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## **Newly Licensed Registered Nurses' Experiences with Clinical Simulation**

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To the Graduate Council:

I am submitting herewith a dissertation written by Carrie Ann Bailey entitled "Newly Licensed Registered Nurses' Experiences with Clinical Simulation." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Educational Psychology and Research.

Ralph G. Brockett, Major Professor

We have read this dissertation and recommend its acceptance:

Sandy Mixer, John Peters, Mary Ziegler

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

# **Newly Licensed Registered Nurses' Experiences with Clinical Simulation**

A Dissertation Presented for the  
Doctor of Philosophy  
Degree  
The University of Tennessee, Knoxville

Carrie Ann Bailey  
August 2015

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## **DEDICATION**

This scholarly work is dedicated to my mother, Nancy Jo Forsyth,  
because all that I am and all that I will ever be is because of her.  
I could never put into words how much I love and miss her.

Also, my grandmother Sarah Rose Cox  
Whose unconditional love outlasted her memory  
She is my inspiration.

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## **ABSTRACT**

The purpose of this study was to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. This study will use a descriptive qualitative approach with a sample of first year nurses. Kolb's Experiential Learning Model serves as this study's conceptual framework. For the current study, the sample consisted of 10 newly graduated, female nurses with less than one year of experience working in the hospital setting were interviewed. Data analysis included interviews and transcription by the researcher. Finally, participants were asked about themes to increase rigor. Four themes emerged from this research: 1) how simulation is being used, 2) the perceived value of simulation, 3) simulation versus "real life," and 4) simulation and preparation for practice.

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# **Chapter One**

## **Introduction**

The nursing education system is facing increasing pressure to adapt to the requirements of a constantly evolving profession (Hegarty, Walsh, Condon, & Sweeney, 2009). The most significant of these requirements is addressing the nursing shortage. In response to the current nursing shortage, the number of nursing students and nursing programs has grown exponentially and overwhelmed clinical sites (the hospitals and clinics where nursing students are taught the practicalities of patient care). In addition, the shortage has left staff nurses overwhelmed with their patient care workloads, a problem compounded by the need to supervise an increasing number of nursing students on hospital units. Another complicating factor of the nursing shortage is the distressing rise in morbidity and mortality among hospitalized patients throughout the United States (Institute of Medicine, 2000). These rates have heightened concerns about professional competency among nurses. Other factors affecting the nursing profession include globalization, technology proliferation, increasingly educated consumers, managed care challenges, skyrocketing healthcare costs (Heller, Oros, & Durney-Crowley, 2000).

Increasing pressure to provide excellent clinical education experiences, which allow nursing students to practice their didactic learning, amid a profound nursing shortage has led to an increasing demand for the limited clinical sites available, making such sites increasingly harder to obtain (Lasater, 2007). Also affecting the nursing students' ability to obtain a quality clinical experience is the decreasing length of stays for a growing majority of patients, as mandated by the managed health care industry (Lasater, 2007). With patients staying in acute care areas for shorter lengths of time, nursing students have fewer opportunities to practice and gain competency in many of the skills they will be expected to perform on the job. These factors

result in a marked deficit in clinical experiences for baccalaureate nursing students (Hickey, 2009). This deficit may be one reason for the increasing criticism of nursing programs by healthcare employers who feel nursing students are not being adequately prepared for the workforce (Candela & Bowels, 2008).

### **Statement of the Problem**

The lack of clinical sites is making it more challenging to give students quality clinical experiences. Simulation is an alternative that can augment or possibly replace some traditional clinical training. To keep pace with the rapidly changing healthcare workplace, there has been exponential growth in the use of simulation for educating student nurses, newly graduated nurses, and experienced nurses. Additionally, multiple governing bodies and accrediting agencies are urging increased use of simulation in nursing programs to prepare nursing students to provide safe, competent care. However, there is little consistency on how simulation is being used in nursing programs and minimal data about how well simulation prepares a newly licensed registered for professional practice. Furthermore, there is substantial variance in methods of research pertaining to how simulation is conducted or how simulation applies to nurses in their professional role. This qualitative study sought to develop a better understanding of what simulation means to a newly licensed registered nurse and if it helped prepare them for professional practice.

### **Purpose**

The purpose of this study was to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. This study will use a descriptive qualitative approach with a sample of first year nurses.

## Research Questions

The following questions guided this investigation:

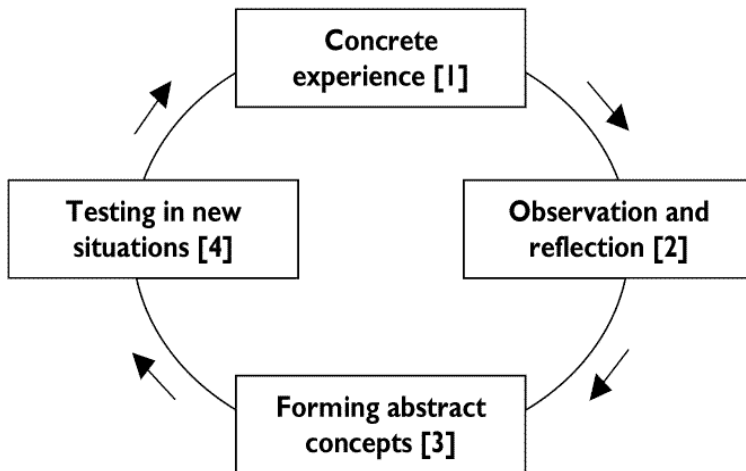
1. How do new newly licensed registered nurses describe their experience with simulation?
2. How do new newly licensed registered nurses describe their experience using simulation and how it prepared them for what they are doing now?

## Conceptual Framework

Kolb's Experiential Learning Model serves as this study's conceptual framework. While many adult learning theories can be applied to the use of simulation in nursing programs, to select the most appropriate model, one must consider simulation's main goal. Instead of reading about or discussing clinical scenarios, clinical simulation allows students to experience the types of situations they will encounter in clinical settings after leaving the guided environment of academia. Simply stated, simulation provides experiential learning. While Rothgeb (2008) noted a variety of educational learning theories support the use of simulation in nursing, he also stated that experiential learning suggests that reflective thought is important in the development of critical thinking and performance, skills crucial for professional nurses. David Kolb's work is considered foundational in experiential learning.

In his model, Kolb (1984) defines learning as "the process whereby knowledge is created through the transformation of experience, [therefore] knowledge results from the combination of grasping and transforming" the experience (p. 41). Kolb goes on to identify the four distinct modes of his Experiential Learning Model, which must be present for learning to occur. These modes are *concrete experience*, which is doing or having an experience; *reflective observation*, which is making the experience meaningful by reflecting on it; *abstract conceptualization*, wherein reflection is conceptualized and incorporated into existing ways of thinking to expand

knowledge; and *active experimentation*, wherein expanded knowledge is then applied to a new experience. Kolb and Fry (1975) describes the experiential learning process as a continuous cycle that progresses in the indicated sequence, no matter which stage a student enters the cycle (Figure 1).



*Figure 1. Kolb's Experiential Learning Cycle (Adapted from Kolb & Frye, 1975)*

Kolb's experiential learning theory can be applied to simulation-based nursing education, offering both a foundation and a process for knowledge acquisition. Experiential learning theory forms the groundwork for the use of simulation as a teaching methodology. Kolb's model conceptualizes learning as a process that integrates concrete experience, reflective observation, abstract conceptualization, and active experimentation. A basic principle of Kolb's theory is that if learning is to be effective, students need to move through each of these four modes described above. These four modes also are easily translated into clinical simulation learning process.

## **Concrete Experience**

Concrete experience generally involves immersing oneself in the performance of a task. During this stage, the learner is usually concentrating on completing the task without reflecting on it. Participating in a simulation scenario allows students to immerse themselves fully in a concrete experience.

## **Reflective Observation**

Post-scenario debriefing acts as a reflective observation opportunity by allowing students to consider their experiences and performance in the simulation scenario. Debriefing also allows faculty to link aspects of the scenario to specific program objectives such as performing specific clinical skills, improving teamwork, enhancing communication, and promoting patient safety.

## **Abstract Conceptualization**

Students then begin an examination of how and what may have influenced their clinical decisions. The debriefing after a scenario offers new ideas or content related to the experience for the students to consider. This process promotes the abstract conceptualization of the students' experience. Debriefing after a simulation also allows faculty to link aspects of the scenario to specific program objectives such as performing specific clinical skills, improving teamwork, enhancing communication, and promoting patient safety.

## **Active Experimentation**

Finally, active experimentation occurs when students have the opportunity to use the new concepts they have learned to make decisions and solve problems in their practice. One of the aims of simulation is for students to have an enhanced awareness of their current practice. Most simulation is designed so that students will leave the experience with information and skills that are useful in similar situations, thereby improving clinical skills.



As with other constructivist models of experiential learning, Kolb's theory faces some criticisms (Fenwick, 2001; Miettinen, 2000). Miettinen (2000) argued that Kolb's concepts are loosely defined and open to various interpretations. He also noted that Kolb's theory blends ideas from various theorists that do not fit logically together. Another criticism is the theory's lack of discussion about the social aspect of experience. The experiential learning model focuses on a single learner's process without addressing how the individual might fit into a social group and what role this group might play. The theory also fails to address how a social group could gain knowledge through common experience (Miettinen, 2000). Despite these criticisms, Kolb's model best exemplifies the experiential learning process of nursing students using simulation.

### **Study Significance**

This study is significant because it responds to the strong and increasing demand for professional licensed nurses to have higher knowledge and skill levels in order to deliver safe and competent care. Ironside, McNeilis, and Ebright (2014) point out that "little is known about either the teaching practices or learning opportunities that best foster students' acquisition of the knowledge and skills needed to provide safe, quality care or the extent to which these opportunities consistently occur in current clinical courses" (p.185). Despite recommendations to utilize simulation and increase the integration of simulation in nursing education, there is a lack of empirical evidence of the impact of simulation on patient outcomes. To fill this knowledge gap, more research is needed to determine which teaching practices and learning opportunities that foster competency in nursing students. Thus, this study is intended to provide a better understanding of simulation's role in preparing the newly licensed registered nurse for professional practice. Additionally, this study should offer insights into nursing students' level of exposure to simulation in their formal education, how simulation is being used these programs,

and its perceived value in preparing students for professional practice. Furthermore, this research also could provide information about which types of simulation are most beneficial for nursing students and/or newly graduated nurses. Access to such information could help nursing educators and hospital administrators develop effective, practical educational programs for student and practicing nurses. This research also may help elucidate the experiences of newly licensed registered nurse in their first year of practice when attrition is the highest (Hayes & Scott, 2007). Moreover, information from the analysis of the participants' in-depth descriptive narratives may serve as a basis for other researchers to conduct studies examining other aspects of simulation's role in the novice nurse's transition into practice.

### **Limitations**

This study explored the experiences of newly licensed registered nurses through self-reflective descriptions of how simulation was used in their formal education. This study has limitations that should be considered before applying the results to simulation use in nursing education. Having all participants female and close in age eliminated the possibility of determining gender or age differences in participant responses. One possible limitation of the study is the fact that participants were not randomly selected, which prevented comparison between different clinical sites. Additionally, the students attended different colleges with varying curriculum. There also is variation in how different colleges use and conduct simulation as well as in the quality of simulation the students receive. In addition, because participants were in the first year of practice and the researcher is a nursing faculty member, the participants may not have been as willing to share their experiences with a colleague. Furthermore, it is possible that participants answered questions according to what they thought the researcher, who is an educator, wanted to hear. The current study used a convenience sample whose members went to

nursing schools that were in a close proximity to one another, study's external validity or generalizability was limited. Nursing schools in other areas may practice simulation differently.

Another possible limitation comes with asking participants to recall past events. Even though it will only be a short period since participants have graduated, the study's trustworthiness depends on their ability to recall their simulation experiences accurately. Finally, as the experience with simulation differs, so does the specialty areas in which these new graduate nurses will be working. For example, a nurse who experienced several pediatric simulation scenarios might get a job working in a cardiac setting. It is the researcher's belief that it will be harder for such participants to see how their simulation experiences affect their practice when they are dealing with a different population.

Because this descriptive study explored perceptions, it may be deemed more subjective than a study with quantifiable outcomes. The researcher was a novice researcher and her interviewing and data analysis skills should be taken into account. Finally, questions or responses may have been misinterpreted by some participants.

### **Definition of Terms**

For the purposes of this study, the following operational definitions will be used.

**Clinical Skills Laboratory.** Referred to as a skills lab, this instructional area is dedicated to teaching, practicing, and evaluating hands-on skills using a variety of interactive models and/simulators. Skills taught include Foley catheters, injections, intravenous catheters, nasogastric tubes, oxygenation therapy, patient repositioning, and wound care.

**Complexity.** Jeffries (2005) explains, "Simulations range from simple to complex. Simple simulations involve decision environments with low-level uncertainty that can be constructed with high or low levels of relevant information. Information at a high level is easily

obtainable and relationships among the key decision variables are highly predictable and very stable. Complex decision environments with high levels of uncertainty can also be constructed with high or low levels of relevant information. An environment with a high level of relevant information has easily obtainable information, but underlying relationships are not easy to identify” (p. 101). For example, a simulated with multiple chronic illnesses may be considered a more complex scenario.

**Debriefing.** Debriefing is a learning activity, occurring after the simulation, that promotes reflection among the learners who were involved in or observing the simulation. It is a conversation that takes place after the simulation occurs to allow students’ to reflect on the context of the simulation to clarify perspectives and assumptions. According to Dreifuerst (2009), debriefing, “the process whereby faculty and students reexamine the clinical encounter, fosters the development of clinical reasoning and judgment skills through reflective learning processes” (p.109). Similarly, Decker et al. (2013) concur, “Reflection is the conscious consideration of the meaning and implication of an action, which includes the assimilation of knowledge, skills, and attitudes with pre-existing knowledge. Reflection can lead to new interpretations by the learner. Reflective thinking does not happen automatically, but it can be taught; it requires time, active involvement in a realistic experience, and guidance by an effective facilitator” (p. s27). The authors go on to explain, “Debriefing is a learner-centered reflective conversation. It is intended to assist learners in examining the meaning and implications of actions taken during a simulated experience” (p. s27).

**Fidelity.** The degree of fidelity in a mannequin refers to how life-like the mannequin is. McCallum (2007) defined fidelity as “the degree in which simulation depicts the real environment and equipment within which the learner is required to perform” (p. 826).

**High Fidelity Mannequin.** High fidelity patient simulators are full-scale, computer-integrated, physiologically responsive mannequins. These mannequins have many features, which may include a chest wall that rises and falls to simulate respiration with audible lung sounds, palpable pulses, and programmable heart and bowel sounds. These mannequins interface with a monitor for real-time numeric and waveform displays of blood pressure, heart rate, electrocardiogram, oxygen saturation, and central venous and pulmonary artery pressures. Faculty members can control mannequins with software run on a laptop or desktop computer (Blum, Borglund, & Parcels, 2010). For example, if a faculty member wants to produce scenario where the patient (mannequin) is having respiratory distress, she can increase the mannequin's heart and breathing rates and make lungs sound abnormal.

**Low Fidelity Mannequin.** Low fidelity mannequins are simple, simulated patients that lack the ability to produce pulses, heart sounds, or lung sounds. These mannequins are designed for demonstration, practice, and skill acquisition for such skills as IV, chest tube, or catheter insertion (Blum, et al., 2010, Rothgeb, 2008).

**Mannequin.** According to Merriam-Webster's (mannequin, n.d.) online collegiate dictionary, a mannequin is "a figure shaped like a human body that is made for making or displaying clothes." However, this term has come to refer to all human shaped figures, whether used in the clothing industry or for training purposes. The terms mannequin and (patient) simulator are used interchangeably in nursing simulation. Mannequins can range from low fidelity to high fidelity.

**Simulation.** Simulation is defined in the nursing literature as a pedagogy using one or more typologies to promote, improve, or validate a participant's progression from novice to expert (Benner, 1984). According to Meakim et al. (2013), a simulated-based learning

experience is “an array of structured activities that represent actual or potential situations in education and practice and allow participants to develop or enhance knowledge, skills, and attitudes or analyze and respond to realistic situations in a simulated environment or through an unfolding case study (Pilche et al., 2012).

**Task Trainers.** Task trainers or part-task trainers are low fidelity static models that represent a specific body part. Task trainers typically are used to help learners gain competency in simple techniques, procedures, or psychomotor skills such as venipuncture or suctioning (Blum, et al., 2010).

### **Summary**

This chapter introduced the study’s problem, background, purpose, conceptual framework, significance, and limitations. In Chapter Two, the literature pertaining to the use of simulation is reviewed, in the context of Kolb’s experiential learning theory. Literature relating to both the advantages and disadvantages of simulation in nursing education and in the preparation of newly licensed registered nurses to enter the workforce also are discussed.

Chapter Three provides a description of the methods used to conduct an exploratory qualitative study of new graduate nurses and their experiences with simulation. Chapter Four presents data collected from the newly graduate nurses who have been in practice less than one year. Finally, Chapter Five discusses the findings and offers recommendations for future research in this area.

## **Chapter Two**

### **Literature Review**

This research began with investigating the use of simulation in nursing education and in the transition into professional practice by reviewing current literature. The researcher searched the CINAHL, ERIC, and MEDLINE databases using the following keywords: Kolb, simulation, transition, and nursing education. In the following sections, background information is explored including defining simulation and discussing its advantages and disadvantages. Kolb's theory was used a way to organize the literature regarding simulation as an experiential learning tool in the nursing discipline.

### **Background**

#### **The Nursing Shortages**

Three important shortages in nursing—in nursing faculty, practicing nurses, and clinical nursing education opportunities—each affect the others. A lack of faculty means that many qualified school applicants are denied admission, which contributes to the shortage of practicing nurses (including those who could eventually become nursing educators), which contributes to the scarcity of clinical education opportunities. Studies support that fact that each of these shortages affects the others. The lack of qualified faculty is making it increasingly difficult for schools to fill both classroom and clinical positions (Berlin & Sechrist, 2002). Even for institutions willing and able to hire new faculty, it is becoming increasingly difficult to fill positions in both the classroom and clinical setting because of this shortage (Berlin & Sechrist, 2002). The faculty shortage also requires nursing schools to turn down highly qualified applicants (Aiken, Cheung, & Olds, 2009; Allen, 2008). According to a 2005 national survey, 33,000 qualified applicants were refused nursing program admission (Berlin, Wilsey, &

Bednash, 2005). Of the schools surveyed, 76.1% reported limiting admissions due to faculty shortages (Berlin, Wilsey & Bednash, 2005). Limited admissions results in fewer graduates and a continuation of the shortage of practicing nurses, which is projected to worsen (Yordy, 2006). Medley and Horne (2005) concurred that nursing staff shortages contribute to the shortage of clinical education sites, a situation exacerbated by shorter patient stays and higher patient acuity. The shortage of nursing faculty also directly affects the clinical experience available for nursing students. Not only is there a lack of clinical sites because of the increasing demands to use them, but there is also a lack of nursing faculty to staff these clinical sites and programs. Another factor contributing to the shortage cycle is the aging of the American population. By the year 2020, it is projected that 20 percent of the general population will be aged 65 years and older. Treating an aging population affects healthcare priorities and the practice of nursing as well as complicating the problem of an already aging nursing faculty (Heller et al., 2000).

Clearly several strategies will need to be tested and employed to address each of these shortages. One possible strategy is finding other ways to help supply the clinical experiences students need to prepare for effective practice. This study addresses the efficacy of simulation as a means to help prepare nurses to practice professionally.

### **The Importance of Clinical Experience**

The development of nursing competency requires practice in the clinical environment to acquire necessary skills (Larew, Lessans, Foster, & Covington, 2006). Similarly, Wilford and Doyle (2006) noted learning that occurs in a realistic environment related to work is retained and reproduced. Failure to replace the authentic clinical experience can result in a lack of knowledge regarding certain patient conditions, technical skills, and clinical knowledge, thus endangering patient safety (Alinier, Hunt, Gordon, & Harwood, 2006). In addition, today's education



consumers, including nursing students, have higher expectations than ever before that they will leave school with skills that can be transferred to the workplace; they expect a hands-on, learner centered approach to education (Cannon-Diehl, 2009). Given the apparent lack of clinical education sites for undergraduate students, nursing educators are being challenged to replace the clinical experience by other means (Wotton, Davis, Button, & Kelton, 2010). One solution for addressing the related shortages in nurses, nurse educators, and clinical sites is using a simulated clinical learning environment.

### **Defining Simulation**

Nursing and medical literature offer several definitions of simulation. In the broadest sense, Sleeper and Thompson (2008) defined simulation as “creating a close representation of real life human events” (p. 1). Jeffries (2005) defined simulation as activities that mimic the reality of the clinical environment and are designed to demonstrate procedures, decision making, and critical thinking. Gaba (2004) defined it as a “ technique, not a technology, to replace or amplify real experiences with guided experiences, often immersive in nature, that evoke or replicate substantial aspects of the real world in a fully interactive fashion” (p. i2). According to Rauen (2004), simulation serves as a bridge between theory and practice. Weaver (2011) stated that simulation “mirrors the clinical setting and mimics patients’ responses in a controlled setting, without the risk of students harming patients (p. 37).

According to Jeffries (2007), simulation design should include five features to achieve the desired learning results: specific learning objectives, an appropriate level of fidelity, problem solving, student support, and a debriefing using reflective thinking. Additionally, other researchers recognize that learning can occur during different stages of simulation, especially when strategies are used that enable conceptual knowledge to develop contextually in settings

reflecting reality (Herrington & Herrington, 2006). As a result, simulation has been described as a strategy that "... enhances students' cognitive, associative, and autonomous skills" (Wotton, et al., 2010, p. 638).

Currently, nursing education uses a variety of simulation types including case studies, scenarios, role playing, task trainers, and low to high fidelity mannequins (fidelity refers to the simulation's degree of realism) task trainers, virtual reality devices, interactive computer simulations, and standardized patients. The variations in delivery methods and fidelity and have led one researcher to categorize simulation as "multimedia." In other words, the term simulation encompasses a multitude of different technologies and modalities (Schiavenato, 2009).

### **Simulation Advantages**

The literature is replete with myriad documented advantages of using simulation in nursing education. Fletcher (2005) noted that simulation's ability to mimic realistically the clinical environment gives students consistent and comparable experiences, increases patient safety and minimizes ethical concerns, promotes active learning, allows immediate error recognition and correction, promotes active learning and simulates specific and sometimes unique patient scenarios that are rarely experienced in the clinical setting. During simulation, students are exposed to realistic situations, based in a number of different settings. Student then have to combine their assessment and clinical decision-making skills with other attributes—including communication, teamwork, and management—to care for their simulated patient (Wilford & Doyle, 2006). Furthermore, the experience is similar and comparable for all students, unlike the clinical experience. Billings and Halstead (2005) showed that simulation allows students to apply critical thinking skills, enhances content retention, increases experience, promotes creativity, and improves decision-making skills. Similarly, Medley and Horne (2005)

noted that simulation technology allows undergraduate students gain and improve skills in a safe, non-threatening, experiential environment.

In addition, several researchers have recognized that collaboration, teamwork, and communication can be simulated (Dillon, Noble, & Kaplan, 2009; Ganley & Linnard-Palmer, 2012; Sears, Goldsworthy, & Goodman, 2010; Medley & Horne, 2005; Messmer, 2008; Henneman, & Cunningham, 2005; Sleeper & Thompson, 2008). Rothgeb (2008) described simulation as a tool that allows students to work as part of a team, collaborate with others, solve problems, make decisions, and use critical thinking in a safe environment. Yaeger et al. (2004) noted that the use of simulation can lead to improved cognitive, technical, and behavior skills; increased confidence; shorter time required to reach competency; enhanced patient care; and higher quality education and training.

### **Protecting Patient Safety**

Simulation is an especially important teaching tool especially given the possible devastating consequences of making an error with an actual patient in a complex healthcare environment (Hyland & Hawkins, 2009). Researchers emphasize that supervised nursing simulation experiences allow students to practice patient care in a moderately stressful environment, yet decrease the fears of failure associated with caring for live patients (McCallum, 2007). Brown (2008) reported that educators could use simulation to mimic events that, while rare, have high safety and liability risks. When students are able to manage such scenarios successfully, their confidence and competence increase (Brown, 2008).

### **Organizational Support for Simulation**

Several professional organizations support the use of simulation in nursing education. The Institute of Medicine (2000) contended that, in addition to preparing nursing students to be

more competent in the healthcare setting, simulation could lead to better patient outcomes, thereby increasing patient safety. The National League of Nursing and the Institute of Medicine encourage the use of simulation in nursing programs as a way to prepare practitioners who are more competent (Jeffries & Rizzolo, 2006). The Agency for Healthcare Research and Quality supports research that focuses on teaching and learning strategies using simulation (Cannon-Diehl, 2009).

### **Increasing Use of Simulation**

One possible advantage of simulation in nursing education is its ability to replace actual clinical time. In the U. S., the use of simulation in nursing education is increasing exponentially and, in some instances, is replacing actual clinical time. Sixteen out of 44 state Boards of Nursing have approved using some simulation in place of clinical hours, while 17 more states are working on using simulation in place of clinical hours in the future (Nehring, 2008). Cannon-Diehl (2009) reported, “Advancing technology is creating a dependence on simulation as a teaching and learning strategy” (p. 128).

### **Simulation Disadvantages**

Although there are many documented advantages of using simulation in nursing education, the practice also has disadvantages. First, there is a shortage of literature addressing how to prepare faculty to become skilled in teaching through simulation (Anderson, Bond, Holmes, & Cason, 2012; Medley & Horne, 2005). The amount of time required to create, set up, implement, and take down meaningful simulation experiences can be daunting. Billings and Halstead (2005) assert that simulation planning, preparation, and set up time requires many faculty hours. In addition, only a limited number of students can be involved in a simulation scenario (Brown, 2008). Bremner, Aduddell, Brennett, and VanGeest (2006) identify barriers to

use of simulation: the amount of required set-up time, the need to learn how to use the technology, and budgetary limitations. Lack of space, common in many nursing buildings, is another limitation (Rothgeb, 2008). According to Wilford and Doyle (2006), learners need to interact with the simulator as if it were a real patient in order for simulation to be successful. Unfortunately, not all simulated environments or simulated patients are realistic.

### **Review of Simulation Use in Nursing Education Using Kolb's Model**

In addition to serving as this study's conceptual framework, Kolb's Experiential Learning Model was used to categorize the vast literature pertaining to simulation. In his model, Kolb (1984) defined learning as "the process whereby knowledge is created through the transformation of experience, [therefore] knowledge results from the combination of grasping and transforming" the experience (p. 41). Kolb goes on to identify the four distinct modes that must be present for learning to occur. These modes are concrete experience, which is doing or having an experience; reflective observation or perception, which is making the experience meaningful by reflecting on it; abstract conceptualization or cognition, wherein reflection is conceptualized and incorporated into existing ways of thinking to expand knowledge; and active experimentation or behavior, wherein expanded knowledge is then applied to a new experience.

#### **Concrete Experience**

In experiential learning, individuals perceive "new information through experiencing the concrete, tangible, felt qualities of the world, relying on our senses and immersing ourselves in concrete reality" (Kolb, Boyatzis, & Mainemelis, 2001, p. 4). According to Zigmont, Kappus, and Sudikoff (2011), "Simulations provide concrete experiences during which learners can identify knowledge gaps upon which they can reflect". According to Childs and Seeples (2006), the majority of nursing studies involving simulation have focused on "the measurement

outcomes of self-confidence, knowledge attainment, satisfaction, or skill acquisition” (p.155) that come from concrete experience. An example of simulation creating concrete experiences would be students using a task trainer practice inserting a needle to start an intravenous line. Likewise, most early simulation use focused on teaching competency testing and skills, centered primarily on learning psychomotor skills, (Larew et al., 2006). This early use of simulation simply reinforced skills educators already were teaching. Because the use of simulation soon began to include practicing skills in specialty areas, simulation developed into a specialty area of nursing education (Larew et al., 2006).

When reviewing simulation-related nursing literature, several studies were found that focused on the concrete experience of simulation. For example, some addressed competence in basic knowledge and task/technical skills acquisition (Alinier et al., 2006; Hoffman, O’Donnell, & Kim, 2007; Kuiper, Heinrich, Matthias, Graham, & Bell-Kotwall, 2008; Scherer, Bruce, & Runkawatt, 2007; Nagle, McHale, Alexander, & French, 2009). This use of basic simulation as a teaching methodology, served to reinforce skills nurses needed to be competent practitioners. Accordingly, Lapkin, Levett-Jones, Bellchambers, and Fernandez (2010) found statistically significant post-simulation improvements in basic skill development and performance. Similarly, a study conducted by Bremner et al. (2006) found that, following a human patient simulation session, nursing students realized the experience helped them learn heart and lung sounds, as well as some hands-on skills related to assessing these sounds.

Several studies simulated experiences of caring for new mothers and their infants. After demonstrating infant care, self-care, breast- and bottle-feeding, and infant safety on simulated patients, students were debriefed by faculty. The students then went to the clinical unit and performed the same skills on actual patients (Wagner, Bear, & Sander, 2009). Smith-Stoner

(2009) also found that using a high fidelity simulation lab can help students learn to provide pre- and post-partum care.

Some studies showed simulation as an effective way to teach family-centered care—a growing focus of modern healthcare—that involves not only the patient, but the patient’s family as well (Eggenberger & Regan, 2010). In addition, simulation also has been used to promote collaborative and interdisciplinary learning, skills necessary for working on a multidisciplinary team as often required in the modern healthcare environment (Reese, Jeffries, & Engum, 2010). In his literature review, McCallum (2007) found that student nurses want more simulation education as a way to learn clinical skills and are motivated to participate in the type of experiential learning that simulation promotes. In a comparison between students receiving a standard review of a skill and those who had the standard review plus skill simulation, one researcher found increased competence and skill retention in the group who had simulation experience. However, the study did not address that fact that this increased competence could have been a result of the simulation experience (Ackermann, 2009). Simply stated, could the one group have benefited from the simulation experience the same as it would have from just additional practice? It is apparent in the literature that simulation is a useful tool for teaching nurses with all levels of experience and as a diagnostic method to identify weaknesses in nursing students’ performance (Hammond, Bermann, Chen, & Kushins, 2002).

Pike and O’Donnell (2010) found that learner communication self-efficacy increased after simulations they interacted with role players who acted as patients or family. Lundberg (2008) noted that for some students it is tedious learning skills such as starting an intravenous line or communicating with a patient to get a health history. Thus, it is important that nurse educators ensure students are adequately prepared with the prerequisite knowledge and placed in

situations where they are most likely to succeed early on (Lundberg, 2008). Accordingly, the confidence-building principles used in nursing education simulation strategies, which include immediate feedback, peer modeling, and opportunities to practice newly acquired skills, fit well with the goal of ensuring that nursing students are adequately prepared for their profession (Lundberg, 2008). On a cautionary note, Fero, Witsberger, Wesmiller, Zullo, and Hoffman (2010) compared the relationship between students' simulation performance and critical thinking skills, and found that students had difficulty meeting expectations when tested in simulated clinical scenarios. Another study conducted by Brown and Chronister (2009), while supporting the idea that teaching with high fidelity nursing simulation increased self-confidence, determined that it did not lead to improved critical thinking skills. Their research points to a potential gap in the nursing literature: understanding how the use of simulation in nursing education is transferring into the workplace for new graduates. The nursing simulation literature in this section is primarily dealing with the concrete experiences that are essential for educating nursing students. The studies in this section looked at clinical skill acquisition and communication skills, as well as learner self-efficacy.

### **Reflective Observation**

Once an experience occurs, the learner find meaning by reflecting on the experience from different viewpoints. Fountain and Alfred (2009) noted that small group activities involving listening, comparing, networking, and interacting with others to promote discussion and facilitate problem solving result in reflective observation.

### **Debriefing**

In simulation, reflective observation could occur during the debriefing process where faculty and students review the clinical encounter and use reflection to foster clinical judgment



(Dreifuerst, 2009). Ackermann (2009) also recognized that hands-on learning, active participation, and reflection could provide a powerful learning environment for nursing students. Furthermore, debriefing fosters learning from each other, and learning in teams allows students to be more flexible in their thinking and appreciative of others' perspectives.

During a simulation experience, the quality of learning has been shown to be just as great for the observer as for active participants (Lasater, 2007). According to Neill and Wotton (2011), debriefing after a simulation experience promotes student interaction and the use of prior knowledge. Another study found that debriefing could allow the development and consolidation of mental representations (Wotton et al., 2010). Debriefing is a time when rationales for clinical decision making can be discussed and suggestions for alternative decisions and actions can be made (Medley & Horne, 2005). Debriefing is essential to simulation because it supports learner-centered discussion and meaningful debriefing can lead to the development of clinical judgment (Mariani, Cantrell, Meakim, Prieto, & Dreifuerst, 2013). In one study, students perceived debriefing and feedback as the most important components of simulation (Reese et al., 2010). In another study, researchers found a difference in clinical judgment between students who received structured debriefing and those who did not. Thus, reflection is a central tenet to the experiential learning process, allowing facilitators and students to reexamine the way the students reacted to a particular situation (Dreifuerst, 2009).

A study conducted by Darcy Mahoney, Hancock, Iorianni-Cimbak, and Curley (2012) showed how pediatric scenarios (developed by faculty who were subject matter experts) were revised based on the post-debriefing feedback from the students who had participated in the scenario. This study served as an example of how a concrete experience can lead to reflective observation, then, changes to scenarios can be made based on this reflection and feedback.

However, this study did not explore how this cycle of scenario reflection and modification helps new graduate nurses transition into professional practice.

Neill and Wotton (2011) asserted that “debriefing is an active interaction between the educator and the students, whereby the reexamination of the students’ nursing interactions related to process, outcome, and application of knowledge and skills to clinical practice occur” (p. e163). Rudolph, Simon, Rivard, Dufresne, and Raemer (2007) describe the debriefing process as one in which the students are encouraged to develop more knowledge, insight, and mental representations to guide future practice.

### **Self-confidence**

Several researchers concluded that the use of simulation increased self-confidence (Bearnson & Wiker, 2005; Cioffi, 2001; Sinclair & Ferguson, 2009). However, these studies were focused on confidence building, self-efficacy, and the social aspect of learning, as they relate to enhanced skills and content mastery. Several other studies focused on student self-confidence when simulating scenarios in different specialty areas. These areas included obstetrics (Schoening, Sittner, & Todd, 2006) post-operative patients (Jeffries & Rizzolo, 2006), and preparing nursing student for their first clinical experiences (Bremner et al., 2008).

Unfortunately, these studies mentioned did not identify factors that lead to these outcomes.

Smith and Roehrs (2009) identified five factors that correlated with student self-confidence in learning when using simulation as a teaching modality: clear objectives (when developing the simulation scenario), support, problem solving, guided reflection, and fidelity.

Several studies focused on student confidence and self-efficacy after simulation experiences (Klein & Lee, 2006; Lundberg, 2008; Goldenberg, Andrusyszyn, & Iwasiw, 2005; Hunter & Ravert, 2010). Self-confidence provides motivation, which is a key determinant of persisting

through difficult learning activities (Klein & Lee, 2006). According to Lundberg (2008), immediate feedback, peer modeling, and opportunities to practice skills are simulation strategies that can increase a students' confidence. One study presented a correlation between the use of simulation in patient education and increased self-efficacy, which is a student's perception of how well learning outcomes were achieved during a simulation (Goldenberg et al., 2005; Hunter & Ravert, 2010).

### **Satisfaction**

Other studies have focused on student satisfaction with the simulation experience (Bremner et al., 2006; Schoening et al., 2006). Several concentrated on student satisfaction after simulating different specialty areas including critical care (Feingold, Calaluce, & Kallen, 2004; Henneman & Cunningham, 2005), obstetrics (Robertson, 2006), and surgical scenarios (Bearnson & Wiker, 2005). While these studies correlated satisfaction with increased performance, but there was no emphasis placed on the type of learning that occurred during the simulation. The simulation studies associated with reflective observation focused on the debriefing aspect of simulation, the quality of learning for the observer of a scenario, and student self-confidence after and satisfaction with and the simulation experience.

### **Abstract Conceptualization**

Kolb et al. (2001) asserted that abstract conceptualization occurs when students' "perceive, grasp, or take hold of new information through symbolic representation or abstract conceptualization—thinking about, analyzing, or systematically planning, rather than using sensation as a guide" (p. 4). According to Yaeger et al. (2004), "the opportunity to assess and reassess performance over the course of a day with multiple scenarios give trainees a chance to see improvement in their technical, behavioral, and cognitive skills, thereby improving their

overall confidence level” (p. 328). This is how a learner comes to a logical conclusion about an experiential learning scenario and develops theories surrounding the concepts learned. In Kolb’s model, this process is referred as abstract conceptualization. As an example, Wolf (2008) conducted a study that found patients in the emergency department (ED) were being under-triaged or inappropriately assessed. While the nurses who participated in simulated scenarios representing typical ED patients had improvements in their clinical decision making skills, the greatest improvements were seen in new nurses. Similarly, Cato, Lasater, and Peebles (2009) conducted a study where students engaged in reflective journaling. Using a clinical judgment rubric, they concluded that the majority of nursing students “show an ability to think deeply about situations that 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). This study introduced the concept of helping nursing students by integrating simulation into the clinical setting, which increased student confidence and patient satisfaction. McCaughey and Traynor (2010) conducted a descriptive study exploring the effects of medium to high fidelity simulation experiences on undergraduate students’ nursing practice. They found that the participants’ perception led them to believe that their high fidelity simulation experiences enhanced the safety of their practice.

A study conducted by Myrick (2002) sought to generate data that would lead to understand how the preceptorship experience develops and promotes the critical thinking ability of baccalaureate nurses. The researcher found that critical thinking was brought about by preceptors’ incidental and purposeful actions. The simulation research in this section looks at how simulation can begin to improve clinical decision making and promote critical thinking. The

studies looked at students' perceptions and thoughts but did not look at the actions of the participants, differentiating it from the next section.

### **Active Experimentation**

Once abstract conceptualization occurs, learners add their own thoughts and ideas to the abstract conceptualizations, as well as other relevant theoretical constructs. This process guides student's decisions and actions that become their new concrete experiences, beginning a new cycle in the experiential learning process. Kolb (1981) said AE "... involves testing theories, carrying out plans, and influencing people and events through activity" (Kolb, 1981). To recap the entire cycle, "Immediate or concrete experiences are the basis for observations and reflections. These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences" (Kolb et al., 2001, p. 3).

In nursing, AE would be considered critical thinking, clinical judgment, or clinical reasoning. Critical thinking is referred to as a cognitive habit necessary for safe and competent nursing practice (Prion, 2008). Jeffries and Rizzolo (2006) recognized that critical thinking is a student outcome that could be affected by simulation in nursing education. A study conducted by Sullivan-Mann, Perron, and Fellner (2009) showed a positive correlation between increased simulation experiences and increased critical thinking. According to Rhodes and Curran (2005), for nurses in a clinical setting, critical thinking is a part of clinical reasoning, which is needed in order to have sound clinical judgment. Although the critical thinking and clinical judgment are used comparably, the literature indicates "clinical judgment" is the preferred term for nursing practice rather than "critical thinking" because it distinguishes nurses from other technical roles (Prion, 2008).

## **Clinical Judgment and Clinical Reasoning**

According to Cato et al. (2009), one of the goals of simulation is to help the student develop clinical judgment or reasoning. These terms are used interchangeably in the literature because judgment informs reasoning and reasoning informs judgment (Facione & Facione, 2008). Tanner (2006) defined clinical judgment as “an interpretation or conclusion about a patient’s needs, concerns or health problems, and/or the decision to take action (or not), to use modified standard approaches, or to improvise new ones as deemed appropriate by the patient’s response” (p. 204). Benner, Tanner, and Chelsea (1996) defined clinical judgment as “the ways in which nurses come to understand the problems, issues, or concerns of clients/patients, to attend to salient information and to respond in concerned and involved ways” (p. 2). Lasater (2007) developed a rubric, The Lasater Clinical judgment Rubric (LCJR), based on the four phases of Tanner’s (2006) Clinical Judgment Model: noticing, interpreting, responding, and reflecting. The LCJR is designed to measure changes in a student’s clinical judgment when participating in high fidelity simulations (Lasater, 2007).

Scheffer and Rubenfeld (2000) defined clinical reasoning as a process that is dependent on critical thinking. According to Banning (2008), clinical reasoning is essential for competent nursing practice. Lapkin et al. (2010) reported that clinical reasoning enables a nurse to build on previous knowledge and experience in order to respond appropriately to new or unfamiliar situations.

The development of expert reasoning has been identified as a potential outcome of the use of simulation with novice nursing students (Bremner et al., 2006). In a review of literature pertaining to simulation and clinical reasoning, Lapkin et al. (2010) found no conclusive results showing simulation with high fidelity simulation mannequins was effective in teaching clinical

reasoning. However, no other studies substantiated this claim. Currently, the only universally accepted measure of competency in the United States is the National Council Licensure Examination (NCLEX). This exam measures competence levels in nursing student transitioning into professional practice. However, there is no agreement on a continuing measure of competency (Fero, Witsberger, Wesmiller, Zullo, & Hoffman, 2008). Wotton et al. (2010) have suggested that more research is needed to validate the relationship between the use of simulation and the development of clinical reasoning skills.

### **Communication**

According to Benner (1982), the ability to communicate and collaborate with healthcare team members is a characteristic of an expert nurse. Several simulations allow nursing students to practice communicating and collaborating with healthcare team members, two skills often not practiced in the clinical setting. Gaba (2004) reinforced the idea that simulation can be a useful tool in improving communication with patients and the healthcare team. In their study, Eggenberger and Regan (2010) expanded simulation to teach family nursing, noting that being able to evaluate behaviors moving toward competence is realistic in undergraduate education. Students in this study exhibited varying levels of competence in providing family nursing (Eggenberger & Regan, 2010).

### **Self-confidence**

Self-confidence was another theme found in the nursing literature on simulation. Blum et al. (2010) looked at the impact high fidelity simulation had on students' self-confidence and clinical competence. The researchers found that both traditional clinical and simulation instruction increased student self-confidence and clinical competence (Blum et al., 2010). A study conducted by Brown and Chronister (2009) looked at the effect on critical thinking and

self-confidence when simulation was incorporated into an electrocardiogram course. While the study showed that simulation increased nursing students' self-confidence, there was no proof that simulation promoted critical thinking more than traditional lectures. The researchers explained that critical thinking is a difficult to measure multi-faceted skill that depends on many factors, including a person's life experiences and confidence level.

### **Preparing the Workforce**

Nursing educators must keep pace with the rapidly changing healthcare working environment in order to prepare students to be successful in their profession. According to a National Council of State Boards of Nursing study (2003), nursing students believe communication skills, and the knowledge of and ability to perform psychomotor skills and nursing procedures are important for practice. One survey showed the proliferation of simulation by reporting "87% [of nursing programs] use simulation and 54% of those programs are using simulation in at least five clinical courses," (Hayden, 2010, p.55). Conversely, this increasing use of simulation does not appear to be improving professional practice in the workplace as several studies have shown that new registered nurses often are inadequately prepared. In one study, researchers emphasized the need for increased clinical competence in nursing education (Cheek & Jones, 2003). Smith and Crawford (2003) found that new graduate nurses felt they lacked experience in calling physicians, supervising others, and managing a group of six or more patients.

Given the exponential growth in the use of simulation in nursing programs, one would expect corresponding growth in the nursing students' level of preparation for today's healthcare workplace as well as the research conducted in this area. However, as this literature review



demonstrates, we need to learn what role simulation plays in preparing new graduate nurses for their profession.

### **Literature Gaps**

In this researcher's estimation, there are several gaps in the literature, including questions about the transferability of competence from a simulated environment to a clinical setting and the transfer of knowledge from the simulated environment to the workplace. Dillon, Boulet, Hawkins, and Swanson (2004) also noted a gap in the literature about whether performance in a simulated environment carries into the clinical environment. Moreover, there is dearth of studies on the use of multi-disciplinary simulation exercises for enhancing communication and collaboration. Methods for evaluating the effectiveness of simulation also are lacking. Alinier et al. (2006) noted a lack of evidence of the effectiveness of simulation training in nursing education. This lack of evidence had undoubtedly contributed to the inconsistency in recommendations about the best way to conduct the simulation process. Fero et al. (2009) concluded that further research is needed to determine if simulation-based performance correlates with critical thinking skills in the clinical setting.

### **Summary**

This chapter examined the background of the study's context and presented a review of the literature grouped according to the four stages of Kolb's Experiential Learning Model. Next, literature about preparing the nursing workforce and pertinent literature gaps were discussed. Chapter Three covers the study's methodology including the research design, target population, sample size, setting, recruitment, personal perspective, data collection, and data analysis.

## **Chapter Three**

### **Method**

The purpose of this descriptive, qualitative study to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. This chapter describes the study method including research design, sample, setting, recruitment, data collection and analysis, and the risks of conducting qualitative research in the healthcare setting. Finally, the researcher's personal perspectives, limitations, and ethical considerations are examined.

### **Research Design**

A qualitative descriptive exploratory design was selected for this study. Qualitative research has many characteristics that make it appropriate to examine newly registered nurses' perceptions about simulation in nursing education. Merriam (2002) noted that researchers conducting basic qualitative research are primarily interested in "how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences" (p. 23, 2009). According to Merriam (2002), to understand qualitative research, it is important to realize that "meaning is socially constructed by individuals in interaction with their world" (p. 3). Merriam elaborated by saying "qualitative researchers are interested in understanding what those interpretations are at a particular point in time and in a particular context (p.4). Patton (2005) stated, "Themes, patterns, understandings, and insights that emerge from research fieldwork and subsequent analysis are the fruit of qualitative inquiry" (p. 10). Typically, data are collected through analysis of documents, observations, and interviews. Analysis is then conducted by organizing the data according to themes or reoccurring patterns (Merriam, 2009). These methods will be used in this research.

Swafford (2014) explained that qualitative research “focuses on describing or explaining phenomena,” such as the transfer of knowledge occurring in the transition from nursing student to nursing professional, and allows the researcher to become more intimate with and expand understanding of the topic of interest (p.90). Similarly, Shelton, Smith, and Mort (2014) contend that qualitative research illuminates “the practice of relating real-world insights to transferrable outcomes,” that are the nature of this examination (p.270). Furthermore, Campbell (2014) recognized that “the exploration and discovery of data in a qualitative research method often indicates that there is not much written about the participants or the topic of study” (p.3).

According to Brink and Wood (1998), exploratory descriptive designs are usually field studies in natural settings. The data collected in this type of study either contribute to the development of theory or explain phenomena from the perspective of the participants (Brink & Wood, 1998). This approach allows the researcher to gain insight into the participants’ feelings, perceptions, attitudes, and experiences using flexible open-ended questions (Brink & Wood, 1998). Therefore, an exploratory design will allow the researcher to identify and explore the in-depth experiences of the new graduate nurses, giving the researcher a deep understanding of the new graduate nurses’ experiences. Human experience will be studied which will require human interaction; therefore, participants will be interviewed for the study.

### **Sample**

This study sought to understand how effectively clinical simulation prepared a group of newly licensed registered nurses for professional practice. Techniques were employed to yield a sample of sufficient size that represented the population from which participants were drawn.

## **Purposive Sampling**

Typically, qualitative research studies require small numbers of participants with the purpose of studying phenomenon in depth and in detail (Miles & Huberman, 1994; Patton, 1990). According to Merriam (2002), “since qualitative inquiry seeks to understand the meaning of a phenomenon from the perspectives of the participants, it is important to select a sample from which most can be learned” (p.12). This idea constitutes purposeful sampling. This study used purposive sampling, which is the most common sampling approach in qualitative research.

## **Participants**

This study’s sample was composed of graduate nurses who are licensed, have been practicing for less than a year, were able to discuss the use of simulation in their nursing program, and had no previous relationship with the researcher. The Nursing Education department at a large hospital in the Southeastern United States provided a list of 16 newly licensed registered nurses who completed either their Associate or Bachelor Nursing degrees, as well as their general nursing orientation, between December 2013 and March 2014. These nurses were participating in a nurse residency program that meets monthly at the facility to provide mentorship for these nurses. The program did not use any form of simulation. Each of these 16 nurses was invited to participate in the study, and 10 volunteered to do so. No individual meeting the above-described requirements was excluded.

For the current study, the sample consisted of 10 newly graduated, female nurses with less than one year of experience working in the hospital setting. Most participants were in their early to mid-twenties with the oldest participant being 31 years of age. The participants worked on different hospital units including the Cardiac Observation Unit (COU), the Cardiac Intervention Unit (CIU), the pulmonary unit, and the medical-surgical floors. Participants

reported graduating from five different nursing programs including bachelor and associate degree programs. Rather than using pseudonyms, the researcher assigned each participant a number based on the order they were interviewed. The researcher chose to do this to protect the anonymity of the participants because the hospital and more specifically, the nurse residency program is such a close community. Because of this close community, it was decided by the researcher not to collect personal data. Therefore, it was not possible to provide demographic profiles of each of the participants.

### **Sample Size**

Purposive sampling procedures were used to recruit study participants from the nurse residency program at a large hospital in the southeastern United States. According to Merriam (2009), when using a purposeful sampling, the sample group should be considered complete once no new information is obtained from further interviews or data gathering. In purposeful sampling, choosing a sample size typically depends on the number of participants needed to achieve data “saturation,” or the point at which no new information or themes are observed in the data (Guest, Bunce, & Johnson, 2006). Similarly, Lincoln and Guba (1994) refer to data adequacy, which describes the amount of data collected rather than the number of participants. “Adequacy is attained when sufficient data have been collected that saturation occurs and variation is both accounted for and understood” (Lincoln and Guba, 1994, p. 230). According to Miles and Huberman (1994), data saturation occurs when data or information becomes redundant. To achieve data saturation, interviews were analyzed individually and then comparatively. Key words and phrases were identified by the researcher. The researcher analyzed all of the transcripts in this manner until all concepts were repeated and no new

concepts or themes emerged. When the researcher determined this point had been reached, the interviews were concluded.

### **Setting**

The setting for this study was a 363-bed, for-profit, acute care facility in the Southeastern United States. This accredited facility provided a full range of hospital and specialty services to a primarily adult population. The facility's nursing education department employs one full-time nurse educator who is responsible for providing orientation to newly hired nurses and professional development for the entire nursing staff. To ensure privacy, the study interviews took place in a neutral area in the hospital away from the education department and convenient for participants. Ordinarily, new graduate nurses complete an eight-week orientation process at this facility. In addition to the typical orientation process, the group of new graduate nurses from which study sample were drawn was participating in a nurse residency program that met at the beginning of each month for a year.

### **Recruitment**

After receiving approval from the University's Institutional Review Board (IRB), the nurse educator was approached to identify meeting times of the participants in the nurse residency program. The researcher attended one of these meetings to introduce herself to the participants and inform them about the study. Through direct contact, the researcher and nurse educator invited all of the participants who were in the Nurse Residency Program to participate in the study. The nurse educator left the room and the researcher described the study to the participants. An information sheet was passed out at this time telling the potential participants more about the study and allowing the participant's time to process the information and think of questions. The researcher made her office phone number and email available to the potential

participants. All of the questions were thoroughly answered by the researcher via phone or email. After participants had adequate time to ask the researcher questions and give verbal consent to participate in the study, they received a written consent form to sign via email. It was made clear to participants that study participation is voluntary (they can withdraw at any time) and will have no effect on their employment. The researcher then left the meeting and waited in a private room down the hall from the education department. During their meeting breaks, participants were given time to ask any immediate questions. In one week, a reminder email was sent by the nurse educator to all of the participants who are in the Nurse Residency Program containing the same information sheet that was handed out at the initial meeting.

### **Data Collection**

Data collection for this study consisted of compiling information from participant interviews and recording pertinent field notes.

### **Interviews**

Data for this study were collected during face-to-face individual interviews with study participants. Prior to being interviewed, each participant reviewed and signed the informed consent document, which included the study's objectives and significance. All interviews followed the ethical guidelines of the University of Tennessee's Institutional Review Board. The semi-structured interview protocol contained two-open ended questions designed to encourage participants to share their simulation experiences in their formal education and to describe how such experiences may have prepared them for professional nursing practice. Participants were asked the following two questions:

- 1) How do you value your previous experience with simulation in your current practice as a new graduate nurse?

2) How would you describe your experience using simulation in your formal education?

Field notes were taken by the researcher during the interview process. After each interview was audio recorded, the researcher prepared a word-by-word transcript.

The researcher conducted interviews using semi-structured, open-ended questions to capture participants' rich descriptions of and self-reflection about their simulation experiences. According to Kvale and Brinkmann (2009), an interview is a conversation that has both a structure and a purpose. DiCicco-Bloom and Crabtree (2006) said semi-structured interviews are "generally organized around a set of predetermined open-ended questions, with other questions emerging from the dialogue between interviewer and interviewee" (p.315). This study's interviews were semi-structured because—while two preset, open-ended questions were asked—participants were asked additional probing questions based on their responses. These interviews produced descriptive accounts of participants' experiences with simulation, what it meant to them, and the ways it did or did not help prepare them for professional practice.

### **Field Notes**

The researcher recorded field notes during the interviews to provide a more holistic approach to data collection. According to Rodgers and Cowles (1993) field notes "are used most often in reference to recordings of activities and behaviors of the primary data sources [the participants], thus serving as the major focus of the analyses for observational fieldwork" (p. 220). Field notes included points that emerged from the initial research questions that need to be clarified in subsequent questions. The notes also included the researcher's observations during the interview about the participants and the environment as well as the researcher's thoughts and reflections.



## **Data Analysis**

It is important to understand that the data analysis begins during the interview phase and involves, in its basic definition, making sense of the data (Merriam, 2009). As interviews were completed, they were transcribed and analyzed individually. After all the interviews were completed, the data were analyzed collectively.

First, the researcher carefully reviewed each interview transcript individually to identify meaningful words and phrases and ensure she captured the nuances of each participant's meanings. Once each interview was evaluated individually, the researcher used a constant comparative analysis approach, which allows a more thorough interpretation, to examine all the interview data concurrently as a whole to find commonalities among participants' responses and identify collective explanations and themes. The transcripts were read, then words and phrases were highlighted and underlined in order to find commonalities, these words and phrases then became themes. Data organization included identifying categories then themes that emerged from the analysis of participant responses. Merriam (2009) described codes as individual pieces of descriptive terminology that describe or represent a larger piece of data. The data included words, phrases, and sentences that had common meanings or themes. The researcher kept comprehensive notes of the data's contextual background and included them in the data analysis. The data analysis also assigned truth value by performing member checking of the documented field notes (data triangulation). After the categories and then themes were identified, the researcher went back to the participant to ensure accuracy.

Patton (2005), states, "themes, patterns, understandings, and insights that emerge from research fieldwork and subsequent analysis are the fruit of qualitative inquiry" (p. 10). This study's data analysis involved a search for such themes, patterns, understandings, and insights.

The process of data analysis began with the removal of personal identifiers to protect patient confidentiality. The researcher transcribed and analyzed interview data (word by word) after each interview to capture the nuances of meaning. The researcher searched for meaningful words and phrases, and looked for commonalities among participants' responses. Using a constant comparative analysis approach, which allows for a more thorough interpretation, the researcher analyzed all the data concurrently, looking for themes and explanations. According to Miles and Huberman (1994), "the researcher's role is to gain a "holistic" (systemic, encompassing, integrated) overview of the context under study" (p. 6). Lincoln and Guba (1985) report one way of increasing the rigor of a qualitative study is to confirm the results with the participants in a process referred to as member checking. Once the researcher found commonalities and themes among the data, eight of the participants were then asked to review and confirm them. Barbour (2001) noted that participants' reactions to emerging findings could help refine explanations. There was not any disagreement or further clarification is needed regarding the coded themes, therefore, the researcher and participant did not have return to the original text for clarification until a consensus was reached. As suggested by Lincoln and Guba (1985), results were shared with as many of the participants as possible. All data was anonymous and was presented only as themes on blank comment sheets. The completed comment sheets were analyzed the same way as the initial data to determine whether participants agreed that the themes reflected their perspectives no further theme revisions were necessary.

According to Lincoln and Guba (1985), an audit trail is a crucial part of any rigorous qualitative study. The audit trail provides an explanation of how the researcher used the participants' words to categorize patterns and themes. Field notes are composed of a variety of researcher-generated data that must be consistently and conscientiously recorded and skillfully

organized throughout the research process (Lincoln & Guba, 1985). The researcher strove to keep accurate and comprehensive notes related to the data's contextual background and was include these in the data analysis.

Qualitative research can be skewed by the researcher's assumptions, perceptions, and beliefs. Therefore, researchers must take steps to ensure this does not happen. According to Rodgers and Crowles (1993), "the analysis of qualitative data is dependent upon the researcher's thought processes in sorting, categorizing, and comparing data and in conceptualizing patterns that emerge as the data are examined and coded" (p. 222). For these reasons, the researcher carefully recorded in analytical notes any of her feelings or reactions that could bias her thought processes. The researcher also asked for further clarification from participants if something was unclear so as not to draw inferences based on her own experiences.

To assure trustworthiness in qualitative research, four areas should be discussed: truth value, applicability (transferability), consistency, and neutrality. Truth value was included in this study's data analysis by performing member checking and taking field notes (data triangulation). Data triangulation "involves using different sources of information in order to increase the validity of a study" (Guion, Diehl, & McDonald, 2011, p.1). The researcher kept analytical notes to enhance the applicability (transferability) of the study findings. Consistency was demonstrated throughout the study by having one person (the researcher) conduct each interview, transcribe all of the data and analytical notes, perform the constant data analysis, and solicit member checking. Finally, neutrality in this study was enhanced as the researcher continually recognized her previous simulation experience and recorded her thoughts during the interview process.

## **Issues Related to Conducting Qualitative Research in the Healthcare Setting**

Shelton et al. (2014) have identified four risks to participants from participating in qualitative research in healthcare settings: anxiety, distress, exploitation, and misrepresentation. Anxiety and distress can occur when it is emotionally difficult for participants to discuss or recall the topic being researched. The researcher tried to accommodate for this risk by purposefully selecting a group of participants that has recently graduated and are more likely to remember their simulation experiences.

Exploitation can take place when a nursing graduate feels coerced into participating in research being conducted by a former instructor. The researcher eliminated this risk by ensuring she had no previous interaction with the participants, explaining the research study without the institutional educator being present, holding interviews in a neutral area, allowing participants to accept or decline participation via email, and telling participants they can decline participation at any time without consequences.

Misrepresentation happens when researchers draw conclusions from a participant's actions that the participant would disagree with. To reduce the risk of misrepresentation, the researcher ensured that she was aware of her assumptions, values, and beliefs; took extensive analytic and field notes; created an audit trail documenting how participant quotes led to categories and themes; performed thorough member checking, and used measures to protect participant anonymity in all stages of the data collection and analysis.

### **Researcher Perspective**

The researcher is a nursing educator and has been a Simulation Alliance Fellow for the last three years. The Tennessee Simulation Alliance is a group of 12 educators across Tennessee that meets regularly to share their simulation experiences and provides a central location for

communication, collaboration, and sharing. The researcher has experience with simulation in nursing education, including with junior and senior Baccalaureate nursing students. She also has attended multiple conferences on simulation in nursing and medical education. Due to her work, the researcher holds many opinions about simulation (such as believing it to be a valuable teaching modality) and nursing education (acknowledging the challenges educators face such as competition for clinical sites and the need to innovate to prepare nurses to enter the workforce). The researcher is aware of her opinions and, to increase study rigor, recorded them in analytical notes as a part of the data collection process.

### **Limitations of the Research Design**

This study employed a basic descriptive qualitative methodology with a sample size of 10 newly graduated registered nurses employed in a major medical center in the southeastern United States. Inclusion criteria of less than 1 year of experience will limit transferability for the results to all newly graduated registered nurses especially those who have practiced longer or come from other areas of the country where simulation may be utilized more or in a different way. Merriam (2009) stated that the ability to transfer results from qualitative studies or like situations is dependent upon the readers and the extent to which they apply the finding to other situations. Particularly in healthcare, practitioners have to decide the extent to which results apply to the given problem. Guba and Lincoln (1994) described transferability as providing rich, in-depth, and descriptive data that allow readers the ability to evaluate the applicability of the results to their issue.

Creswell (2009) discussed that the researcher being present and conducting the interview may serve as a limitations as it may cause a bias in the responses. Creswell (2009) also argued that participants who have limited experience [in simulation] might find it problematic to relate

their experience accurately. Therefore, participants with less experience in simulation may not be able to acknowledge or articulate how simulation has affected or benefitted their practice as a newly licensed registered nurse.

### **Ethical Considerations**

In preparation for ethics considerations, the researcher has completed the Collaborative Institutional Training Initiative program (CITI). Other ethical considerations included ensuring that all participants were well informed as to the details of the study. During the recruitment phase of data collection, all potential participants were informed orally of the purpose of the study and the data collection methods. During the interview session, again, the study participants were informed orally and asked to sign a written consent form that discussed privacy of the individual and the ability to stop participating in the study at any time.

### **Summary**

This chapter discussed this research study's methodology including the sample, setting, and participant recruitment. Chapter Three also covered data collection, data analysis, the researcher's personal perspectives, limitations of the research design and ethical considerations.

## **Chapter Four**

### **Findings**

The purpose of this study was to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. First, this chapter briefly describes the study's participants. Next, a discussion of the findings of the study and the four themes that emerged from analysis of the interview data are presented along with subthemes and the supporting participant quotes and illustrations.

### **Participants**

Purposive sampling procedures were used to recruit study participants from the nurse residency program at a large hospital in the southeastern United States. According to Merriam (2009), a purposeful sampling group should be considered complete once no new information is obtained from further interviews or data gathering. For this study, the sample consisted of 10 newly graduated, female nurses with less than one year of experience working in the hospital setting. Most participants were in their early to mid-twenties with the oldest aged 31 years. The participants worked on different hospital units including the Cardiac Observation Unit (COU), the Cardiac Intervention Unit (CIU), the pulmonary unit, and the medical-surgical floors. Participants reported graduating from five different nursing programs, which included both bachelor and associate degree programs. Because the nurse residents were a close group who met monthly, it was decided by the researcher not to disclose personal information about the participants in order to maintain confidentiality. None of the participants had any previous relationship with the researcher. Rather than using pseudonyms, the researcher assigned each participant a number based on the order they were interviewed.

## Themes

Based on extensive analysis of field notes and interview data, the researcher extrapolated four major themes. The first two themes—(1) how simulation is being used, and (2) the perceived value of simulation—emerged from analysis of data from interview question one, which asked participants to describe their experiences with simulation. The final two themes—(3) simulation versus “real life,” and (4) simulation and preparation for practice—arose from the second question, which asked participants to describe how their experience using simulation prepared them for what they are doing now. Figure 2 depicts the study’s identified themes and subthemes.

### **Theme I – How Simulation is Being Used**

The first theme identified in the data analysis was how simulation is being used. All ten participants reported using some type of simulation in their formal nursing education. There were similarities and differences in how simulation was used in their nursing programs. The subthemes identified in Theme I were skills lab, patient care scenarios, debriefing, program timing, and hospital vs. nursing school simulation (Figure 3). These subthemes reflect similarities and differences in participants’ experiences.

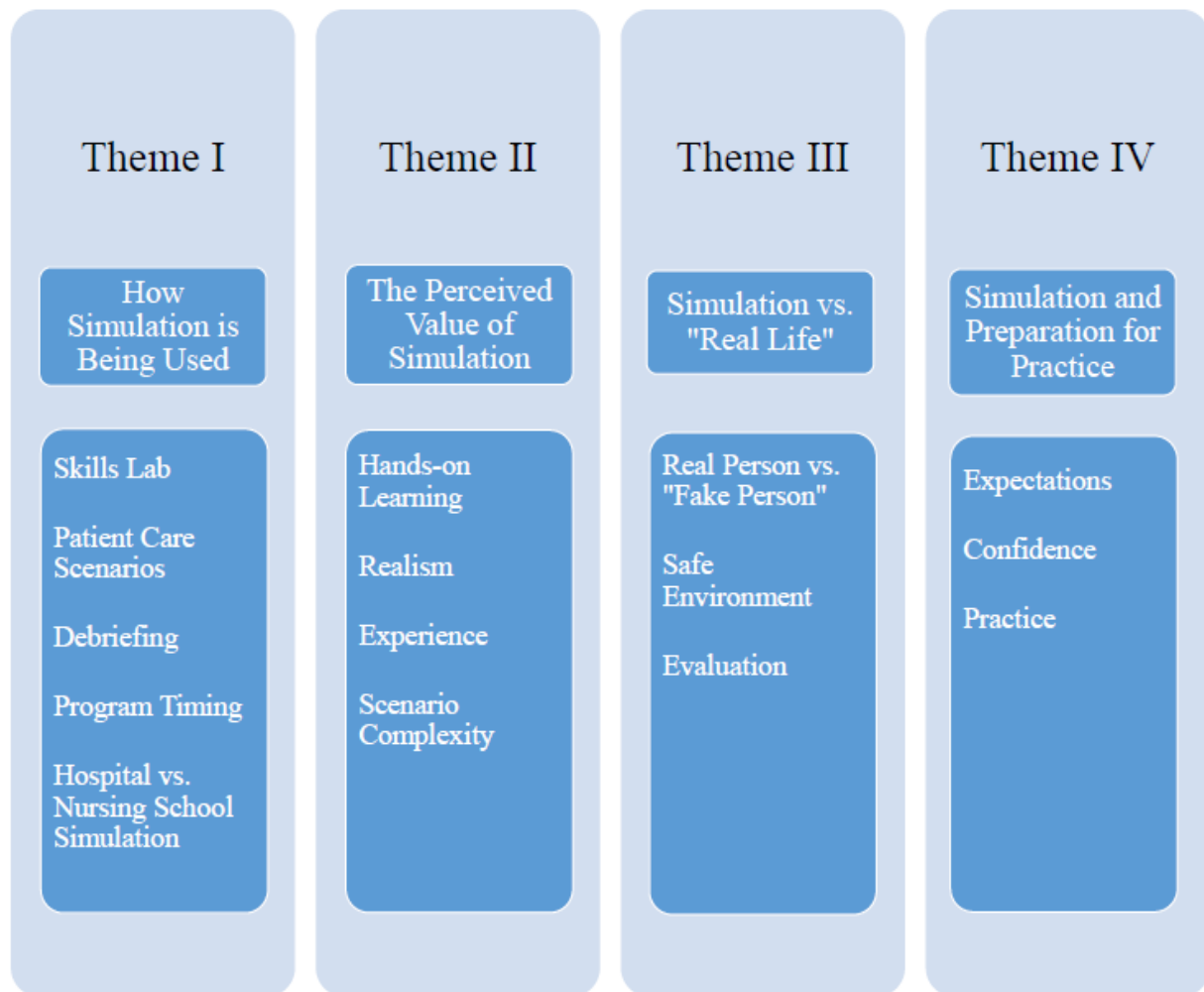
**Skills lab.** All participants reported using simulation in their nursing program’s skills lab. Most of their experiences involved practicing such skills as nasogastric (NG) tube insertion, intravenous (IV) therapy, and catheter (Foley) insertion. Participant 1 said, “It was basically just for skills like starting IV’s and enemas, and different stuff.” Participant 3 confirmed, “We used it [simulation] more like a skills lab.” Participant 5 noted, “We did workshop things.” Participant 6 stated,



We were required to check off all of our basic skills that we learned, specifically, NG tubes, Foley's, putting IVs in, and all of the basic nursing skills, changing dressings, and everything like that. We would practice skills like two or three times and on both a male and a female.

Participant 3 concurred that in her program, "We used it [simulation] more like a skills lab."

Finally, participant 10 confirmed that her program used simulation to practice skills.



*Figure 2. Four themes illustrating how clinical simulation prepares newly licensed registered nurses for professional practice*

## Theme I -- How Simulation is Being Used

- Skills Lab
- Patient Care Scenarios
- Debriefing
- Program Timing
- Hospital vs. Nursing School Simulation

*Figure 3. Major subthemes within Theme I: How simulation is being used*

**Patient care scenarios.** Some participants described using simulation to practice patient care scenarios. Five participants participated in simulation scenarios using a patient mannequin programmed with the symptoms of a specific health condition. Of these five, only one participant reported being given the opportunity to repeat the scenario more than once. Participant 6 communicated,

We did a lot of scenarios... our instructor would set up a supply room so to speak and we would look at our scenario, we would get 30 seconds to look at them [our scenarios] and we would go to the supply room and get what I thought I needed, and then we would have a time period like five to six minutes where we would go into our [simulated] patient's room and get the supplies we gathered to help our patients.

Participant 6 also described another simulation scenario,

I remember one time... my patient was on the floor. I guess at first we didn't even think about using a backboard, we just picked the patient up and put him into bed. It is the little things like that, that help you think faster about what you need and where to get it.

Participant 4 reported participating in a code scenario (treating a patient in cardiac or respiratory arrest) near the end of her program. Participant 7 said, “We got to do a mock code and different scenarios. We did skills labs but we practiced on each other. Not sticking, but assessments. We did practice a few things on mannequins.” Participant 8 stated, “We did skills lab and practiced on a mannequin and we got to do one code.” Participant 2 believed that simulation helped her learn assessment skills more effectively than her clinical education. She stated, “We had one simulation mannequin that we used and we would do assessments like listening to breath sounds and listening to heart murmurs.”

**Debriefing.** Participant 5 described her debriefing experience,

There would be a rubric where the instructors would write down things that you did wrong and that you could do better, then we would do the scenario again closer to the end of the semester. So, we did each scenario twice and we could see how we progressed.

Participant 8 stated, “We just did the code once, then we debriefed afterwards about what we did wrong, how it could have gone smoother.”

**Program timing.** The participants who used simulation in their nursing programs described using it at different points including during their first semester, last semester, and throughout all four semesters. Participant 3 stated, “We used simulation when we did lab. The first few weeks of lab, we used it [simulation] for NG tubes, Foley’s, some sticking, and different skills.” Participants 4, 5, and 7 participated in a simulated code scenario during their last program semester. Participant 9 reported,

We used it all four semesters but, for the most part, the first semester. Every week we did something a little different. We spent the first week on NG tubes, then we did suctioning and catheters. So, we did a different skill each week. We would pick a random skill and

have to perform it in front of our instructor and you would have to pass before you were allowed to go into the clinical area. Once you passed the skill on the mannequin, then you could go into the clinical area.

**Hospital vs. nursing school simulation.** While only two participants had not used scenarios in their nursing programs, they were able to use it after being hired by the hospital. Participants 3 and 5 used simulation as part of the advanced cardiac life support (ACLS) course provided by the hospital. Participant 3 stated, “I only had scenarios in my ACLS class, which was provided by the hospital. Participant 5 also relayed that “We had to do that here at the hospital, too, when we had ACLS, which was essentially the same thing. We had to do ACLS when we first got here. That kind of gave me a little preparation about what to expect.” This is a noteworthy point because it shows that participants found simulation valuable for orienting newly graduated nurses to clinical practice.

## **Theme II – The Perceived Value of Simulation**

The second theme, the perceived value of simulation, showed that most participants found some value in the type of hands-on education that simulation provides. The degree of value appeared to depend on how it was used in the participant’s program.

The subthemes identified for theme two were hands-on learning, realism, confidence, experience, and scenario complexity (Figure 4).

**Hands-on learning.** The value participants placed on hands-on learning was reflected in their interviews. Participant 1 said,

It [simulation] was very limited but it was very useful, even the fake little patches of skin that have a vein in them. Using those even helped me because I am a doing it type of

## Theme II -- The Perceived Value of Simulation

- Hands-on Learning
- Realism
- Experience
- Scenario Complexity

*Figure 4. Major subthemes within Theme II: The perceived value of simulation*

learner... It really helped teach me how to do it because you can read stuff and someone can tell you how to do it, but once you actually do it yourself, it really helps.

Participant 5 reported,

We did workshop things. The way you read things in books is not how it is done in the real world and you learn things more through hands-on experience, especially with simulation. If I never... had that, and I... had to learn things solely from a book, I never would have been able to put two and two together.

Participant 4 stated,

I had never been in a code and understood that everyone had a role, so that was good.

Granted, when I was in a real code in practice, it was very different, but I do think I knew a little more than I would have had I not been in that simulation.

**Realism.** Realism refers to how closely the simulation mimics or imitates real life experiences. The more realistic a simulation was, the more it was valued by participants.

Participant 2 stated,

We had dummies we used to start Foleys... but the one SimMan<sup>®</sup> [high fidelity mannequin] was the one I liked the most. It gave you much more perspective about what to expect [in practice]. Many things we were learning about I wasn't familiar with.

Participant 6 stated,

I really appreciate it. I think our instructor did a great job of giving us real patient experiences. She would stand at the head of the bed and she would be the voice of the patient, she would speak to us like a patient would actually speak to us. It was so much more realistic than practicing [on something] that doesn't respond or doesn't say anything to you... she would kind of freak us out and intimidate us, but I think it was helpful....

Participant 7 reported,

It [the high fidelity mannequin] was more like the real life situation versus the dummy who was just there. I think it gave you more of an insight of what it's really like. You work with a team and you don't have a teacher there telling you what to do with this simulation. It's more like a real patient. If you do something wrong, you can really kill it....

Participant 8 said, "When we did the simulation—and that was the first and only time we did it—I think we saw what was really involved in the code instead of talking about it, so that helped."

Participant 1 stated,

I value it [simulation] a lot, because I feel like, when you start out on the floor, they think that you were taught everything in nursing school. So, when you go to do something, they just assume that you have done it. You know if you try to remember back and try to remember the steps that I took and you know, ok so I need to do this first and this is sterile and this isn't sterile... if I can remember how I did it with that fake person, then I

can try to put that into real life and try to do it like I remember. Of course, you can always ask questions but it helps you...

Participant 3 said of a code experience,

Just getting a feeling for what might be going on in that situation. What everybody should be doing. Everybody has a certain task that they should be doing. The instructor... was really high strung, so it gave you a sense of how... it really would be. They would get up and yell and get frantic and this really impressed upon me how this situation might actually be.

Participant 7 reported,

We got to do a mock code and different scenarios. I think it was helpful because... it showed you how things worked in the real world without an instructor there. And you had to learn with your classmates and figure out what to do, and it wasn't the same as having an instructor there.

Participant 9 said,

We did the scenario in a group... my group did three different codes. During each code, everyone had a different role. Like one person did chest compressions, one nurse was in charge, one person was the doctor giving orders. Everyone had a different role so that helped to see how a code might actually be run.

**Experience.** Finally, the experiences provided by simulation played an important role in its perceived value. Participant 4 reflected this belief by saying,

I wouldn't have gotten to experience any type of code if we hadn't done the code in simulation. The only code I got to see in clinical... was in a student role and we got to do CPR and that was it. So going through that was a big deal for us.

Participant 6 reported,

You have patients that are really nice, you have patients that are really hateful, so I think it is incredibly important to be able to give injections and start IV's, and Foleys and just learn all the basic skills on a mannequin before you practice in the clinical setting.

Two participants did not value their simulation experiences.

Participant 9 explained,

I didn't really like it. I felt like we should have spent less time on simulation because we did six weeks of simulation first semester and five weeks of clinical. I felt we could have spent seven weeks on clinicals and just a few weeks in simulation. I just wish we would have spent more time with real people, with patients versus a mannequin that can't talk to you.

Participant 10 stated, "We did it prior to clinicals, we didn't have a lot of experience with it, and, honestly, I don't know if it helped us out at all."

**Scenario complexity.** Finally, the more complex a simulation scenario, the more it was valued by participants. Participant 7 stated,

I think it would have been beneficial if we would have gotten to do simulations throughout and worked our way up... like if we would have gotten to do assessments on them and different things. I think it would have been [more] beneficial than doing just the one mock code.

### **Theme III—Simulation versus “Real Life”**

The third theme was simulation versus “real life.” It was evident that, although simulation experiences were made as realistic as possible, they were distinctly different from caring for actual patients. Many participants often described the differences between simulation



and real life. The subthemes identified for theme four were real person vs. fake person, safe environment, and evaluation (Figure 5).

### Theme III -- Simulation vs. "Real Life"

- Real person vs. "Fake Person"
- Safe Environment
- Evaluation

*Figure 5. Major subthemes within Theme III: Simulation vs. "real life"*

**Real person vs. "fake person."** Many participants commented on the differences between practicing on a mannequin and practicing on a real person. Participant 2 stated, "...doing it on a real person and doing it on a fake person are completely different... starting a Foley on those simulation things is nothing like starting a Foley on a real person..."

Participant 3 concurred by saying,

For instance, needle sticks, it was much harder, and it is not like actually sticking a real person. The fake skin, it's different. Of course, putting any types of tubes into a dummy is much harder than putting them into an actual person. I just think the simulation is harder.

Participant 1 said, "If I can remember how I did it with that fake person then I can try to put that into real life and try to do it like I remember." Participant 6 reflected,

It's obviously a little different, but... it's nice to actually get a feel for it before you just dive in. Of course, we always had our instructors with us when we tried things in the

clinical setting. They would help guide us, but it was helpful to be able to practice first to get a feel for how things are before you do it on a real person.

Participant 9 asserted, "... it helped somewhat , but I guess it's not anything like taking care of a real patient... it helps you to know the skill, but... its different doing the skill on a real patient and on dummy or simulator."

**Safe environment.** Participants reflected that simulation was helpful to practice without the worry of accidentally harming a real patient. Participant 4 reported, "I think in class you can go a lot slower and talk about things. And no one is freaking out because it's just a dummy ... when you were the recorder, it was like 'did you get that down?' When in real life, everyone is talking, everything is going on at once, there are 20 people in the room, not just five students. So the codes in real life are a lot more overwhelming, but I am very happy that every single person is in that room during a real code... maybe I am glad we had that simulation, I just don't think it is as overwhelming as a real code is."

Participant 8 said,

I think when we did the simulation—and that was the first and only time we did it—I think we saw what was really involved in the code... instead of talking about it. So that helped, but I wish we would have gotten to do it more, that way we would have been a little more prepared when we had to do the real thing at the hospital...

When asked if she valued her simulation experience as a new graduate nurse, participant 7 stated,

It was a safe environment. We got to do a mock code and different scenarios. I think it was helpful because... it showed you how things worked in the real world without an

instructor there and you had to learn with your classmates and figure out what to do and it wasn't the same as having an instructor there.

**Evaluation.** Participants valued simulations that included an evaluation component more than simulations that did not. Participant 5 stated, "Being put in a pressure type of situation and being tested on it especially, it kind of prepares you for the real thing." Participant 9 used a different type of evaluation method for simulation. The participant would practice a skill each week and would not be allowed to participate in clinicals until they passed the skill, giving them motivation to be evaluated as satisfactory.

#### **Theme IV – Simulation and Preparation for Practice**

The fourth theme identified was simulation and preparation for practice. Although simulation experiences were described as being different from real clinical experiences, nine of the 10 participants found simulation valuable in preparing them practice as professional nurses. The subthemes identified for this theme were expectations, confidence, and practice (Figure 6).

**Expectations.** Participants reported discrepancies between what they were taught in school and what employers expected them to know. Participant 1 stated, "I value it [simulation] a lot because... when you start out on the floor, they think that you were taught everything in nursing school. So when you... do something, they just assume that you have done it..."



#### Theme IV -- Simulation and Preparation for Practice

- Expectations
- Confidence
- Practice

*Figure 6. Major subthemes within Theme IV: Simulation and preparation for practice*

Participant 2 revealed,

when we went to clinical we had so many students and the nurses are so busy doing thing I didn't have an opportunity to do a lot of skills in clinical so simulation was really more helpful for me.

When the participant was asked about this statement, she stated, "I would not have met the expectations of my employer without the opportunities provided with simulation."

**Confidence.** Participants reported that simulation helped build their confidence as nurses, which helped them feel more comfortable in their job working with patients. Participant 5 said, "It [simulation] definitely did [help] because we had to do that here at the hospital, too, when we had ACLS, which was essentially the same thing... That kind of gave me a little preparation about what to expect..."

Participant 2 confirmed, "Of course I feel simulation really built confidence for me... I think it builds confidence in your assessment and what you are there to do... the main purpose was for confidence building, at least for me it was."

**Practice.** Several participants spoke of the value of practicing skills before actually having to perform them on real patients in a hospital setting. Participant 6 said,

I think it was helpful because you have all kinds of patients. You have patients that are really nice, you have patients that are really hateful. I think it is incredibly important to be able to give injections and start IVs and Foleys and just learn all the basic skills on a mannequin before you practice in the clinical setting.

This quote was presented in Theme Two: The Perceived Value of Simulation, but it also represents Theme Four: Simulation and the Preparation for Practice.

Participant 8 asserted, “It helped me when I went to practice skills on a real patient.”

Participant 9 said,

I think the simulation with the code... helped me to understand what a code situation might be like... being exposed to simulation in school helped me to better recognize the situation and understand the process. Because we had to know every cardiac rhythm, how to treat it, what drugs to use, [and] what the dosages were. This was all in preparation for our simulation. In practice or real life, this really helped to know how to treat rhythms to know what drugs to use.

Participant 10 summed up the value of practice by saying, “Practicing skills helped me with my job.”

While participants valued the practice simulation provided, they also expressed wanting more of it. Logistically, this was difficult in some cases for a variety of reasons. According to participants simulation is labor intensive and time consuming. In addition, only a small number of students can go through a simulation experience at a time. Another challenge was programs’ lack of simulation equipment. One participant had to visit the main campus to use a high fidelity mannequin. Participant 2 stated that her program, “Just had one simulation man for a whole class of 20 students.” She added, “I just wish we had more of it, really ... if we had more simulation equipment that would help.”

Participant 4 mentioned,

There was talk of us doing a birthing simulation and that would have been interesting, but we didn’t get to actually do it and that was disappointing. Other than that, we watched things online, but to me that doesn’t count as simulation. To me, simulation is supposed to be hands on.

Participant 6 reported,

It seems like time is always limited because there are so many people going through the program. I wish you would get to practice skills like two or three times and on both a male and a female... before I got my job here, I had never put a Foley in a male patient. Not in the clinical setting or in the lab. So, I had to have someone go with me. So, I just wish we had more time to practice more things. You know to get more experience under our belts.

Participant 8 said, “I think if we have used simulation more, it would have been more beneficial.” Participant 10 reported, “I feel if we would have done a simulation like ACLS while I was in school, it would have been helpful. I think getting more experience and practice and skills before you go to the floor would be helpful. I also think using special trainers for different skills would be helpful as well.”

### **Summary**

An examination of participant demographics revealed a homogenous participant sample comprised of 10 young, female registered nurses with less than one year of practice experience. These participants freely described their experiences with and opinions of the use of simulation in nursing education. The data were collected and analyzed from the transcribed interviews using the qualitative strategies of data coding and categorization, as well as recording field notes and performing member checking. Four themes were extrapolated from the data: how simulation is being used, perceived value of simulation, simulation versus “real life,” and simulation and preparation for practice. Within each theme, subthemes emerged that further explained the main themes.

The first theme was how simulation is being used. The subthemes were skills lab, patient care scenarios, debriefing, program timing, and hospital vs. nursing school simulation. All participants reported using simulation in the form of skills labs and several reported using it in patient care scenarios. Only two participants referenced the debriefing process. Several participants reported using simulation during their first semester of the nursing program and three reported using it during their last semester. One participant reported using simulation throughout her nursing program. Two participants experienced simulation at their current place of employment.

The second theme was the perceived value of simulation. The subthemes were hands-on learning, realism, experience, and scenario complexity. Simulation's hands-on learning and realism added to its value for participants. Working through simulation exercises, especially complex ones, boosted students experience levels.

In Theme Three, participants compared simulation to "real life." The subthemes were real person vs. fake person, safe environment, and evaluation. The participants articulated the differences between practicing on a fake person or mannequin and caring for a real person. While noting the differences, participants still appreciated that simulation provided a safe environment where they were allowed to make mistakes. Finally, evaluated experiences were taken more seriously by participants.

Participants discussed the use of simulation as preparation for practice in Theme Four. The subthemes were expectations, confidence, and practice. They reported that employers' expectations differed from the newly graduated registered nurses' level of preparation, experience, and competency. Simulation increased participant confidence by providing

meaningful practice. Participants felt that they would have benefitted even more by having more simulation practice.

In Chapter Five, a discussion of themes will be presented as they relate to past research findings. A detailed discussion of the study's implications and conclusions, along with recommendations for using simulation in nursing practice, also are presented in Chapter Five.



## Chapter Five

### Discussion and Conclusions

While the healthcare industry grows and changes rapidly, the demand for well-prepared, competent, professional registered nurses continues unabated. According to the literature, changes in nursing education—including an increase in the number of nursing programs, expanded enrollment, and stricter clinical site guidelines—have decreased the number of clinical sites available to train students (American Association of Colleges of Nursing, 2006). Such changes have resulted in simulation replacing clinical hours in many nursing schools around the country. As simulation use increases, so does the need for nursing educators to understand its role in helping newly graduated nurses transition into professional practice. The first year of practice, which encompasses the transition from student to professional nurse, is a crucial time in a nurse's career that can affect the ability to provide quality care going forward. The purpose of this study was to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. This inquiry offers insights into nursing students' level of exposure to simulation in their formal education programs, how simulation was being used in these programs, and its' perceived value. Furthermore, this research reveals the types of simulation considered most beneficial and offers some recommendations about how simulation should be conducted.

The following chapter delivers a summary of the study's four major themes including relating the themes to the literature and to Kolb's experiential learning theory. Also included in this chapter are recommendations for using simulated learning, study limitations, ideas for future research, and the study conclusion.

## **Discussion of the Findings**

Ten newly licensed registered nurses from an acute care facility in the Southeastern United States were interviewed to obtain their perceptions about their simulation experiences and how these experiences prepared them for what they are doing now. They were asked two main questions:

- 1) How do you value your previous experience with simulation in your current practice as a new graduate nurse?
- 2) How would you describe your experience using simulation in your formal education?

The follow-up questions included asking the nurses for more information about a particular statement or comment if the researcher needed to gain a better understanding of what was being said. The researcher also asked participants to be a little more specific about a situation or experience or to tell the researcher more about a particular statement.

### **Theme 1 – How Simulation is Being Used**

The first theme identified in the data analysis was how simulation is being used. All 10 participants reported using some type of simulation in their formal nursing education. The subthemes identified in Theme I were skills lab, patient care scenarios, debriefing, program timing, and hospital versus nursing school simulation

Nursing schools are using simulation in several ways. All of them use simulation to help train graduates to perform some of the technical skills they need for professional practice. According to Kolb (1984) the ability to transfer abstract knowledge and apply it to a practice setting leads to the attainment of knowledge, according to the theory of experiential learning. Whether on a task trainer or a low fidelity mannequin, all participants had practiced in some type of skills lab, which gave them concrete experience through simulation. One nursing program

would evaluate students on a specific skill every week before hospital clinicals. Students who failed to perform the skill adequately were not allowed into the clinical setting.

### **Concrete Experience**

According to Lisko and O'Dell (2010), "Concrete experience provides the basis for learning, relying on openmindedness and adaptability. Reflective observation makes sense of the concrete experience as varieties of perspectives are articulated. Abstract conceptualization uses logic and ideas to understand situations and problems. Active experimentation tests theories and leads to experiences" (p.107). Some of the concrete experiences participants faced are discussed below.

The majority of studies in the nursing literature involve simulation focused on "the measurement outcomes of self-confidence, knowledge attainment, satisfaction, or skill acquisition" (Childs & Seeples, 2006, p.155) that come from concrete experience. Similarly in this study, most participants used simulation in this way by performing a specific skill on a task trainer or mannequin. The skills performed included catheter insertion, intravenous line insertion, nasogastric tube insertion, intramuscular medication administration, and dressing changes. Participants said they were able to remember these experiences and it helped them perform these skills in practice. One participant explained that remembering how to do something really helps her care for her patients.

Nursing competency consists of more than having knowledge; it involves skill mastery that can be evaluated. Such evaluations made students accountable for learning the skills being taught. According to Bambini, Washburn, and Perkins (2009) simulation improves student confidence in psychomotor skills. Evaluating students using simulation also can improve patient safety because students can be judged proficient in a skill in a safe environment before

attempting it on live patients in clinical settings. In other words, simulation experiences increased skill acquisition and competency in participants.

According to Cato et al. (2009), one of the goals of simulation is to help the student develop clinical judgment or reasoning. Participants reported practicing their clinical judgement skills during simulation experiences where they were presented with a patient who was having a change in health status that required nursing interventions and clinical judgment. The most commonly reported exercise was the code blue scenario, a high stakes situation students may never encounter in the clinical setting. A code blue indicates that a patient is in cardiac or respiratory arrest. Some of the programs repeated code blue scenarios later in the semester, and some did not. The participants described code blue scenarios as collaborative team exercises in which participants were given roles to play and tasks to perform. According to Jeffries (2005), “simulations can promote collaborative learning among students, instructors, and other health professionals to provide an environment in which everyone works together, mimicking what is actually done in real life” (p. 99). The participants indicated that simulations experiences with collaborative efforts enabled them to learn the most.

### **Clinical Judgment and Clinical Reasoning**

According to Cato et al. (2009), one of goals of simulation is to help students develop clinical judgment or reasoning. These terms are used interchangeably in the literature because judgment informs reasoning and reasoning informs judgment (Facione & Facione, 2008). Increasing competency was a recurrent theme in the current study. Practicing skills, collaborating and working in teams, and a scenario’s degree of realism all affected increasing competency.

Programs that used simulation scenarios typically included debriefing. During a typical post-simulation debriefing session, students participate in a reflective discussion with their peers

and instructors and critically analyze how they performed during the exercise. Debriefing is an important component of simulation learning because, according to Mariani et al. (2013), meaningful debriefing supports learner-centered instruction and can lead to the development of clinical judgement. The debriefing session is where most of the learning from a simulation occurs. Previous studies have documented that for the student, or the newly transitioned licensed nurse, educational learning occurs during the debriefing process (Beattie, Koroll, & Price, 2010).

### **Reflective Observation and Debriefing**

According to Kolb (1984) learning is enriched when student's actively problem solve and make decisions, this occurs in the debriefing process. Kolb (1984) also recognized that active reflection is essential to the learning process. Learners find meaning in experiences by reflecting on them using different viewpoints based on their experiences, perspectives, and knowledge. Fountain and Alfred (2009) noted that small group activities involving listening, comparing, networking, and interacting with others to promote discussion and facilitate problem solving result in reflective observation. While participants valued all simulation experiences, those that included debriefing seemed to foster the most learning.

The literature reports that most learning from simulation occurs during the debriefing process. Despite this, only two participants mentioned the debriefing process during their interviews. It is unclear if this was because debriefing was used infrequently or not just not memorable for the participants. In simulation, reflective observation could occur during the debriefing process where faculty and students review the clinical encounter and use reflection to foster clinical judgment (Dreifuerst, 2009). Ackermann (2009) also recognized that hands-on learning, active participation, and reflection provide a powerful learning environment for nursing students. Participants appreciated the instructor feedback they received after simulation

scenarios. Participants described debriefing as a time when the instructor discussed the actions that took place during the simulation or discussed the steps to a skill.

In relation to Kolb's Model, debriefing allows students and instructors to consider their experience and fosters reflective observation. Debriefing also allows students to gain feedback from their instructor. According to Jefferies (2005) "a debriefing activity reinforces the positive aspects of the experience and encourages reflective learning, which allows the participant to link theory to practice and research, think critically, and discuss how to intervene professionally in very complex situations" (p. 101). For these reasons, and to increase the competency of the newly licensed graduate nurses, educators should consider including a debriefing session after every simulation experience.

No participants mentioned experiencing any type of virtual reality or gaming simulation. This result was expected as these types of virtual simulations are expensive and labor intensive to produce. According to Warburton (2009), these modalities are associated with high costs, highly technical infrastructure, and high time consumption.

The timing of the simulation varied. Eight participants described when the simulation occurred in their program. Some described using it the first semester, some the last semester, and some throughout the program. The participants indicated that the more simulation was used, the more comfortable and confident they felt about the exercise.

Finally, two of the participants reported experiencing simulation scenarios only as part of their hospital training. The participants reported that this helped them understand what to expect on the job. This is a noteworthy point because it shows that institutions find simulation valuable for orienting newly graduated nurses to clinical practice. Hospitals are just starting to use simulation as a teaching/training tool. In addition, their exposure to previous scenarios in nursing

school may have helped the newly licensed graduate nurses perform better during that orientation simulation by increasing their confidence. According to Kaddoura (2010), the use of simulation as a teaching strategy promotes critical thinking skills, learning, and confidence. Hospitals are increasingly using simulation to increase new graduate nurses' confidence and competency, which can lead to better patient outcomes and decreased costs from lawsuits stemming from adverse patient events.

### **Theme 2 – Perceived Value of Simulation**

The second theme, the perceived value of simulation, showed that most participants found value in the type of hands-on education that simulation provides. The degree of value depended on how it was used in the program. Subthemes identified for theme two were hands-on learning, realism, confidence, experience, and scenario complexity. Participants relayed that simulation is a useful tool in nursing education and for achieving competency in a skill. Larew et al. (2006) determined that the development of nursing competency requires practice in the clinical environment to acquire necessary skills. They also noted that hospitals that hire new graduate nurses have high expectations of what they should know and that these expectations often differ from what nursing schools require graduates to know.

The participants reiterated the value of “hands on” learning in education. They stated it was easier to remember how to perform a task when they had done it themselves as opposed to just reading about how to do it. One participant said she would not be able to perform a skill simply by just reading about it in a book. Another participant stated, “I am a doing it kind of learner.” Several participants said they appreciated the opportunity to practice tasks on a mannequin or skills trainer before being expected to perform them on a live patient.

Participants appreciated working with high-fidelity mannequins the most. They relayed that the higher fidelity mannequins were more realistic because they breathed, and had a heartbeat and recordable blood pressure. The participants based their concept of realism as how closely the simulation mimicked real life situations they would encounter in the workplace.

These newly graduated registered nurses were motivated by the use of technology during simulation experiences. The more technology involved, the more they appreciated the experience. This finding is congruent with Dawson et al.'s (2007) research suggesting that in order to maintain the respectability of the profession, nurse educators are obligated to examine the impact of high-fidelity simulation on the learning process of nursing students and healthcare professionals. Nursing schools and hospitals should consider this recommendation when determining what type of training equipment to buy. Although they are costly, the high-fidelity mannequins seem to improve the simulation/learning experience for nursing students.

Participants also discussed two key components of the simulation experience: the learning environment and the scenario's complexity. Complexity in nursing simulation is determined by the amount of information it provides and level of decision making it requires. They appreciated simulation's slower-paced, less stressful environment, which encouraged them to learn as they performed tasks instead of trying a task for the first time on a patient. According to Dieckmann, Gaba, and Rall (2007), a simulated learning environment that supports sustained learning produces enhanced learner outcomes.



## **Protecting Patient Safety**

The study participants mentioned patient safety several times. They were aware that one of the major responsibilities professional nurses is to provide safe and effective patient care. Many participants appreciated being able to learn and practice a task during simulation before performing it on an actual patient. Participants also valued talking about their experiences after a simulation exercise. Additionally, they believed themselves to be more familiar and comfortable with the equipment they would be using in the workplace, which one participant noted boosted her confidence level.

According to Hovancsek et al. (2009), patient safety has become a priority concern in nursing. The changing healthcare environment continues to demand well-prepared and safe professional registered nurses. Simulation is an especially important teaching tool especially given the possible devastating consequences of making an error with an actual patient in a complex healthcare environment (Hyland & Hawkins, 2009). Study participants repeatedly spoke about how practicing a skill in a simulated environment improved patient safety.

To protect patient safety, many clinical agencies are restricting the types of skills nursing students can perform. For example, students are not allowed to give intravenous push medications at the facility where the study was conducted. Some participants were so restricted on the skills they could perform in clinical environments that, without simulation, their first exposure to these skills would have been on the job after they are licensed and working. This situation requires nurse educators to think of creative ways to ensure that students are exposed to the skills they will need to perform safely in order to do their jobs. The implications of not practicing these skills in a simulated environment could have a negative effect on patient safety and nurse competency. Participants appreciated the safety of the simulation environment. They

knew they could make mistakes during a simulation and those mistakes would be discussed so they could improve their techniques and approaches. For example, participants appreciated instructors using mistakes as a learning opportunity without the risk of patient harm.

### **Self-Confidence**

Several researchers concluded that the use of simulation increased self-confidence (Bearnson & Wiker, 2005; Cioffi, 2001; Sinclair & Ferguson, 2009). However, these studies focused on confidence building, self-efficacy, and the social aspects of learning, as they relate to enhanced skills and content mastery. Blum et al. (2010) examined the impact high-fidelity simulation had on students' self-confidence and clinical competence.

In the current study, participants reported having more confidence in their assessment and basic nursing skills because of their simulation experiences. One participant noted that simulation increased her self-confidence by allowing her to become more familiar with equipment and helping her to understand how a procedure was supposed to be done. Being able to remember how a skill was done in simulation as they performed it on a patient also increased participant confidence.

### **Satisfaction**

Several studies have focused on student satisfaction with the simulation experience (Bremner et al., 2006; Schoening et al., 2006). Other research concentrated on student satisfaction after simulating different specialty areas including critical care (Feingold et al., 2004; Henneman & Cunningham, 2005), obstetrics (Robertson, 2006), and surgical scenarios (Bearnson & Wiker, 2005). Study participants seemed satisfied with their simulation experiences because they gave them confidence and experience that would not have received without simulation. However, one participant suggested being able to practice each skill 2 to 3 times on

both a male and female mannequin. She did not have the opportunity to put a catheter in a male until she was practicing as a newly licensed registered nurse. She wished “we had more time to practice things [skills], so we could get more experience under our belts”.

The newly licensed registered nurses reported that the realism of the simulation is important and adds to an exercise’s effectiveness. The more realistic the simulation scenario, the more it was valued by participants. Because the mannequins that talked to the nursing students seemed more like “real patients,” they were more highly valued by participants. This is congruent with Fletcher (2005) who noted that simulations that are able to mimic the clinical environment realistically give students consistent and comparable experiences, increase patient safety, promote active learning, allow immediate error recognition and correction, and simulate specific patient scenarios.

### **Communication**

According to Benner (1982), the ability to communicate and collaborate with healthcare team members is a characteristic of an expert nurse. Several of the code simulations allowed the participants to practice communicating and collaborating with other healthcare team members. During the codes, nursing students and instructors play different roles such as charge nurse, scribe, healthcare provider, or respiratory therapist. Such simulations allow students to practice communicating with other team members, something they are not likely to do in the clinical setting as a student. According Bambini, Washburn, and Perkins (2009) simulation experiences helped students improve both verbal and nonverbal communication with patients and families.

Participants reported that being graded on their performance made the simulation experience more memorable. One participant said that being tested on her performance in high-pressure situation helped prepare her for the real thing. Another participant articulated that she

was able to relax during the experience because it wasn't a live person but there was still pressure "to do the right thing" because she was being graded on it [her performance during the simulation]. Considering these results, educators might consider adding more opportunities to evaluate student performance during simulation.

They also reported feeling intimidated and distracted when too many people were present during a simulation scenario. Participants did not like having observers and felt that simulations would have been more valuable if fewer people were involved. Such feelings are common, according to Henneman and Cunningham (2005), whose participants were concerned about and distracted by non-participating observers. Although having active observers can be important, educators should be mindful about the number of observers and where they are placed. Limiting observers can be challenging to overcrowded nursing schools that try to maximize the number of students exposed to each simulated experience.

Participants appreciated the experience of simulation and wanted more exposure to it. They wished they had had more time and supplies to practice, as well as the opportunity to practice other clinical scenarios they had not been exposed to, such as childbirth. Students' desire for more simulation is one factor driving the increased use of simulation in nursing schools across the country.

### **Increasing Use of Simulation**

According to the literature, simulation use is increasing in nursing education and, in some cases, is replacing clinical time (Nehring, 2008). The multifaceted role of the nurse requires advanced levels of critical thinking and clinical judgment skills than in the past. Nursing schools should conform to this notion and adopt new learning strategies, thus, facilitating critical thinking and professional competency. Simulation is a means to provide facilitation of both

critical thinking and clinical judgement. Participants in this study were not exposed to many of the clinical skills they needed before entering professional practice. In fact, if it had not been for simulation, many participants would not have been able to practice certain skills at all. Therefore, their first experience performing a skill would have been on a patient. Despite this, hospitals expect new graduate nurses to have the experience needed to perform these skills right away upon employment.

Securing clinical placement for nursing students is becoming more and more difficult due to the current nursing shortage, tighter hospital regulations, and an increasing number of nursing programs and students. Because simulation can replace clinical time, it is imperative that nurse educators embrace simulation and use it to its fullest potential (Sportsman, Puetz, & Billings, 2008). This involves using simulation to foster student learning that transfers to practice. Without access to simulation, many participants would not have gotten to experience a number of patient scenarios. Even though these scenarios varied from what participants experienced in the hospital, they were similar enough to give them some familiarity with actual hospital nursing care.

In particular, the newly licensed registered nurses valued two simulation scenario components: a collaborative, group-learning effort in which students were assigned specific roles and objectives by their instructor. These components are supported by other research. A study by Klein and Doran (1999) found several benefits of group learning including the sharing of different ideas and perspectives, bringing course content to life without the stress of involving real patients, and increasing student confidence by providing critical thinking and decision-making opportunities within groups. According to the recommended best practice standards offered by the International Nursing Association for Clinical Simulation and Learning

(INACSL), specific participant objectives are essential for ensuring that the outcomes for a simulation-based learning experience have been achieved and therefore should be made clear before the simulation experience begins (Lioce et al., 2013). Scenarios that included the two key elements of group learning and specific individual tasks/objectives were preferred by newly licensed nurses. One participant stated the scenario gave her a sense of what the situation might actually be like. Another participant claimed it showed her how things worked the real world without an instructor standing by to step in.

Repetition was reported as the most valuable component of simulation. Participants said the repetitive exposure to scenarios assisted in knowledge retention. Two participants reported a three-part process in which they performed a scenario, discussed what went well and what did not during a debriefing session, and then repeated the scenario later in the semester. Both participants found much value in this process and felt a sense of accomplishment with their improved performance in the second scenario. This finding is congruent with the active experimentation phase of Kolb's model. Using this three-part process (participating in the scenario, debriefing, then repeating the scenario) could help students adopt new concepts to make decisions and solve problems, thus enhancing awareness of their current practice. The literature also supports this process as it shows real learning often occurs during debriefing. In contrast to these findings, one participant reported that debriefing was not beneficial and did not enhance the simulation experience.

### **Abstract Conceptualization**

Kolb et al. (2001) asserted that abstract conceptualization occurs when students' "perceive, grasp, or take hold of new information through symbolic representation or abstract conceptualization—thinking about, analyzing, or systematically planning, rather than using

sensation as a guide” (p. 4). In simulation, abstract conceptualization takes place after the debriefing process. Two participants mentioned the debriefing process during their interviews. According to Decker et al., (2013) who wrote the standard for best practices for INACSL, “all simulation-based learning experiences should include a planned debriefing session aimed toward promoting reflective thinking. Learning is dependent on the integration of experience and reflection. Reflection is defined as the conscious consideration of the meaning and implication of an action, which includes the assimilation of knowledge, skills, and attitudes with pre-existing knowledge” (p. S26). These findings encourage nurse educators to include debriefing when planning and implementing simulation.

### **Active Experimentation**

Once abstract conceptualization occurs, learners add their own thoughts and ideas to the abstract conceptualizations, as well as other relevant theoretical constructs. This process guides student’s decisions and actions that become their new concrete experiences, beginning a new cycle in the experiential learning process. Two of the 10 participants performed a simulation scenario, watched the scenario on video, and participated in a debriefing about the experience before the scenario was repeated. One of these participants was gratified watching her progression during this process. The other participant felt her simulation experience gave her insight into what the situation would be like if it occurred in the hospital setting. Therefore, the researchers’ recommendation is to repeat the scenario so that that active experimentation can occur. According to Lisko and O’Dell (2010) all stages of the Kolb’s experiential learning theory must be experienced for learning to be effective. However, the researchers emphasize most learners do not use all stages equally, preferring to concentrate on one or two of them.

### **Theme 3 – Simulation versus “Real Life”**

The third theme was simulation versus “real life.” Although simulation experiences were made as realistic as possible, it was evident that they were distinctly different from caring for actual patients. Many participants described the differences between simulation (practicing on a “fake person”) and real life (caring for a “real person”). The subthemes identified in theme three were real person vs. fake person, safe environment, and evaluation.

Participants reported that a scenario’s level of realism is important and often compared simulation with “real life.” Participants reported some skills were easier to perform on a mannequin and some were easier to perform on a real person. One participant said that, while simulation was somewhat helpful, it was not as beneficial as working on a real patient. Another participant claimed that certain skills such as inserting intravenous lines were much harder on a “fake” person. One participant described being able to relax a little more during the simulation experience because it wasn’t a living, breathing person.

Participants reported that they often could not perform skills in the clinical setting because there were too many students trying to learn from one instructor and nurses who were busy caring for patients. Therefore, students were unable to practice many clinical skills during nursing school. Several participants were only exposed to a skill before graduating their program through simulation. One participant reflected that simulation was helpful to practice without the worry of accidentally harming a patient. Participant 5 stated, “you don’t want your first time doing something when you have your license and you are at work and you are practicing on a live patient”. Another participant described the simulation experience as a safe environment. They mentioned terms like “liability” when discussing real patients. One participant articulated that making a mistake with a real live patient could cause a fatality. In today’s litigious society, this is



a very important factor when considering the new graduate nurse and patient safety. One of a nurse's major responsibilities is to provide safe and effective patient care. It is also imperative that nursing students realize that as professionals they will be accountable for patients' lives.

In relation to Kolb's theory, the experience of these participants may differ because of how they viewed the "real person" or "fake person". This may cause them to think about an experience in a different way. According to Berragan (2011), the closer the simulation mimics a real situation the smoother the transition for students when the situation is faced in the clinical setting. Also, according to Bambini, Washburn, and Perkins (2009), simulation activities with a "fake person" increases the self-confidence and psychomotor skills in nursing students caring for live patients showing support for the use of clinical simulations in preparation for clinical experiences in the real world.

### **Concerns about Simulation**

In the discussion, the value of simulation was clearly identified however, there were areas of concern that were raised. 1 participant in particular did not value their experience with simulation because it was unrealistic to her. Participant 9 stated, "I am quiet and I don't like talking to the dummy". She didn't think simulation helped her transition to professional practice. IN fact, she felt her program spent too much time with simulation and not enough time in the clinical setting. She felt the only realistic skill she performed on a mannequin was an injection. However, this same participant experienced simulation once she was hired and felt that this scenario [code blue] helped her better understand what this situation may actually be like if she experienced it as a newly licensed registered nurse. She also felt this simulation was realistic. Therefore, while the participant felt simulation wasn't valuable to learn skills, she did find value

in the simulation scenario. Again, this confirms the importance of how the simulation is conducted and the realism of the scenario.

#### **Theme 4 – Simulation and Preparation for Practice**

The fourth theme identified was simulation and preparation for practice. Although simulation experiences were described as being different from real clinical experiences, nine of the 10 participants found simulation valuable in preparing them for professional practice. One of the most remarkable findings of this study was the confidence that participants described because of the experiences they had with simulation. Simulation activities gave the participants opportunities to learn and apply knowledge in a safe environment. This exposure to different skills and situations, even in a non-clinical setting, seemed to boost participants' confidence. Another participant stated, "Practicing skills helped me with my job." Theme four subthemes were expectations, confidence, and practice.

Participants valued the use of simulation in their nursing program in preparing them for practice. There seems to be a marked discrepancy in what students are taught in nursing school, and what employers expect them to know (Hickey, 2009). Participant 1 stated, "I feel like when you start out on the floor you were taught everything in nursing school so when you go to do something they [the employer] just assume you have done it." One way to decrease this discrepancy is through use of simulation. Simulation gives nursing students more experience with skills and patient situations and can increase the competency of a newly licensed graduate nurse. Simulation also gives students exposure to high-risk, low-frequency patient events rarely encountered in the traditional clinical setting, such as a "code blue" in which patient has gone into cardiac or respiratory arrest. When one participant had to perform a skill at work, she remembered doing it in simulation and recalled the steps she needed to perform. Several

participants mentioned how simulation helped build their confidence. Participants reported that simulation helped build their confidence as nurses, which helped them feel more comfortable working with patients. One participant said the main benefit of simulation for her was confidence building. This participant explained that such confidence building helped her transition to professional practice.

Increased competence helps newly licensed graduate nurses increase their skills and content mastery, which can ultimately improve patient care and safety. Additionally, participants that had experienced a real code in practice felt they knew more than they would have without their simulated experiences. After reflecting on her clinical code experience, one participant said that, even though the roles were different (they were not all played by students with an instructor directing them), the experience was very similar to the one created in the simulation lab. Therefore, as with Theme 3 both abstract conceptualization and active experimentation were important concepts in this theme. According to Bambini, Washburn, & Perkins (2009) who examined the usefulness of simulation in improving the clinical skills of nursing students, simulation increases students' self-efficacy in their ability to perform nursing skills.

### **Summary**

The study was guided by two research questions: (1) How the newly licensed registered nurses valued their previous experience with simulation in their current practice as a new graduate nurse and (2) How did the newly licensed registered nurses describe their experience using simulation in their formal education? With respect to the first question, the participants of the study valued the use of simulation in their nursing program in preparing them for professional practice. Furthermore, the newly licensed registered nurses who were involved in

scenarios valued two simulation scenario components: a collaborative, group-learning effort in which students were assigned specific roles and objectives by their instructor.

With respect to the second question, how did the newly licensed registered nurses describe their experience using simulation in their formal education? all 10 participants reported using some type of simulation in their formal nursing education. The subthemes identified in Theme I were skills lab, patient care scenarios, debriefing, program timing, and hospital versus nursing school simulation. Nursing schools in the Southeastern U.S. are using simulation in different ways. However, all of them use simulation to help train graduates to perform some of the technical skills they need for professional practice.

### **Recommendations for Using Simulated Learning**

Nursing programs and educators should—to the extent resources allow—adopt several simulation practices to better prepare nursing for practice. These practices are as follows:

- assign specific roles and objectives for each exercise,
- opt for high-fidelity equipment,
- use realistic, complex scenarios,
- plan scenarios that encourage teamwork and collaboration,
- include a debriefing component,
- incorporate evaluation,
- limit the number of observers, and
- allow students to repeat scenarios as many times as possible.

Educators also should be familiar with the best practices set forth by INACSL (Lioce, 2013) to ensure continuity in simulated education.

## **Recommendations for Future Research**

Several gaps in the literature about this topic need to be addressed. These areas include the transferability of knowledge and competence from a simulated environment to a clinical situation to a workplace setting, the use of simulation to enhance critical thinking and clinical judgement in the newly graduated nurse, and simulation's effectiveness for different types of learners. Furthermore, the effectiveness of the simulation experience should be examined related to how it is facilitated. There are best practices set forth by INACSL but are educators using these best practices and how will this affect the learning that occurs?

Qualitative and quantitative studies should be conducted to examine skill acquisition and competence in the simulation laboratory and in the clinical setting. Additionally, there needs to be more research documenting the effectiveness of simulation as a method of teaching clinical skills, critical thinking, and clinical judgement.

There also is a lack of evidence-based research and supporting theory in studies examining simulation as a teaching method. Most such studies examine low-fidelity forms of simulation. The higher fidelity the simulation, the more realistic the scenario seems to students, thus giving nursing students insight into what a clinical situation might actually be like. Therefore, more studies should be conducted using high-fidelity simulation and its implications for practice. Studies that focus on high-fidelity simulation should examine how nurses deal with similar situations in the workplace. Such research would help nurse educators and hospital educators design simulations to improve patient safety. In addition, more studies are needed to examine simulation's utilization and effectiveness to allow educators to ensure they are taking full advantage of this teaching tool.

While research has shown that simulation increases students' self-confidence, studies are needed to determine which aspects of the simulated learning experience affect self-confidence and how they do so. Nurse educators could use such research to build confidence in insecure nursing students before they enter the clinical setting. Similarly, studies documenting the best methods for teaching effective communication could improve these skills in the workplace.

A study similar to the current study should be conducted on a larger scale in different areas of the country to see if there is a difference in simulation use by nursing school size or location. This would help nurse researchers better understand the use of simulation in other settings. Using a quantitative research methodology would allow for a larger sample size that might increase the ability to generalize results to a larger population. Finally, future studies should examine the proficiency of facilitators as well as how simulation is being conducted. Studies also should be conducted to determine if nursing programs are implementing INACSL best practices for simulated learning and, if so, what types of outcomes are being achieved.

Studies examining students' transition from nursing school to professional practice could help hospitals and colleges work together to train more competent nurses and increase patient safety. In order to bring value to simulation as a teaching methodology, more research needs to be conducted that relates simulation to practice and patient safety. Researchers also should examine the use of simulation to improve or maintain competency levels in experienced nurses as new procedures and technologies are added to practice.

More simulation studies should assess the social aspect of learning and how it affects nursing students. Such studies could have students experience simulations exercises in high-risk, highly specialized instead of in traditional clinical learning settings to determine if there is a significant difference in performance and critical thinking when students are faced with the same

situation in the workplace. Furthermore, these studies could determine to what extent performance in a simulated environment transfers to the workplace.

Finally, nursing researchers could compare students who are in traditional clinical education to those exposed to simulation to determine if there is any difference in skill performance, critical thinking, and NCLEX pass rates and performance at one year post graduation.

### **Conclusion**

The purpose of this study was to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. This study showed that simulation is being used in nursing programs, but in different ways. For the most part, the newly licensed graduate nurses were satisfied with their simulation experiences. They were often able to reflect on their experiences, which helped them transition to professional practice. Even though high-fidelity simulations differ from working with real patients, participants appreciated the familiarity such simulations gave them for possible patient care scenarios. Simulation also was shown to increase skill exposure and confidence.

With recent and continuing changes in healthcare and nursing education, it is fair to assume that simulation is not only here to stay but will its use will continue to increase. Nursing programs and educators need to know how best to use this teaching method to provide a safe, skilled nursing workforce by producing well-prepared graduates. The themes and recommendations that emerged from this study can act as a starting point in further researcher to exploit simulation to the fullest extent possible in preparing newly graduated nurses to transition to practice and make an impact on the health and wellbeing of their patients.

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## **Appendices**

## Appendix A

### Facility Letter of Agreement



Philip Haun  
Physicians Regional Medical Center  
900 E. Oak Hill Avenue  
Knoxville, TN 37917  
(865) 545-7441

May 30, 2014

RE: LETTER OF AGREEMENT

We are familiar with Carrie Bailey's research project entitled Newly Licensed Registered Nurses' Experiences with Clinical Simulation. I understand Physicians Regional Medical Center will be the site where data will be collected from participants during the Nurse Residency Program.

We understand that this research will be carried out following sound ethical principles, participants' involvement in this research study is strictly voluntary, and that confidentiality of participants' research data is ensured.

Therefore, I agree that Carrie Bailey's research project may be conducted at this organization.

With kindest regards,

A handwritten signature in black ink, appearing to read "P. Haun".

Philip J. Haun, MSN, MBA, RN, CEN, NE-BC  
Director, Inpatient Cardiac Services

## Appendix B

### Project Description for Participants and Informed Consent Form

**Title:** The Experiences of New Graduate Nurses with Simulation and Their Transition to the Workplace

#### **Who I am and why this research.**

The Principal Investigator, Carrie Bailey in Adult Learning at the University of Tennessee is researching how new graduate nurses value their previous experience with simulation in their current practice as a new graduate nurse and how do new graduate nurses describe their experience using simulation in their formal education.

New graduate nurses are invited to participate in this research by participating in an interview with the researcher allowing the researcher to observe and take notes during the interview. As noted in previous research simulation is a method used by educators to represent real situations that may be encountered in professional practice with actual patients.

The purpose of this study is to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. This study is intended to gain a better understanding of the role simulation has in the transition of the new graduate nurse to professional practice. Insight will be gained about the exposure of nursing students to simulation in their formal education, how simulation is being used, and the perceived value it has on the transition to professional practice for the new graduate nurse. Having this insight will allow nursing educators and hospital administrators to develop educational programs that better prepare new graduate nurses to transition into professional practice.

#### **What does your involvement entail?**

If you agree to take part in this study, after all of your questions have been answered, the researcher will ask you to sign an informed consent before the study begins. Your interview will be observed and digitally recorded. The interviews will then be transcribed by the researcher and analyzed by the researcher. Time requirements will vary from 30 to 60 minutes.

Your participation will begin only after you have reviewed and signed the Consent Form and received the answers to any questions you may have for the researcher. You may call the researcher or email the researcher to ask questions privately. Your participation in this study is voluntary. If you choose to participate or not to participate, your choice will not affect you or your employment in anyway. You may stop participation at any time for any reason.

#### **Risks to you during research.**

This research involves minimal risk. The researcher does not expect any harm to come to you because of your participation in this research. All transcribed interview data will be kept in a locked file cabinet in a locked office of the researcher. All electronic data will be password protected.

**Will you benefit from your participation?**

There are no direct benefits from participation in this research. Although you may benefit from participation because you will have the opportunity to reflect on your experience with simulation. Your depiction of your simulation experiences may help you better understand aspects of your education and transition to the workforce that you had not considered before. Although the findings cannot be generalized, a description of your experiences may benefit other nursing students and new graduates.

**Your participation is voluntary.**

Your participation in this study is voluntary you can withdraw from the study at any time) and will have no effect on your employment. You can contact the researcher via telephone or email with any initial questions about the study. All correspondence will be private. You can also email the researcher privately via telephone or email of your intent to participate or ask for any additional information about the study. You may stop participation at any time for any reason.

**All research remains confidential.**

All data materials remain confidential, and your name will not be attached to any data. Pseudonyms will be used for all people, proper nouns, and identifiable events. No references will be made which could link participants to the research. All data will be kept in a locked file cabinet in a locked office of the Principal Investigator. All electronic data will be password protected.

**Contact Information**

If you have questions at any time about the study or the procedures or you experience adverse effects as a result of participating in this study you may contact Carrie Bailey, at the University of Tennessee College of Nursing, Office 133 (865-974-7609) email bailey@utk.edu. If you have questions about your rights as a participant, contact the [Research Compliance Services section](#) of the Office of Research at (865) 974-3466.

**CONSENT**

I have read the above information, and I have received a copy of this form, and I agree to participate in this study.

Participant's signature \_\_\_\_\_ Date \_\_\_\_\_

Investigator's signature \_\_\_\_\_ Date \_\_\_\_\_

## Appendix C

### Interview Protocol

Interview # \_\_\_\_\_

Date \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

#### Introduction to participant

Hi, my name is Carrie Bailey, I am a Doctoral Student at the University of Tennessee, Knoxville. I am also a nurse educator and am trying to find out more about the use of simulation in nursing programs. I am going to ask you two questions, but I may ask more for clarification or to gain a better understanding of your answer. I will be video recording your answers and taking notes. Remember you can withdraw from this study at any time this study will not impact your employment in anyway. You have also been provided with my phone number (865)974-7609 and email address [bailey@utk.edu](mailto:bailey@utk.edu) so if you have any additional questions or concerns about the study you can call or email me at anytime. Are you ready to begin?

#### Research Questions

1. How do new graduate nurses value their previous experience with simulation in their current practice as a new graduate nurse?
2. How do new graduate nurses describe their experience using simulation in their formal education?

#### Follow up questions

1. Tell me more about ...
2. Let me understand you said "...” can you tell me more about this?
3. Can you be a little more specific about the situation or experience
4. What was your experience of ...

#### Conclusion

That will conclude our interview. Is there anything else you can think of that you would like to add? I would like the opportunity to meet with you again so we can go over the themes from your answers and make sure they are accurate to your experience. Would this be alright? Thank you so much for your participation in my study.

## Appendix D

### Information Sheet

#### **Who I am and why this research.**

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New graduate nurses are invited to participate in this research by participating in an interview with the researcher allowing the researcher to observe and take notes during the interview. As noted in previous research simulation is a method used by educators to represent real situations that may be encountered in professional practice with actual patients.

The purpose of this study is to understand how new graduate nurses perceive the value of simulation in making the transition into professional practice. This study is intended to gain a better understanding of the role simulation has in the transition of the new graduate nurse to professional practice. Insight will be gained about the exposure of nursing students to simulation in their formal education, how simulation is being used, and the perceived value it has on the transition to professional practice for the new graduate nurse. Having this insight will allow nursing educators and hospital administrators to develop educational programs that better prepare new graduate nurses to transition into professional practice.

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If you agree to take part in this study, after all of your questions have been answered, the researcher will ask you to sign an informed consent before the study begins. Your interview will be observed and digitally recorded. The interviews will then be transcribed by the researcher and analyzed by the researcher. Time requirements will vary from 30 to 60 minutes.

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#### **Risks to you during research.**

This research involves minimal risk. The researcher does not expect any harm to come to you because of your participation in this research. All transcribed interview data will be kept in a locked file cabinet in a locked office of the researcher. All electronic data will be password protected.

#### **Will you benefit from your participation?**

There are no direct benefits from participation in this research. Although you may benefit from

participation because you will have the opportunity to reflect on your experience with simulation. Your depiction of your simulation experiences may help you better understand aspects of your education and transition to the workforce that you had not considered before. Although the findings cannot be generalized, a description of your experiences may benefit other nursing students and new graduates.

**Your participation is voluntary.**

Your participation in this study is voluntary you can withdraw from the study at any time) and will have no effect on your employment. You can contact the researcher via telephone or email with any initial questions about the study. All correspondence will be private. You can also email the researcher privately via telephone or email of your intent to participate or ask for any additional information about the study. You may stop participation at any time for any reason.

**All research remains confidential.**

All data materials remain confidential, and your name will not be attached to any data. Pseudonyms will be used for all people, proper nouns, and identifiable events. No references will be made which could link participants to the research. All data will be kept in a locked file cabinet in a locked office of the Principal Investigator. All electronic data will be password protected.

**Contact Information**

If you have questions at any time about the study or the procedures or you experience adverse effects as a result of participating in this study you may contact Carrie Bailey, at the University of Tennessee College of Nursing, Office 133 (865-974-7609), email [bailey@utk.edu](mailto:bailey@utk.edu). If you have questions about your rights as a participant, contact the [Research Compliance Services section](#) of the Office of Research at (865) 974-3466.



## Appendix E

### Interview Guide

Interview # \_\_\_\_\_

Date \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

The interview protocol in Appendix C was information for the participants. This appendix has the questions written as they were asked during the interview.

#### Introduction to participant

Hi, my name is Carrie Bailey, I am a Doctoral Student at the University of Tennessee, Knoxville. I am also a nurse educator and am trying to find out more about the use of simulation in nursing programs. I am going to ask you two questions, but I may ask more for clarification or to gain a better understanding of your answer. I will be video recording your answers and taking notes. Remember you can withdraw from this study at any time this study will not impact your employment in anyway. You have also been provided with my phone number (865)974-7609 and email address [bailey@utk.edu](mailto:bailey@utk.edu) so if you have any additional questions or concerns about the study you can call or email me at anytime. Are you ready to begin?

#### Research Questions

3. How do you value your previous experience with simulation in your current practice as a new graduate nurse?
4. How do you describe your experience using simulation in your formal education?

#### Follow up questions (as needed)

5. Tell me more about ...
6. Let me understand you said "...” can you tell me more about this?
7. Can you be a little more specific about the situation or experience
8. What was your experience of ...

#### Conclusion

That will conclude our interview. Is there anything else you can think of that you would like to add? I would like the opportunity to meet with you again so we can go over the themes from your answers and make sure they are accurate to your experience. Would this be alright? Thank you so much for your participation in my study.

## **Vita**

Carrie Bailey was born in Columbus Ohio to Stan and Nancy Jo Forsyth. She currently lives in Knoxville, Tennessee. She is married to Christopher Michael Bailey and has four children: Courtney Jo, Ty, Maggie, and Lauren. Ms. Bailey graduated from Karns High School in Knoxville, Tennessee. She received her Bachelors of Science degree in Biology and Psychology at the University of Tennessee in Chattanooga. She then received her Master's Degree and Post Masters degrees in Nursing and Homeland Security Nursing, respectively from the University of Tennessee, Knoxville. She is currently seeking her PhD in Educational Psychology and Counseling with a concentration in Adult Education.