exhibited during simulation, it was limited because of the lack of response from the simulator to confirm acts of caring. Additional studies should examine actual patients' perceptions of caring behaviors in students following practice of those behaviors in the simulated environment. This could be accomplished by utilizing an experimental design comparing caring behaviors of students with actual patients following participation in simulation with students who have not partaken in simulation.

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APPENDIX A
CONSENT FORM FOR NURSING STUDENT

1. **Study Title:** A Mixed Methods Case Study Exploring Simulation and Caring in Nursing Education.

2. **Performance Site:** Our Lady of the Lake College

3. **Investigators:** The following investigators are available for questions about this study,
M-F, 8:00 a.m. - 4:30p.m.
Carla A. Harmon (225) 802-6721

4. **Purpose of the Study:** The purpose of this study is to explore nursing students' viewpoints regarding the advantages and disadvantages of the simulation experience as well as caring behaviors and simulation.

5. **Subject Inclusion:** Individuals between the ages of 18 and 65 who are enrolled in a junior and senior nursing course. Also individuals who are currently teaching a junior or senior nursing course in a baccalaureate program.

6. **Number of subjects:** 40

7. **Study Procedures:** The study will involve observation of students during the simulated exercise followed by individual interview with a sample of those students conducted by the principle investigator.

8. **Benefits:** Subjects will be entered into a drawing to win a \$100 visa gift card. Additionally, the study may yield valuable information to enhance the simulation experience.

9. **Risks:** The only study risk is the inadvertent release of sensitive information found in the interview and focus groups transcripts. However, every effort will be made to maintain the confidentiality of your study records. Pseudonyms will be used for all participants and universities. Files will be kept in secure cabinets to which only the investigator has access.

10. **Right to Refuse:** Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

11. **Privacy:** Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

12. Signatures:

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Dennis Landin, Institutional Review Board,(225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

Subject Signature: _____ Date: _____

Researcher Signature: _____ Date: _____

APPENDIX B

SIMULATION LEARNING PLAN FOR STUDENTS

Outcomes:

The student will:

- 1) Provide individualized patient-centered care.
- 2) Function as an effective member of the health care team.
- 3) Apply best available standards of care for an obstetrical patient.
- 4) Promote safety for patient, self, and others.
- 5) Identify factors that influence quality of care.
- 6) Utilize information technology to support patient care by:

Focus:

Care of the obstetric patient with the following:

- Medical induction/Fetal distress
- Postpartum Hemorrhage/Uterine Atony
- Newborn Care

Student assignments before this clinical:

- 1) Wear full clinical uniform, including ID
- 2) Bring supplies
 - Laptop
 - Stethoscope
 - Skills Bag
- 3) Complete Scenario Reading Assignment **prior to** SETH experience for:
 - SLS Obstetric Scenario 9
 - SLS Obstetric Scenario 18
 - SLS Obstetric Scenario 19
- 4) Complete Pre-Simulation Quizzes **at least one hour prior to** SETH experience for:
 - SLS Obstetric Scenario 9
 - SLS Obstetric Scenario 18
 - SLS Obstetric Scenario 19

APPENDIX C
PRE-SIMULATION QUIZ

1. What is the normal height of the fundus 1 hour after delivery?
 - A. ☐ 3 cm above the umbilicus
 - B. ☐ 5 cm above the umbilicus
 - C. ☐ Even with the umbilicus
 - D. ☐ 2 to 4 cm below the umbilicus
2. How frequently should postpartum assessments occur for the first hour after a vaginal delivery?
 - A. ☐ Every 5 minutes
 - B. ☐ Every 15 minutes
 - C. ☐ Every 30 minutes
 - D. ☐ Once
3. Which position should be used for assessment of the fundus following a vaginal delivery?
 - A. ☐ Left lateral
 - B. ☐ Flat, with the head elevated on a pillow
 - C. ☐ The head of the bed elevated 30 degrees
 - D. ☐ Supine the knees flexed
4. Upon palpation during the immediate postpartum period, the uterus should be:
 - A. ☐ boggy and midline.
 - B. ☐ boggy and deviated to the left.
 - C. ☐ firm and midline.
 - D. ☐ firm and deviated to the right.
5. The immediate postpartum period is also known as the:
 - A. ☐ first stage of labor.
 - B. ☐ second stage of labor.
 - C. ☐ third stage of labor.
 - D. ☐ fourth stage of labor.

6. Blood loss after delivery is estimated by assessing the perineal pads. Less than 2.5 cm of lochia should be documented as:

- A. ☐ scant.
- B. ☐ light.
- C. ☐ moderate.
- D. ☐ heavy.

7. Which nursing intervention is often used to help maintain uterine tone?

- A. ☐ Administering pain medications as ordered
- B. ☐ Assisting the patient with a sitz bath
- C. ☐ Gently massaging the uterine fundus
- D. ☐ Encouraging the patient to ambulate as much as tolerated

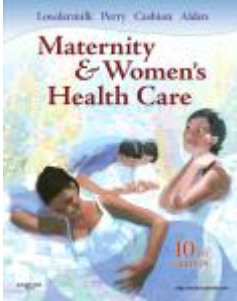
8. Potential signs of maternal complications during the postpartum period include:

- A. ☐ negative Homans sign.
- B. ☐ tachycardia.
- C. ☐ moderate lochia.
- D. ☐ temperature of 99.1 F (37.3 C).

APPENDIX D
PRE-SIMULATION READING ASSIGNMENT

Lowdermilk, et al.

Maternity and Women's Health Care, 10th Edition



Chapter 19: Nursing Care of the Family During Labor and Birth

Fourth Stage of Labor | pp. 472-475

Chapter 20: Postpartum Physiology | pp. 478-484

Chapter 21: Nursing Care of the Family During the Postpartum Period | pp. 486-505

Chapter 29: Endocrine and Metabolic Disorders

Maternal Risks and Complications | pp. 691-693

Chapter 34: Postpartum

Complications | pp. 824-835

APPENDIX E

SIMULATION EVALUATION TOOL

Semester: **Please check the course below in which you participated in simulation this semester.**

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1. Simulation helped me to understand the roles of other members of the health care team.					
2. The pre-simulation assignments prepared me for the simulation.					
3. The simulation activity was organized.					
4. The simulation activity increased my knowledge of the content discussed.					
5. I enjoyed simulation.					
6. I feel that the simulation scenario post discussion added interesting enhancement to the class content.					
7. I am more confident in the recognition of changes in the patient's condition after the clinical simulation scenario.					
8. I feel better prepared for real patient care.					
9. I was challenged in my thinking and decision making skills.					
10. Debriefing and discussions were valuable.					

11. I learned as much from observing peers as I did when I was actively involved in caring for the simulation patient.					
12. The faculty facilitating the simulation discussion was knowledgeable in the content area.					

What did you like most about simulation?

What did you learn during simulation?

What topic/skills would you like to have as a simulation experience?

Comments:

APPENDIX F
DEMOGRAPHIC INFORMATION FORM

Instructions: Please do not write your name on this form. It will be stored separately from any other information that you complete during this study and will not be linked to your responses in any way. The information will allow us to provide an accurate description of the sample.

1. What is your age? _____

2. What is your sex?

Female ☐ Male ☐

3. What is cumulative grade point average? _____

4. Have you repeated a nursing course in this program?

Yes ☐ No ☐

5. What was your grade in the nursing courses last semester?

A ☐ B ☐ C ☐ D ☐

6. Have you participated in simulation in your previous nursing courses?

Yes ☐ No ☐

If yes, how many _____

7. What roles were you assigned to for simulation?

Nurse ☐
Physician ☐
Family member ☐
Observer ☐

Other? _____

APPENDIX G
INSTITUTIONAL REVIEW APPROVAL FORM
FROM OUR LADY OF THE LAKE COLLEGE

Date: September 2, 2014

Study Number: 1425

Study Title: *A Case Study Exploring Simulation as a Pedagogical Method in Nursing Education*

Primary Investigators: Carla A. Harmon, Assistant Professor, PhD Student (Louisiana State University)

Secondary Investigators: Petra Munro Hendry, PhD, Co-Director, Curriculum Theory Project

Approval Designation: Expedited

Primary Reviewer: Michael Dreznick (9/2/2014)

Secondary Reviewer: Susan Steele-Moses (9/2/2014)

Dear Ms. Harmon,

I am pleased to inform you that Michael Dreznick and Susan Steele-Moses of the Our Lady of the Lake College Institutional Review Board have reviewed and approved your proposed study entitled *A Case Study Exploring Simulation as a Pedagogical Method in Nursing Education* conducted by Carla A. Harmon and Petra Munro Hendry.

Thank you for your submission and I would like to wish you success with your study.

Best regards,



Dr. Michael T. Dreznick,

Associate Professor and OLOL College IRB Chair

5414 Brittany Drive, BATON ROUGE, LA 70808 · PHONE (225) 768-1700
· FAX (225) 768-1726

APPENDIX H
INSTITUTIONAL REVIEW BOARD APPROVAL FORM
FROM LOUISIANA STATE UNIVERSITY

ACTION ON EXEMPTION APPROVAL REQUEST



Institutional Review Board
Dr. Dennis Landin, Chair
130 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.5983
irb@lsu.edu | lsu.edu/irb

TO: Carla Harmon
Curriculum and Instruction

FROM: Dennis Landin
Chair, Institutional Review Board

DATE: July 16, 2014

RE: IRB# E8865

TITLE: A Case Study Exploring Simulation as a Pedagogical Method in Nursing Education

New Protocol/Modification/Continuation: New Protocol

Review Date: 7/16/2014

Approved X **Disapproved** _____

Approval Date: 7/16/2014 **Approval Expiration Date:** 7/15/2017

Exemption Category/Paragraph: 1, 2a

Signed Consent Waived?: No

Re-review frequency: (three years unless otherwise stated)

LSU Proposal Number (if applicable): _____

Protocol Matches Scope of Work in Grant proposal: (if applicable) _____

By: Dennis Landin, Chairman *Dennis Landin*

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –
Continuing approval is **CONDITIONAL** on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE:**

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.lsu.edu/irb>*

VITA

The researcher is a native of Louisiana residing in Baton Rouge for 27 years. She has been a registered nurse for 19 years. After receiving her Masters of Science degree in 2004, she began teaching in the undergraduate nursing program at Our Lady of the Lake (LOL) College. Her teaching focuses on complex health alterations of the adult population. During her tenure at LOL College, she has served as chairperson of the Curriculum Committee and Assessment and Evaluation Committee. She currently serves as course and clinical coordinator for a senior-level nursing course that includes simulation. After completing her doctorate, she aspires to continue her teaching career with enhanced knowledge of her role as an educator.