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Evaluation of Caring Behaviors in High-Fidelity Simulation Following a Caring Concept Educational Intervention

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EVALUATION OF CARING BEHAVIORS IN HIGH-FIDELITY SIMULATION FOLLOWING A CARING CONCEPT EDUCATIONAL INTERVENTION

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by

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The dissertation committee of the Barbara H. Hagan School of Nursing and Health Sciences has examined the dissertation titled

EVALUATION OF CARING BEHAVIORS IN HIGH-FIDELITY SIMULATION FOLLOWING A CARING CONCEPT EDUCATIONAL INTERVENTION

Presented by Debra McWilliams

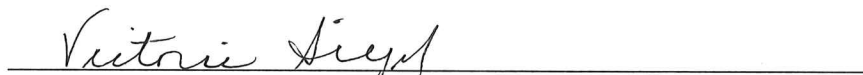A candidate for the degree of Doctor of Philosophy

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ABSTRACT

Background. Simulation has created a new paradigm in nursing education. Behaviors that demonstrate caring are important aspects of quality nursing practice. Nursing education needs to integrate opportunities to teach caring, and simulation is an ideal environment to do this. Faculty must assist nursing students to establish competence in psychomotor, cognitive, and the affective domains of learning. Many of the widely used, standardized scenarios in simulation predominantly focus on critical-thinking skills while marginalizing the demonstration of caring behaviors.

Purpose. The purpose of this quantitative study was to examine the effect of a caring concept educational intervention (CCEI) in students' self-reported confidence and demonstration of caring behaviors and their perception of the impact of the CCEI on their practice.

Method. The design was a quasi-experimental, comparative posttest design with a qualitative component. A convenience sample of 40 senior undergraduate nursing students was divided equally into either an experimental or control group in a non-random manner. The experimental group completed the educational intervention during prebriefing. Following the simulation session, students answered demographic and open-ended questions and the Caring Efficacy Scale-Simulation Student Version items electronically. Two faculty observers scored students' demonstration of caring behaviors with the Caring Efficacy Scale-Simulation Faculty Version after viewing the simulation session recordings.

Results. Independent sample t-tests were used to compare the student scores and faculty ratings between the experimental and control groups. No significant differences were noted between the two groups. Analyses conducted between demographic characteristics and students' caring

efficacy scores did not yield any significant findings. Qualitative analysis revealed that students perceived the CCEI had a positive impact on ability to demonstrate caring behaviors.

Conclusion. These findings demonstrate a benefit to incorporating the caring concept in simulation for prelicensure nursing students. A greater emphasis on caring in nursing education can promote the shift to a more holistic, patient-centered focus and develop a more compassionate nursing workforce.

DEDICATION

To my husband Dan-I cannot express in words the immense role you had in making my dream a reality. You have been my rock and anchor- providing unwavering support, strength, and love which sustained me through the challenges and difficult moments during this journey. I love you, and never could I have done this without you by my side.

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Erin- You are my sunshine. Your love, listening ear and witty humor helped alleviate some difficult moments. I love you bud!
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Tara-Queen-You have filled my life with fun and love, and you have shown me how grit knows know limits. I love my child.
My Danny Boy-You have brought so much joy in my life, and I am so grateful for all of the pillows you carried to my chair- you are my best boy- love you from coast to coast.

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CHAPTER 1: INTRODUCTION

Nursing academia is tasked with educating and socializing the next generation of students for professional nursing practice to meet the needs of our contemporary and global societies. Students will be entering a dynamic healthcare environment in which they will need to be competent critical thinkers and deliverers of holistic nursing care. However, technology and the demands of the current healthcare setting have presented challenges for nurses/nursing students to create, explore and embrace interpersonal connections with their patients. This, in turn, can impact the expression of kindness and concern for patients, which is the essence of caring and vital to the work of nurses. Faculty must assist nursing students to establish their identities within not only the psychomotor and cognitive domains of learning but the affective domain as well (Bergen & Barber, 2019).

Simulation has become an essential pedagogy, complementing, and sometimes replacing, hands-on, in-hospital clinical rotations in undergraduate nursing education. An integrative literature review conducted by Dileone et al. (2020) suggested that students need to be prepared for simulated care as they are for actual, clinical-based care. The authors of this review concluded that nurse educators should ensure a standardized, well-designed prebriefing process that will provide a foundation for students. The Healthcare Simulation Standards of Best Practice™ Prebriefing: Preparation and Briefing outlines evidence-based criteria that will accomplish that, if followed, will promote effective prebriefing (McDermott et al., 2021). Caring is an essential attribute of nursing, and nurse educators can include a caring framework as part of a preparatory strategy prior to simulation-based learning experiences.

Caring, a defining concept within the art of nursing, can be made manifest in practice by nurses when they blend their actions with caring in a patient situation (Henry, 2018; Sitzman &Watson, 2018). It is important for nurse scientists to investigate the caring phenomena to find out which approach is

most effective for professional socialization in nursing. Caring consciousness leads to nurses' presence and increased ability to demonstrate caring behaviors with those they serve, which can enhance the quality of nursing care. Since caring is at the core of the nursing profession, it should be centrally positioned in the educational setting (Cara et al., 2020). The inclusion of caring concepts in preparatory simulation activities can aid the learner to acquire and translate caring behaviors in their simulation-based learning experience (SBLE) and ultimately in practice settings. High-quality and inquiry-based educational programming in nursing humanities, beyond the confines of the classroom, will provide a qualitatively robust approach to enhance person-centered care competencies of future nurses (Lim & Marsaglia, 2018). As caring is a foundational value for nursing, there is a need to develop effective teaching strategies that will help nursing students explore, grow, and apply compassionate approaches to their clinical practice, lest caring gets lost to the ever-increasing demands of healthcare. Henry (2018) states that simulation education offers opportunities to implement learning objectives that link the art of nursing and aesthetic knowledge into clinical scenarios. Experiential learning activities can be effective, engaging, and impactful by bridging caring theory to practice settings (Rossillo et al., 2020).

Background

In recent years, simulation has created a new paradigm in nursing education. There has been an increased interest and investment in the use of simulation for the purposes of educating and socializing the next generation of nurses. SBLE have been integrated into nursing curricula as a means of providing structured activities to replicate healthcare situations that are encountered in real clinical practice settings. SBLEs in nursing education create immersive, interactive, and safe learning environments where students can develop, practice and enhance their knowledge, skills and attitudes that will equip them for future practice (Loice et al., 2020). As outlined in the American Association of Colleges of Nursing Essentials (2021), clinical experiences, inclusive of simulation experiences, offer learners safe

environments to explore and practice competencies within the psychomotor, cognitive, and affective domains. These opportunities are invaluable to prelicensure nursing students' professional development and socialization. Especially in prelicensure nursing curriculum, simulation is now being recognized as an effective method to practice not only technical skills but also affective skills (Bryant et al., 2020). In addition, the American Nurses Association's (2015) Code of Ethics establishes that the nurse must maintain a patient-centered focus and practice with compassion to optimize the health and well-being of patients. Simulation experiences have become essential adjuncts to clinical education. This innovative pedagogy bridges classroom theory and clinical with the use of valid and reliable, scripted scenarios designed to support the successful transition to practice.

The Healthcare Simulation Standards of Best Practice™ Prebriefing: Preparation and Briefing (McDermott et al., 2021) were a primary focus to this study. The Healthcare Simulation Standards of Best Practice™ (HSSOBP™) are living documents that have undergone multiple revisions since its introduction by the International Nursing Association for Clinical Simulation and Learning (INACSL) Standards Committee in 2011. The standards are an evidence-based framework designed to support, guide, and advance the science of simulation. *Prebriefing* has been a difficult concept to define. A concept analysis by Ludlow (2021) revealed that prebriefing should be "phase-based, inclusive of all the elements needed to prepare students for the simulation experience, and incorporate fundamental elements of learning theory, such as the domains of learning" (p. 26). HSSOBP™ (2021) states that prebriefing is a process requiring that students be prepared and briefed prior to their simulation-based learning experience as part of essential criteria for ensuring successful learner outcomes. Prelicensure nursing students especially might require additional assistance to support the understanding of concepts and content related to the scenario. McDermott (2020) identifies that although prebriefing research evidence has been emerging, how best to prepare learners remains controversial to date. A systematic

review by Tyerman et al. (2019) reported the effectiveness of presimulation activities on satisfaction and student learning outcomes. An activity, such as an educational module can be purposively designed to prepare nursing students for their simulation scenario.

Communication and Learner Engagement

It is important to look at the recent generations of digital natives and how they are learning, communicating, and interacting with others. Indeed, they have been brought up being exposed to new technologies and have adeptly learned how to maximize their use. Simulation is an ideal teaching tool for this generation of tech-savvy students. Stereotypical views of recent generations characterize them as technologically sophisticated multitaskers, capable of significant contributions to tomorrow's organizations, yet deficient in interpersonal skills (Hartman, 2011). New methods, such as high-fidelity simulation, have been aimed at enhancing knowledge acquisition by more actively involving students in their learning, thus achieving greater motivation and commitment (Chi & Wylie, 2014).

Pre-simulation activities are assigned prior to the simulation experience. These assignments need to be succinct, relevant, and engaging to contribute to the overall goals of the educational activity (Leigh & Steuben, 2018). Academicians, now more than ever, are requiring fluency in digital language. Viewing an educational digital innovation can be an engaging way for students to build a framework of knowledge, skills, and attitudes to utilize in the application of the caring concept. Gates and Youngberg-Campos (2020) state that providing educational offerings that allow participants to collaborate in real-life situations can be beneficial. A simulation-based learning experience with the proper preparation has the potential to serve as an effective and powerful educational tool.

Caring and Communication Concepts in Nursing

Caring behaviors can be observed and measured during a simulation-based experience. Establishing eye contact with the high-fidelity simulator, initiating therapeutic communication in

response to the patient's emotional needs, wiping perspiration off the manikin's forehead or tears from their eyes, patient education, and other demonstrations of caring gestures made by nursing students are some examples. Scenarios are predominantly designed to promote critical thinking and reasoning skills. Caring, as demonstrated by a nurse's giving of self, has not been properly emphasized as a key learning objective within a simulation-based curriculum. Bergen and Barber (2019) stated that there is limited evidence available to suggest that simulation provides opportunities for students to display and deliberately practice caring behaviors. Therefore, students should be provided with this essential content, in advance, to promote the application of caring behaviors during their simulation and in their clinical rotations and practice.

Statement of the Problem

The meaning and connectedness of the nursing students' caring behaviors within the SBLE are critical components of professional nursing practice that must be learned, practiced, and reinforced in undergraduate nursing education. Nursing education needs to be cognizant of the relevance and integration opportunities of teaching caring practices. The simulated clinical environment is an ideal setting that provides opportunities for nursing students to integrate caring behaviors. With primary learning objectives focused on critical thinking within simulated settings, caring behaviors and presence of interpersonal connections can be marginalized and overshadowed. According to Sitzman and Watson (2018), transpersonal caring relationships require the nurse to be authentic and present to self and others, with the intentionality of holistic care. Many of the published, widely used scenarios in prelicensure simulation-based education fail to incorporate the affective domain of learning. It is important to focus on caring behaviors, as this is an essential aspect of nursing that should be highlighted throughout the simulation-based experience. Completing an educational module based on Jean Watson's Theory of Human Caring (2008) prior to simulation can prepare undergraduate nursing students to apply and

demonstrate caring behaviors during their high-fidelity simulation with the potential of the learned behavior to carry over to their clinical practice as professional nurses.

Purpose of the Study

The purpose of this quantitative study was to test the effectiveness of a caring concept educational intervention (CCEI), grounded in Watson's Human Caring theoretical framework, on undergraduate nursing students' observed demonstration of caring behaviors and self-reported confidence in their ability to demonstrate caring. Also, relationships between students' personal characteristics, perceptions of psychological safety, and their report of caring efficacy were explored. An additional purpose was to explore how nursing students thought this SBLE would influence their clinical practice as students and their future professional role as a nurse.

Significance to Nursing

More recently, there has been increased attention on how students are being prepared prior to their simulation-based learning experience. Researchers have started to investigate how caring behaviors are demonstrated in simulation experiences. Tirado (2016) stated that continued emphasis should be placed on providing nursing students simulated nurse-patient situations to practice interpersonal communication and demonstrate nursing actions that resonate with caring behaviors. Due to the variability and availability of clinical sites in some nursing programs, nursing education may need to rely on teaching caring behaviors in simulation. Nursing students must be provided with an environment to explore, practice, and hone these essential attributes of the professional nurse. The inclusion of an educational module focused on caring may provide vital content to help prepare nursing students with the knowledge and ability to demonstrate caring behaviors.

Integrating how caring can be taught, communicated, and applied in a simulated environment is a topic worth researching. Dhalke and Stahlke (2017) suggested the concept of caring within nursing

textbooks and nursing education is ill-defined. These authors argued that the concept of caring is too vague and wrongly perpetuated in nursing curricula because they indicate caring lacks relevance for actual practice. They also went on to state that the constraints of healthcare institutions contribute to practicing nurses' difficulties in providing the holistic care they have been educated to provide. Research is needed to explore and support the integration of the concept of caring into nursing curriculum as an essential core concept of the nursing profession.

The phenomenon of caring is hard to capture empirically; nevertheless, this concept and its effects on health need to be better explicated by further research to provide new knowledge and insight (Sitzman & Watson, 2019). Scenarios with learning objectives inclusive of aesthetics, moral issues, and interpersonal communication would enable nursing students to explore meaning and connectedness to their simulated patients. There are intrinsic values that define the essence of nursing, which are sometimes underrecognized or underdeveloped in nursing education. Watson's Caritas Literacy can provide the framework for a simulation in which faculty can assist and support students on how to become caring nurses (Cara, et al., 2019). An introduction to the caring concept, in the form of an eBook, would be an innovative way to teach those special, distinct qualities that define the nursing profession. Students should be educated on what caring means, how to demonstrate caring behaviors, and given repeated opportunities to explore and practice these behaviors. Deliberate practice allows for consistent application of skills to yield a level of mastery for the learner. Ericsson (2008) has highlighted the benefits of deliberate practice to include opportunities to improve one's performance. Simulation centers and educators can provide a safe environment in which learners can practice their skills to improve their clinical knowledge, demonstration of skills and professional attitudes (Clapper & Kardong-Edgren, 2012; Rudolph et al., 2014).

Caring is a defining attribute of the nursing profession. How are fledgling nursing students supposed to adopt quintessential attributes if their education and professional role does not emphasize its importance? Undergraduate nursing education is responsible for preparing the future workforce by using best practices to ensure that new RNs are ready to uphold the outstanding reputation of caring for their patients. Salimi & Azimpour (2013) acknowledge that caring competencies need to be implemented and incorporated throughout classroom, practice, and simulation settings. Nurse scientists rely on evidence to shape and guide policies and protocols. As stated in the American Nurses Association (2018) Leadership Competency Model, the nursing profession must combine the science and the art of nursing when focusing on the promotion and maintenance of health and prevention of disease, illness, or disability within our society. Research that explores the affective domain of learning, through the measurement of manifestations of caring behaviors in a simulated setting, will yield rich data for nursing academia to either reject or support its use (Bergen & Barber, 2019). Caring occasions occur when nurses and patients interconnect, allowing for healing and loving consciousness to be present in that moment (Sitzman & Watson, 2018). Simulation allows students to apply their knowledge, skills, and attitudes in a safe environment. Many students can get drawn into the reality of the scenario which would be an ideal opportunity to practice caring behaviors. Their senses are engaged by the stimuli and interactions of the simulation scenario. They become cognitively involved and enact a caregiving role in an embedded psychological state of being, as if involved in a real patient care situation (Dunnington & Farmer, 2015). Healthcare simulation is currently incorporated into today's nursing curriculum, and educators must harness the benefits by also including caring concepts into this innovative, educational strategy.

Research Questions

The study is being designed to address the following research questions:

1. Is there a difference in faculty-observed demonstration of caring behaviors between the experimental group who receives a caring concept educational intervention based on Watson's Caritas Processes and Caritas Literacy and the control group that does not receive the intervention?

2. Is there a difference in students' self-efficacy reporting of their caring behaviors between the experimental group that receives a caring concept educational intervention based on Watson's Caritas Processes and Caritas Literacy and the control group that does not receive the intervention?

3. Is there a correlation between the faculty rater observed caring demonstration scores and the students' caring efficacy scores?

4. Is there a correlation between participants' perception of psychological safety and their reported self-efficacy with demonstration of caring behaviors?

5. What do students describe about how deliberate practicing of the caring concept within simulation-based experiences relates to their clinical practice as a nursing student and their future professional role as a nurse?

6. What do the students in the experimental group describe about the influence of the Caring Concept educational intervention on this simulation-based learning experience (SBLE)?

Operational Definitions and Measures

Coates (1997) created a Caring Efficacy Scale, which is a tool that can measure nurses' efficacy in establishing caring relationships in clinical settings. This valid and reliable tool includes a 30-item

self-reporting scale, as well as a 30-item preceptor/supervisor scale. Eggenberger et al. (2012) adapted

the Coates Caring Efficacy Scale for use in simulation. Their study found the Caring Efficacy Scale-

Simulation Student Version (CES-SSV) to have internal consistency and significantly correlated

interrater reliability. The faculty version of the Caring Efficacy Scale (CES-SFV) was also modified for

use in simulation and was the tool utilized by the faculty observers.

Persico (2017) developed the Psychological Safety visual analog scale (VAS). This tool

measured students' level of comfort with simulation-based learning experiences. The original VAS is

100mm in length with scores ranging from 1 to 10 within a 100mm range. Permission was granted to

use this tool. Because of the limited features of the electronic survey format for this researcher's study,

the VAS could not be implemented as it was originally designed. Campus labs provided the web-based

survey platform for the university where the research was conducted and did not have the ability for any

entries other than whole numbers. Students scored their perceptions of psychological safety by entering

a number ranging from 1-10, with 1 being the least safe to 10 being the safest.

Variables

Independent variable: Caring concept educational intervention

Dependent variables: Observed caring behaviors of undergraduate/pre-licensure nursing

students, nursing students self-reported caring efficacy, and nursing students reported perception

of psychological safety.

Definition of Terms

Caring

Caring, as defined by Watson, includes 10 caritas processes that underpin her theory on caring:

humanistic-altruistic system of value; faith-hope; sensitivity to self and others; helping-trusting, human

care relationships; expressing positive and negative feelings; creative problem-solving as a caring

process; transpersonal teaching-learning; supportive, protective, and/or corrective mental, physical, societal and spiritual environments; human needs assistance; and existential-phenomenological-spiritual forces (Watson, 2008).

Caring Behaviors

Caring behaviors are actions that are reflective of Watson's Caring theory. Specific components of her theory describe how the nurse can practice these behaviors by using authentic presence to connect to patients, establishing a trusting and caring relationship with patients, as well as demonstrate loving kindness and expression of feelings to co-create a healing environment (Watson, 2008). Operationally, caring behaviors were measured using the Coates' Caring Efficacy Scales, which include faculty and student versions. The student version was developed to assess conviction or belief in one's ability to express a caring orientation and develop caring relationships with patients (Sitzman & Watson, 2019). The demonstrated student caring behaviors were rated by two faculty observers using the faculty version of this instrument.

Caring Concept Educational Intervention (CCEI)

The Caring Concept Educational Intervention (CCEI) is an electronic book (eBook) that was designed by this researcher as an educational intervention for the purpose of providing undergraduate nursing students with an introduction to the caring concept. This eBook titled, Introduction to the Caring Concept Education Module, grounded in Dr. Jean Watson's Human Caring Theory, outlines why caring and caring behaviors should be emphasized as defining attributes of nursing, as well as provide examples as to how caring can be applied and demonstrated in a simulated environment.

Deliberate Practice in Simulation

"Deliberate Practice is defined as a systematically designed activity that has been created specifically to improve an individual's performance in a given domain" (Ericsson, Krampe, & Tesch-Romer, 1993, as cited in Loice et al., 2020, p. 13).

High-Fidelity Simulation

"In healthcare simulation, high-fidelity refers to simulation experiences that are extremely realistic and provide a high level of interactivity and realism for the learner (HSSOBP™, 2021). It can apply to any mode or method of simulation" (Loice et al., 2020, p. 21).

Prebriefing

An information or orientation session held prior to the start of a simulation activity in which instructions or preparatory information is given to the participants. The purpose of the prebriefing is to set the stage for a scenario and assist participants in achieving scenario objectives (Loice et al., 2020, p. 37).

The HSSOBP™ (2021) Prebriefing standard includes three criteria to address presimulation activities.

1. The simulationist should be knowledgeable about the scenario and competent in concepts related to prebriefing.

2. Prebriefing should be developed according to the purpose and learning objectives of the simulation-based experience.

3. The experience and knowledge level of the simulation learner should be considered when planning the prebriefing (McDermott et al., 2021), p. 9).

Psychological Safety

"A feeling (explicit or implicit) within a simulation-based activity that participants are comfortable participating, speaking up, sharing thoughts, and asking for help as needed without concern for retribution

or embarrassment (Lioce et al., 2020, p. 38). In this study, students reported a number to indicate their perceived level of psychological safety by having completed the Psychological Safety Visual Analog Scale (Persico, 2017).

Simulation Facilitator

"An individual who is involved in the implementation and/or delivery of simulation activities" (Loice et al., 2020, p. 18).

Simulation-based Learning Experience

"An array of structured activities that represent actual or potential situations in education and practice. These activities allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyze and respond to realistic situations in a simulated environment" (Goodall, Jensen, Pilcher, et al., 2012, as cited in Loice et al., 2020, p. 43).

Transpersonal Caring

"Transpersonal caring seeks to connect with and embrace the spirit or soul of the other through the processes of caring and healing and being in authentic relation, in the moment." (Watson's Caring Science Institute, (n.d.).

Conclusion

A well-designed prebriefing phase of the simulation-based learning experience, which structures preparation activities and makes expectations clear to learners, can help to reduce student anxiety, improve student performance, and enhance learning (Leigh & Steuben, 2018). Today, more than ever, education will require visionaries and innovators to create engaging, interactive environments for today's generation of learners. Simulation is an effective, experiential learning strategy. Limited evidence exists to support whether students feel prepared to demonstrate caring behaviors during their SBLE while managing their cognitive load and psychological safety. With this premise, educators must

provide relevant content that encompasses not only psychomotor and cognitive domains of learning but the affective domain as well. Prelicensure nursing programs should integrate caring concepts into simulation-based learning activities to assist nursing students to develop caring behaviors and caring efficacy before they enter the workforce as professional nurses. Research is necessary to identify effective methods of preparing prelicensure nursing students to explore caring behaviors not only during simulation activities but actual clinical practice as well.

CHAPTER 2: LITERATURE REVIEW

The concepts of *caring* and *simulation-based education* in prelicensure nursing curricula have been researched and reported in recent literature. The purpose of this chapter is to present a review of the literature that will provide an overview and support the relevance to the research that was conducted.

The first section describes the theoretical framework as it relates to the concept of transpersonal caring based on Jean Watson's Theory of Human Caring that underpin this study. The second section presents Kolb's Experiential Learning Model, which explains how SBLE benefit prelicensure nursing students. The third section reviews studies that report strategies to enhance caring behaviors in simulation-based education, with emphasis placed on highlighting studies that have identified gaps in simulation and caring. Last, the chapter concludes with a review of prebriefing and its importance for SBLE, as well as to provide relevance to this study.

Theoretical Frameworks

Jean Watson's Human Caring Theory

Dr. Jean Watson has had a profound impact on nursing education and practice. Her research has advanced our understanding of the caring phenomena. The theoretical framework of this study is based on Jean Watson's Theory of Human Caring. Jean Watson introduced her Human Caring Theory in her first book entitled *Nursing the Philosophy and Science in Caring* (1979). Her pivotal work has continued to evolve over many decades. With emphasis placed on caring and the nurse-patient relationship in healthcare, Dr. Watson has provided the nursing profession with a framework for practicing and teaching caring. Ten Caritas Processes were identified as factors which underpin her theory on human caring: humanistic-altruistic system of value; faith-hope; sensitivity to self and others; helping-trusting, human care relationships; expressing positive and negative feelings; creative problem-

solving as a caring process; transpersonal teaching-learning; supportive, protective, and/or corrective mental, physical, societal and spiritual environments; human needs assistance; and existential-phenomenological-spiritual forces (Watson, 2008). Watson (n.d.) described the history and evolution of the Theory of Human Caring as:

> The caring model or theory can also be considered a philosophical and moral/ethical foundation for professional nursing and part of the central focus for nursing at the disciplinary level. A model of caring includes a call for both art and science; it offers a framework that embraces and intersects with art, science, humanities, spirituality, and new dimensions of mindbodyspirit medicine and nursing evolving openly as central to human phenomena of nursing practice.

As defined by Watson (2012), transpersonal care and human caring relationships are multifaceted behaviors and responses between a nurse and patient. Consciousness, authentic presence, and intentionality are the precursors to establishing connections and transpersonal moments between nurses and their patients. Jean Watson (2002) defines intentionality as an awareness in the present moment which allows for the manifestation of caring-healing processes. Consciousness is a concept Watson (2002) described as a focus to always return one's caring intentions to the present moment. In addition, she also posits that through authentic presence the caregiver is honoring and connecting with the patient. Nursing is about meaningful patient encounters in which the nurse is perceptive, sensitive to, intuitive, and empathetic to all the nuances involved in meeting the patient where they are on the health-illness continuum. Watson's theory provides guidelines for holistic approaches to patient care. The more individual and authentic the feelings that the nurse conveys are, the more strongly the caring process affects the recipient (Watson, 2012). A transpersonal caring relationship must include the ability of the nurse to realize the humanistic components present in every patient encounter. Watson (2012) asserts that nursing as a caring science has been threatened and marginalized amongst the current demands of

technology, increased acuity, and pressures of the current healthcare system. The development of nurses' sense of self and sensitivity to others are essential attributes, which will enable them to identify and tend to the inner conditions of others. Dr. Watson's theory presents language, meaning and purpose which helps define the caring phenomena. Nursing education can adapt this framework to help guide nursing students to apply caring behaviors fostering a more holistic approach. Watson (2015) mentions that the theory lives in caring moments between nurses and their patients. Measuring the manifestations of caring is possible by observing when caregivers use eye contact, as culturally appropriate, are energetically comforting, and demonstrative of other caring behaviors.

Additionally, accurately detecting others' feelings and frames of references, being kind with intentional uses of loving touches, providing dignity, and radiating loving-heart presence, and believing your skills to be caring-healing acts make evident Watson's (2008) theory. Clark (2016) mentions in her examination of transpersonal psychology and Watson's Theory of Human Caring how clinical and simulation settings can create opportunities for students to learn and gain deeper knowledge of caring practices to meet caring competencies. This framework supports this researcher's interest in assisting nursing students to deliberately practice caring behaviors in high-fidelity simulation. Opportunities for caring moments can be created in a simulated environment. Watson's Theory of Human Caring is a well-established model in nursing education that provided focus and context for this research.

Kolb's Experiential Learning Theory

Simulation-based education is experiential learning. Simulation provides learners opportunities to immerse themselves in safe environments where they can actively participate and reflect on deliberately planned educational experiences. Kolb (1984) described a four-stage learning cycle consisting of a concrete experience, reflective observation, abstract conceptualization, and active experimentation. Kolb's Experiential Learning Theory also underpinned this research study as it provided a framework and accepted educational approach to this research study.

The first of the four stages of Kolb's learning cycle is the Concrete Experience. In simulation-based learning experiences, students are provided with actual hands-on experiences of providing care. SBLEs allow students to immerse themselves in simulated clinical settings and apply their knowledge and skills in patient scenarios. Because of the realistic patient care situation, they can experience the nuances and complexities of patient-centered care in a safe, controlled environment. As a result, students can internalize the experience through reflection. The Reflective Observation phase describes the moments when learners analyze what has happened. Post-simulation, participants are debriefed where they reflect on their experiences. Nursing students can reflect on what they observed, clinical judgments they themselves had made and how their decisions and actions affected patient outcomes. The reflective observation phase that happens during the debriefing allows for deeper understanding of their strengths as well as areas in need of improvement. HSSOBP™ (2021) The Debriefing Process criteria emphasizes that the debriefing must include the identification and resolution of gaps in knowledge, skills, attitudes, and communication. During the Abstract Conceptualization stage, learners are processing their SBLEs and making sense of the experiences by linking them to theories, concepts, or other acquired knowledge. It is important for learners to make sense of what happened. And lastly, once learners have had the chance to formulate their own concepts about the experience, they can

deliberately practice them in different settings, contexts, and situations. This part of the four-part cycle is the Active Experimentation stage.

Incorporating Kolb's Experiential Learning Theory into this study provided the additional framework needed for establishing a safe and controlled environment for this research. All nursing students explored the caring concept through the concrete experience of deliberately practicing caring behaviors, reflecting on their practice, and thereby were able to make sense of situations encountered in the simulation. This was all done with the intent to prepare them for real-world nursing challenges.

History of Simulation-Based Nursing Education

Educators and scholars have been exploring innovative strategies that go beyond the classroom when teaching psychomotor skills and clinical knowledge. Dr. Pamela Jeffries has been a pioneer in the field of nursing simulation education. Through her research and development of the National League for Nurses (NLN) Jeffries Simulation Theory (Jeffries, 2022), she has established a framework for best practices. Her research has significantly contributed to the advancement of nursing simulation education as an effective learning and teaching strategy. Since 2011, the International Nursing Association for Clinical Simulation and Learning (INACSL) organization has guided the integration of simulation education into nursing education, practice, and research by creating standards of best practice. The Healthcare Simulation Standards of Best Practice™ (2021) have since evolved and serve as living documents that provide evidence-based guidelines for integrating simulation education for the purposes of improving patient care outcomes. This research study underscores the importance of integrating the caring concept into undergraduate nursing curricula for the purpose of instilling essential knowledge, skills and attitudes that are integral to the nursing profession.

Providing experiential learning opportunities in clinical and skills labs are major strengths of nursing education (Benner, 2010). The experiential learning that simulation provides allows students the

environment to demonstrate, reflect and discuss their understanding and application of concepts learned or not learned. By bridging theory to practice, simulation-based education is the ideal setting for integrating psychomotor skills, cognitive learning and professional socialization, and formation (Benner, 2010). It is important to use experiences to further improve and develop one's personality, skills, and efficiency (Akella, 2010).

Specifically focusing on the affective domain, Inocian et al. (2022) suggested including caring concept-based content in nursing education, so students develop caring behaviors. Additionally, the authors suggested that leaders and educators should continue to design, implement, and evaluate simulation-based activities to promote the understanding, importance, and demonstration of caring behaviors.

Students can be evaluated in simulation experiences for their caring behaviors either by self-evaluation and/or by student and faculty observers. Karlsson and Pennbrant (2020) illuminate the theoretical perspective of caring as a phenomenon and ethical value in caring science. Caring, a defining attribute of the nursing profession, is deeply rooted in ethical values which guide nurses in their practice. At this level, nurses ideally provide patient-centered care that respects the patient's autonomy. Nurses take responsibility by acting in the best interest of their patients and promoting their well-being fairly and without discrimination. According to Karlsson and Pennbrant (2020), true caring is essential and is related to what the public sees as the good work that nurses do. Martensson et al. (2022) recognize that nurses be competent in how to demonstrate caring behaviors during patient encounters as these behaviors affect patients' perceptions and participation in their care. Simulation education has evolved into a high-quality, standardized, experiential learning method. In today's complex healthcare environment, faculty must provide students with clinical and/or simulation-based experiences that emphasize the importance of holistic care. Sitzman and Watson (2019) state that researching the concept

of caring does not ensure the adoption into one's practice. However, by capturing the phenomenon empirically, caring-focused research studies lead us closer to incorporating caring into the formula. With this premise, simulation champions and scholars have researched how to explicate the caring phenomenon in simulation.

Caring in Nursing Simulation

Many research studies focused on the concept of caring in nursing simulation have emerged in recent years. Researchers are examining methods to create simulation scenarios that mimic clinical environments where caring behaviors are essential. Various strategies have been explored and measured to evaluate nurses and nursing students' caring behaviors using simulation-based education. Helping students connect theoretical concepts of caring during application of caring behaviors in simulation challenges and promotes professional growth. However, within the evidence that has been generated, gaps exist which warrant further exploration.

Simulation-based education provides learners with opportunities to cultivate caring behaviors (Inocian et al., 2022; Tabudlo, 2021). Compassionate, patient-centered care has been a core value of the nursing profession. Several key elements are needed to guide nursing students toward that goal of being able to interact with their patients in that way. Tabudlo (2021) describes simulation as an educational approach, a vehicle for intentionally, or unintentionally, providing learners with opportunities to enhance caring behaviors. Faculty can use purposively designed scenarios to help students recognize and respond to patients' emotional and psychological needs. There are many factors to consider when designing activities that enhance students' development of caring behaviors. Integrative reviews by Tabudlo (2021) and Inocian et al. (2022) posited that the cultivation of caring behaviors is a shared role between faculty and students which can be delivered through role modeling, instruction, education, interactions, and socialization. Brewer et al. (2020) studied a program's effectiveness in changing

Caritas leadership, self-caring behaviors, and perceptions of participants' coworkers who completed the Caritas Coach Education Program. A pretest-post-descriptive design was used to evaluate changes in perceptions of these variables. This educational intervention yielded statistically significant changes in their self-caring scores. The authors state that there are gaps and barriers within organizations as well as educational curricular structures and pedagogies which interfere with translating and implementing theory-guided professional practice. They suggest that the program offers a start to transforming systems and organizations by integrating caritas practices (Brewer et al., 2020).

Although educators are tasked to explore alternative strategies for teaching, integrating, and practicing caring behaviors, effective methods can be found in simulation-based designs. Simulation-based learning experiences can help students develop caring skills and attitudes translatable to the real clinical setting.

Benefits of Integrating and Measuring Caring in Nursing Simulation

Scholarly research has yielded evidence that supports the synthesis of caring and simulation concepts into nursing curricula. Caring behaviors can be intentionally incorporated into simulation scenarios and measured. Sitzman and Watson (2019) stated that if more evidence can be generated by measuring the quality of caring, nurses or other healthcare practitioners will be better positioned to manifest or demonstrate caring behaviors with evidence-based knowledge. Tracking students' caring efficacy and demonstration of caring behaviors has been measured by valid and reliable tools.

Caring behaviors are indeed a critical aspect of nursing practice which can be measured through experiential learning (Bergen & Barber, 2019; Dunnington & Farmer, 2015; Eggenberger & Keller, 2008; Leach et al., 2021; Persaud & Thornton, 2018). There are unique opportunities to nurture undergraduate nursing students' understanding and demonstration of the caring concept by immersing them in a simulated environment to intentionally practice caring behaviors. Eggenberger and Keller

(2008) first suggested grounding nursing simulations in caring theory. They went on to further study how caring could be expressed and measured during a simulation-based experience, using an adapted version of Coates' Caring Efficacy Scale (CES). The CES was adapted for this study because of its strong link to caring concepts. The researchers posited that adding caring practice to a simulated environment yielded motivation for nursing students to engage in caring relationships with their patients (Eggenberger et al., 2012). The Caring Efficacy Scale-Simulation Student Version (CES-SSV) scale was shown to have excellent internal consistency with significance in interrater reliability when used in high-fidelity simulation. The Caring Efficacy Scale-Simulation Faculty Version (CES-SFV) was also adapted to correlate faculty rating of students' demonstration of caring efficacy. They asserted that the instrument shows promise and usage of the CES could provide evaluation data for tracking students' caring efficacy. It is imperative to analyze studies that investigate the relationship between caring efficacy, caring behaviors, and simulation-based education.

Bergen and Barber (2019) conducted a quantitative descriptive study to explore pre-licensure nursing students' perceptions towards demonstration of caring behaviors during SBLE. Students participated in three high-fidelity scenarios in which they were expected to respond appropriately during their SBLE as nurses. Students felt that they were able to actively listen to patients, verbally respond to an expressed concern, and treat patients with gentleness, sensitivity, kindness, reverence, or respect. Leach et al. (2021) also conducted a quantitative study to measure students' self-perceived caring behaviors after simulation. Pre and posttest measures showed statistically significant findings indicating that there was an increase in students' self-perceived caring behaviors after simulation. Simulation-based experiences are immersive and allow students the safe environment to deliberately practice caring for their patients.

It is important to note that simulation-based learning experiences are purposively developed, carefully planned, and facilitated to achieve learner objectives and outcomes (Watts et al., 2021). HSSOPB™ Simulation Design (2021) includes integral criteria necessary for relevant and educationally-sound simulation-based experiences. Learning objectives, level of the learner, available time, equipment and resources, desired learning outcomes and clinical significance are all important factors to consider when planning simulation experiences (Watts et al., 2021). Different types of scenarios are designed based on the desired level of realism, amongst other criteria. Where and how to measure caring concepts and behaviors are being researched and explored. Pai et al. (2020) studied the impact of an educational intervention on students' perceptions and expressions of caring behaviors over time. They designed an action program and measured self-learning effectiveness, self-reflection and insight, caring behavior, nursing competence, and professional socialization of novice nursing students over a period of six months. The longitudinal data analysis from the action series found that students significantly enhanced their caring behaviors, along with competence, learning effectiveness and professional socialization. Griffin et al. (2021) conducted an educational intervention developed to offer a deep exploration of Watson's Caring Science using Caritas Circles, which included intentional practices to pause, be present and find peace while caring for children at a pediatric hospital. Being present in this context means that nurses were engaged and focused in the moment when providing care to each of their patients. Quantitative and qualitative methods showed improvement in care providers' ability to care for themselves as they cared for sick children. Griffin et al. (2021) concluded that organizations must recognize the emotional burden and stresses that caregivers experience in hospital settings, and that hospitals must prioritize this type of experiential intervention to their employees so they can better care for themselves and their patients. Persaud and Thornton (2018) conducted a study that utilized standardized patients. Standardized patients are defined as trained individuals who

realistically portray a specific medical condition with a particular set of symptoms, characteristics, and responses (Loice et al., 2020). This program was grounded in caring science that provided students with a baseline knowledge of caring concepts. The research study was designed this way due to the sensitivity of the scenario content (intimate partner violence victim) in which a real patient created a more realistic experience as opposed to using a human patient simulator. All students self-reported that they were able to competently demonstrate caring behaviors. The researchers also included a debriefing tool inclusive of open-ended questions to collect students' responses through reflection. Three identified themes centered on compassion and authentic presence, having a nonjudgmental stance to empower and provide a safe space, and a need to get more personal with the difficult assessment questioning. Positive experiences expressed by the participants indicate that demonstration of caring behaviors can be an intentional focus of a simulation-based experience. These studies provide evidence that nursing students can develop and demonstrate caring behaviors utilizing various simulation designs, and that the simulated environment can be a safe, realistic setting for students to practice.

Challenges of Measuring Caring in Nursing Simulation

While there are many studies supporting the integration of simulation as a method to measure caring behaviors, limitations and challenges remain. Researchers recommend that clear objectives are needed to increase student awareness of the opportunities to demonstrate caring behaviors in a simulated environment (Bergen & Barber, 2019; Dunnington & Farmer, 2015; Eggenberger & Keller, 2008; Persaud & Thornton, 2018). It is important to address all domains of learning within the simulated environment which will ultimately assist in preparing students for the clinical setting and for their professional clinical roles. Dunnington and Farmer (2015) conducted a descriptive, correlational study to measure students' caring behaviors that occurred spontaneously during scenario-based simulations. They found that when the critical thinking and procedural demands were high, the students were not as

interactive with the manikin, exhibiting passive, low-frequency, caring behaviors. The authors suggested that high-fidelity simulation may not provide a space for the exploration of transpersonal caring, which they described as deeper levels of interaction and connection with real patients. They recommended that despite some of the barriers and limitations to high fidelity simulation using manikins, future designs of simulation scenarios should incorporate prompts, intentionality, and deliberate practice for caring behaviors. Ware and Schoenhofer (2017) reported that high-fidelity simulation presented challenges for students. Whereas the students acknowledged the safe learning environment that simulation had provided, some students found the experience weird and awkward. Some students found it difficult to role play, suspend disbelief and immerse themselves in the reality of the simulation-based experience.

After reviewing and appraising the current literature, improving the learner's experience in simulation can be accomplished through a structured and purposeful introduction to the simulation activity. Preparing and briefing play pivotal roles in nursing simulation. As in many of the aforementioned studies in recent literature, if adequately equipped, learners' engagement, motivation and overall learning outcomes are enhanced. In this research, the simulation environment was utilized for the purpose of influencing caring behaviors of undergraduate nursing students. These are all key factors supporting the integration of simulation education as a preparatory strategy in preparing future nurses.

Prebriefing

A construct that resides within prebriefing standards is situational awareness (Potter et al., 2021). When reviewing learning objectives before the simulation, the facilitator focuses the learner's attention on what they are supposed to achieve in the scenario cognitively, actively, and affectively. Prebriefing is a crucial phase that incorporates a structured approach which will only enhance learning during simulation-based experiences. By focusing the learner's attention on what they need to achieve,

prebriefing improves student's awareness and successful demonstration of the required skills (Ludlow, 2020; McDermott, 2020; Potter et al., 2022; Tyerman et al., 2019).

Prebriefing in simulation can be defined as a three-phase process of planning, briefing, and facilitating resulting in successful performances by learners during their SBLE (McDermott, 2016). McDermott (2020) developed the *Know: Do: Teach* model that includes planning, briefing, and facilitating and identified that such an active and engaged strategy may assist students' transition from theory to nursing practice. Prebriefing provides learners with essential information they will need to be prepared for their simulation. As simulation science evolved, the HSSOBP™: Prebriefing: Preparation and Briefing (McDermott et al., 2021) standard states that prebriefing include learners receiving pertinent information prior to the simulation to decrease cognitive load demands, promote psychological safety and augment the effectiveness of the experience. The prebriefing process plays an essential role in ensuring that learners are equipped to participate in their simulation-based learning activities. One criterion for ensuring that best practices are followed is the presence of a trained simulationist who is knowledgeable with HSSOBP™ (2021) and conducts a planned prebriefing session inclusive of SBLE learning objectives and debriefing afterwards. Secondly, specific learning objectives should be purposively outlined which helps learners understand the expectations of the SBLE. Lastly, the SBLE must be conducted at the appropriate level of the learner by providing them with information and context (McDermott et al., 2021).

Guidelines have been updated to include activities that prepare learners prior to the SBLE, as well as brief them with important ground rules for the simulation-based experience. Prebriefing is comprised of two distinct components: preparation and briefing. When learners are more prepared, they can better focus on learning, applying, and demonstrating their skills (Ludlow, 2020; McDermott, 2020; Rutherford-Hemming et al., 2019). Preparation materials and activities are identified and developed

after conducting a needs assessment. Activities and resources relevant to the scenario are designed and provided to support understanding of specific concepts and content. Preparation materials should be relevant to support the content and context of the SBLE that could include reviewing meds, health records, concept maps, case studies, and scenario-specific skills, assigned modules, to name some items. This essential preparation delivered prior to and/or on the day of the SBLE provides the learner with the opportunity to meet scenario objectives successfully (McDermott et al., 2021). Briefing before participating in a simulation-based learning experience helps to provides clarity of the simulated environment's patient, technology, equipment, logistics and roles. Rudolph et al. (2014) stated that educators must create a safe container for learning in simulation. Psychological safety is an important concept that must be present for learners to feel comfortable enough to take risks or make mistakes. Educators can create a conducive learning environment. The briefing is designed to enhance student engagement, increase psychological safety within the session and optimize learning outcomes.

Briefing incorporates the essential information that will be disseminated to the learner immediately prior to the SBLE. In addition, the HSSOBP™: Prebriefing: Preparation and Briefing (McDermott et al., 2021) endorse a structured, standardized process that provides all relevant SBLE information to the learner regarding expectations, agenda, and its logistics. Essential criteria should include the importance of adherence to professional standards and safety by orienting the learners to roles and expectations. Learners must be briefed on agenda items such as scenario length, debriefing expectations, times allotted for breaks and evaluation methods. In addition, standardized processes such as prerecorded or written materials can be utilized before the SBLE. A fiction contract is reviewed with learners prior. A fiction contract is an engagement and agreement between the instructor and learner where the learner is expected to suspend their disbelief in the simulated setting and treat the SBLE as being real (Loice et al., 2021).

HSSOBP™ Simulation Design (Watts et al., 2021), provides the framework inclusive of essential criteria to develop any simulation-based learning activity; this standard's criteria ensure the psychological safety of participants. For the purpose of this study, the researcher introduced the caring concept via an eBook to the experimental group as preparation materials developed for the purpose of enhancing participants' knowledge and readiness for successful demonstration of caring during the SBLE. There have been limited studies on the impact of prebriefing on nursing students' demonstration of caring during simulation, as well as how it might improve learner outcomes.

Prebriefing has been identified as a three-phase process inclusive of planning, briefing, and facilitating the simulation-based learning experience, but there has been inconsistency in the prebriefing process and terminology. Using a three-round modified Delphi design, McDermott (2016) conducted a study with Certified Healthcare Simulation Educator (CHSE) experts to find agreement on the prebriefing component of simulation-based education. Also reiterated was the gap noted in the literature regarding how best to prepare students for a simulation-based learning experience (SBLE). The Delphi study panelists agreed that prebriefing ensures learner success, noting that prebriefing sets up the learner for successful reflection and debriefing. A systematic review conducted by Tyerman et al. (2019) examined the effectiveness of presimulation preparations and briefing methods for healthcare professionals and students. After reviewing 21 studies, they concluded that appropriate presimulation activities, at the level of the learners, yielded positive outcomes and increased learner satisfaction. The researchers noted many implications for future research and suggested examining theoretical underpinnings and linkages to established frameworks, learner improvement in the areas of knowledge, confidence, clinical judgment and performance, and learner anxiety. Tyerman et al. (2019) stated there has been less reflection on presimulation activities and additional research is needed to standardize and operationalize preparatory activities.

These findings underscore the importance of this researcher's study, which is examining how best to prepare our learners to demonstrate caring behaviors during high-fidelity simulation activities. Helping students connect theoretical concepts of caring with deliberate practicing of caring behaviors can contribute positively to patient outcomes and overall quality of healthcare delivery. Also mentioned was the scarcity of qualitative data and how future research should explore additional contexts from the perspectives of participants. Including open-ended questions in this researcher's study enabled participants' input that provided valuable insights and recommendations about prebriefing.

Summary

Caring remains a challenging concept to measure empirically. Additional research is needed to standardize how to integrate caring concepts into nursing simulation education. Quantitative and qualitative studies have yielded deeper understanding of the concept, as well as outlining the importance of why caring should be kept in nursing education curricula. However, there is still much discussion on how to introduce caring concepts to students who attend a nursing program that is not grounded in caring theory. Additionally, previous studies have explored varying methods of including, measuring, and evaluating caring behaviors, and there has not been standardization on how, where, or if, caring could be incorporated into high-fidelity simulation.

In this study, the research was focused on how best to prepare students for high-fidelity simulation. Nursing students operationalized the caring concept and engaged in active experimentation by applying caring behaviors in that setting. Learners were able to hone their knowledge, skills and attitudes which going forward can lead to further reflection and learning opportunities. In today's complex healthcare environment, faculty must provide students with clinical and/or simulation-based experiences that emphasize the importance of holistic care.

Including an educational intervention will familiarize the students with key caring concepts based on Jean Watson's Caritas Processes and help ground their practice in caring theory in a simulated environment. The researcher in this study has developed an eBook that was given to the experimental group. Viewing an eBook, a digital innovation, may be a vital preparatory activity that assists students in translating and exhibiting deliberate caring behaviors during their simulation-based experience, as well as other professional clinical practice settings. The review of the literature supports the need for further exploration of application of caring behaviors and practice during high-fidelity simulation. Coates' Caring Efficacy Scale adapted for simulation was the instrument used to measure caring efficacy during high-fidelity simulation. Active participation as caring nursing students in a simulated environment can be measured and yield rich data to either reject or support the notion that caring socialization belongs in high-fidelity simulation.

CHAPTER 3: METHODS

Included in this chapter is a discussion of the methodology used for the current study. Also included are the sampling plan, data collection procedures and instruments that were used to measure caring behaviors. Data-analysis strategies relevant to each research questions are mentioned. Lastly, this chapter includes human subject considerations, proposed hypotheses, and analyses.

Research Design

This study used a quantitative, cross-sectional, quasi-experimental, posttest design with comparisons between intervention and control groups. The study was conducted with undergraduate nursing students who had previous exposure to nursing theory and simulation. The study investigated the effects of the CCEI on prelicensure nursing students perceived caring efficacy and demonstrated caring behaviors during high fidelity simulation. Students were assigned to either an experimental group that received the intervention or a control group who did not receive the intervention prior to participating in an adapted National League for Nursing (NLN) simulation scenario. This study, guided by Jean Watson's Caring Theory, focused on answering questions related to prelicensure nursing students' identification and application of caring behaviors during high fidelity simulation. The independent variable, the CCEI, was delivered using an electronic book format. The dependent variables were students' reported self-caring efficacy and faculty-observed demonstrated caring behaviors by the students. A student survey measured the participants' self-reports of caring efficacy, and a second survey was completed by faculty which measured observed student demonstration of caring behaviors. A visual analog scale for psychological safety (Persico, 2017) was adapted to an electronic survey format which measured students' perceptions of their psychological safety during the simulation-based

experience. Student demographic data were also collected. Survey results and faculty scores were compared between the two groups.

Qualitative data were also obtained by incorporating open-ended questions into the web-based survey instrument that was used for the study. The qualitative component was included to add depth and kept the focus on learning the meaning the participants held about the caring concept (Cresswell & Cresswell, 2018).

Setting

The setting for this study was a four-year, baccalaureate nursing degree program, situated in northeastern United States, which integrates simulation-based education into the nursing curriculum. The nursing program offers nursing students their first high-fidelity simulation-based learning experience during the fall of sophomore year where they participate in a simulation focused on safe practice. The subsequent simulation is conducted during their third year. The second simulation builds on the first by providing the opportunity for students to utilize the nursing process to provide care in a simulated setting. The scenarios are scripted to allow for verbal communication between a high-fidelity simulator and the nursing students. A different but comparable scenario consistent with the students' skill levels was utilized for this study. Students had to perform vital signs, complete assessments, and include patient education. As with the previous simulation experience, the identified scenario for this research was also designed with scripted verbal cues that allowed for consistent, standardized dialog between the high-fidelity simulator and the nursing students.

The specific setting for this study was the university's simulation center where participants were observed behind a one-way observation mirror that obscured the view of the control room from the students in the patient room. The simulated hospital room included a high-fidelity simulator in a hospital bed with all relevant equipment. The simulator had advanced features and functionality allowing for a

realistic portrayal of human responses to interventions, including scripted, verbal communication provided by a simulation facilitator in the control room. In this study, the simulation facilitator was a trained faculty member, knowledgeable in simulation pedagogy.

Environmental-fidelity included scenario-specific props such as pillows for positioning, a patient health record, and a prayer bracelet. The NLN simulation scenario, Activity, turning of a patient with hip fracture (Cato et al., 2021) was preprogrammed into the control room computer to maintain consistency with the scenario progression for each of the study simulation scenarios. The SBLEs were conducted by the facilitator who followed the scenario's script.

Participant Recruitment

Approval from the university setting's institution (Appendix A) and the researcher's academic institution (Appendix B) Institutional Review Boards (IRB) were also obtained. Permission from the Dean and Chairperson of the nursing program to conduct this study was obtained (Appendix C). A recruitment flyer (Appendix D), outlining the purpose of the study, the student activity required to participate, as well as incentives offered for participation was distributed to an identified cohort of students via email for the purpose of obtaining the voluntary sample of participants. Incentives inclusive of a five-dollar Starbucks gift card and a chance to win a basketful of nursing merchandise were advertised to encourage student participation in this study.

The participant recruitment process was initiated once Institutional Review Board approvals had been obtained. A flyer was distributed to senior nursing students via email announcing this study and inviting them to an introductory session to obtain information about it. The introductory sessions occurred at designated dates and times when seniors were on campus for classes. These sessions for potential participants outlined the purpose of the study, methods to be used, and potential risks/benefits to participants of the study, and how confidentiality was to be maintained. The information sessions

were held in-person. Students were asked to voluntarily participate in a simulation-based experience which was to be recorded for the sole purpose of collecting data for the research study, viewed only by the researcher and faculty rater, and was not to be utilized for any other purpose. During the information session, students were afforded the opportunity to ask questions and express their concerns regarding any part of the process. Volunteers were informed that their participation in the study was on their own time and this activity was not linked to any graded nursing coursework. They were also informed that they would be able to withdraw from the study at any time if they wanted.

At the end of the introductory session, a packet with the informed consent was distributed to the students that attended the introductory sessions. Those willing to participate were asked to review the informed consent form in the packet (Appendix E) and enclose one signed copy into an envelope which was collected by the researcher. They kept the other copy for themselves. The researcher then removed all envelopes, placed the signed consents in a secured file, only to be accessible by this researcher.

The simulation session dates and times were listed in the recruitment flyer, and participants were asked to sign up to attend one of the simulation sessions available. Once the number of participants had been established, the sample was divided into two equal groups for the study. The simulation sessions for the control group were held. Once the simulation sessions with a control group of twenty were completed, the experimental group of twenty each received the intervention prior to their scheduled simulation session as part of their prebriefing. Hence, there was no chance that information about the intervention was shared with the control group participants prior to their session. The instructions about the study were reviewed with both groups prior to the start of their simulation sessions. They were reminded to indicate their personal numeric code, which was randomly assigned, onto all research instruments and use a fictitious name when they introduced themselves to the high-fidelity simulator.

Population and Sample

The plan was to recruit a convenience sample from this accessible population of approximately 75 fourth-year undergraduate baccalaureate degree nursing students, or rising seniors, who had previously participated in second and third-year simulation experiences. Participation in this study was independent of any academic coursework required of students during the semester.

The rationale for including students at this level was that this simulation setting, along with the immersive experiences, were not new to them. They were more familiar with treating this as a real patient situation. In addition, the researcher was interested to identify self-reported caring efficacy and demonstrated caring behaviors in senior students who will soon be entering practice.

Instrumentation

The study variables were measured by an instrument that was deemed valid and reliable in previous research. The items measured students' perceived confidence of their demonstration of caring behaviors, and faculty observer scored caring behaviors by participants utilizing the faculty version. Students reported their perceived psychological safety via a visual analog scale. Additional demographic information was also collected. The participants were asked to enter the following data: (a) age in years, (b) ethnicity, (c) gender, (d) personal experience as a caregiver, (e) number of children, (f) healthcare experience in years, and (g) type of experience. This enabled the researcher to conduct analyses exploring the relationships between personal characteristics and scores from the survey. Lastly, open-ended questions were added to obtain qualitative data related to the variables explored. The student survey consisting of the Caring Efficacy Scale-Simulation Student Version (CES-SSV), the Psychological Safety Visual Analog Scale (Persico, 2017), demographic and open-ended questions were combined and uploaded to Campus Labs (Appendix F).

Permission was obtained to use the adapted versions of Coates' Caring Efficacy Scales (Appendix G). The original Coates' Caring Efficacy Scale (CES) was developed in the late 1980s and had 46 items for measuring caring but has since undergone factor analyses and further refinement resulting in a 30-item scale that has been deemed reliable and valid. There were two tests of reliability (Form A and Form B) conducted which yielded alpha scores of .85 and .88. Form A had 30 items consisting of more positive than negative items. Form B also contained 30 items but was balanced between the positive and negative items. Faculty members, experts in Watson's theory, also rated the CES items as having content validity (Coates, 1997). The CES has been tested in both clinical and educational settings, and it has been reported as one of the few caring measurement tools with content validity which most closely aligns to Watson's Caritas processes (Sitzman & Watson, 2019).

A cross-sectional study was undertaken in Australia to test the psychometric properties of the Caring Efficacy Scale (CES) in a sample of Registered Nurses (Reid et al., 2015). The researchers recognized the early work by Coates and expressed how important it is to research the nature of caring to advance nursing knowledge of the subject to improve the nurse-patient caring experience. Mean caring efficacy scores for this study were reported at 5.074. Using exploratory factor analysis and confirmatory factor analysis, the researchers examined the construct validity and reliability of the CES. The Principal Axis Factoring (PAF) technique suggested only 28 out of the original 30 CES items described the caring efficacy subscales of this RN population. Subsequent factor analysis identified 2 subscales comprised of 14 items each: Confidence to Care and Doubts and Concerns. Reliability analysis yielded a Cronbach's alpha of .86 and .78, respectively. These results support the measurement validity of the CES in the Australian population of registered nurses ($N = 639$), and with a survey response rate of 31.9%, the study was adequately powered. The authors conclude the scale may assist

nurse educators to evaluate the effects of orientation or professional development programs designed for improving nurses' caring self-efficacy as well as predict levels self-efficacy in nursing.

The CES was also tested in a sample ($N = 215$) registered nurses from Italy to culturally adapt and validate the tool's psychometric properties on that population. Following established guidelines for translation of a scale into another language, the researchers used convenience sampling to obtain participants to complete the Italian version. The researchers retained items that loaded equal or higher than .40, yielding a shortened version of 17 items. The shortened version appears to be representative of Italian nursing culture. Correlating with Australian results from Reid et al.'s study (2015), this adapted version resulted in a Cronbach's alpha greater than .70. The authors conclude that the Caring Efficacy Scale can become a valuable tool to measure caring self-efficacy of nurses, in hopes that it provides insight that may then improve caring approaches in their practice.

Most recently, the psychometric properties of the Caring Efficacy Scale (CES) were assessed among personal care attendants ($n = 280$) in residential aged care settings in Australia (Shrestha et al., 2023). Confirmatory factor analysis (CFA) was used to assess how the CES fit the convenience sample in the study. Coates' one-factor model and Reid et al.'s (2015) two-factor model were assessed. Due to an unsatisfactory fit with both models, the researchers also conducted an exploratory factor analysis. The CES in this study was shortened due to the findings of the exploratory factor analysis. Low factor loadings were omitted and attributed to the personal characteristics of the personal care attendants and how they were from culturally and linguistically diverse backgrounds. However, the Caring Efficacy Scale and its subscales were reliable in measuring caring self-efficacy with Cronbach's alpha coefficients of .85 for the modified scale, .83 for the Confidence to Care and .79 for Doubts and Concerns (Shrestha et al., 2023).

Coates' Caring Efficacy Scales (Coates, 1996, 1997), student and preceptor/supervisor versions of Form B, were adapted for use in simulation by Eggenberger et al. (2012) and renamed The Caring Efficacy Scale-Simulation Student Version (CES-SSV) and Caring Efficacy Scale-Simulation Faculty Version (CES-SFV). Both include 30 6-point Likert-type scaled items for student self-reporting confidence of caring behaviors, and a faculty observer tool for measuring students' demonstration of caring behaviors during high-fidelity simulation. The Likert rating scale ranges from -3 (*strongly disagree*), -2 (*moderately agree*), -1 (*slightly moderate*), +1 (*slightly agree*), +2 (*moderately agree*) to +3 (*strongly agree*). As per the instrument author's coding instructions, the scores are re-coded so that the lowest score of -3 becomes 1 and the highest score of 3 equals 6 on the 6-point scale. Scores can range from a minimum of 30 to a maximum of 180 (if all items are completed). Higher scores will signify more caring efficacy. Cronbach's alpha coefficient for the original Caring Efficacy Scale Self-report was reported as .88 (Coates,1997). Assessment of the degree of relationship between the CES as a measure of caring and the clinical evaluation tool (CET) used by the university in accreditation studies as a measure of clinical competence provided additional concurrent validity evidence. The CET achieved alphas of .85 for student self-ratings and .95 for supervisor ratings of students. Positive correlations were found between graduates' ratings of care (CES) and their clinical competence ratings; (form B: r = .63 = .01). Eggenberger et al. (2012) modified Coates' Caring Efficacy Scale Self-Report to reflect a simulation-based experience. With their adapted version (2012), the Cronbach's alpha coefficients for student and faculty raters' scales were reported to be .917 to .965, respectively. They also posited that the CES-SSV and CES-SFV could measure caring competencies in an educational setting. In addition, Coates (as cited in Sitzman & Watson, 2019) mentions that many nursing schools have utilized the CES as a measure of student outcomes.

Permission to use the Psychological Safety visual analog scale (VAS) developed by Persico (2017) was obtained. Psychological safety was used to measure learners' level of comfort with the simulation-based experience. In the Persico (2017) study, the VAS was 100mm in length with scores ranging from one to ten. The scale will measure the participants' perceived psychological safety and will include the definition and instructions for placing an "X" describing how safe they felt during their simulation-based experience. When present in simulation, psychological safety allows for students to be fully engaged and able to share their thoughts and feelings (Daniels et al., 2021). The VAS for psychological safety (Persico, 2017) was correlated to students' satisfaction with their simulation-based experiences. Results from the research indicated a positive and significant correlation between the two. Campus Labs was the web-based survey platform used to collect the data. In this study, Campus Labs only had the ability for participants to report entries in whole numbers.

Open-ended questions were included in the questionnaire. The participants were asked to describe their perception of the simulation-based experience and the caring concept as it related to professional nursing practice. This researcher also posed an open-ended question related to the effect of the CCEI for the experimental group. This additional question was added to the experimental groups' survey as a version B. All the survey items were entered into one electronic survey that encompassed demographic and open-ended questions, CES-SSV survey and the adapted VAS.

Intervention

On the day of their scheduled simulation sessions, participants in the intervention group were placed in a conference room and asked to view an Introduction to Caring Concepts Education Module, grounded in Jean Watson's Human Caring Theory. They were instructed to bring their personal laptop to the simulation center to access this eBook as a backup. However, the participants were able to individually view the CCEI on the computer monitor in the conference room. This researcher developed

the module to serve as a prebriefing, caring concept-based educational intervention. Content of the eBook included an introduction to the caring concept, along with why nursing education needs to highlight the art of nursing. Examples of how to manifest and apply key caring concepts with relevant text, movie excerpts and other video segments provide additional content.

The purpose of the intervention was to familiarize the learners with caring concepts based on Jean Watson's Caritas processes and provide examples of caring behaviors. Rationale as to the importance and relevance of practicing caring behaviors during simulation for the purpose of professional skill growth were outlined. Position statements from the American Nurses' Association (ANA) and the American Academy of Colleges in Nursing (AACN) as to why caring is integral to professional nursing were also included. This was followed by a video from Dr. Ann Dabrow Woods, chief nursing officer at Wolters Kluwer, who spoke about future macro trends in nursing and the culture of caring (2019). She described how the culture of caring is changing to improve the patient experience. On the following page, learners viewed a video featuring Dr. Jean Watson who provided an overview of caring science and her theory of human caring (Watson, 2015). Two additional videos were included in the eBook. The Cleveland Clinic video entitled, *Empathy: The human connection to patient care* (2013), demonstrated the empathy concept in healthcare and a clip from the movie, *Wit* (2001), exemplified how a nurse created a healing environment with her patient. The eBook concluded by reiterating the researcher's intent of outlining why and how to include caring behaviors in nursing practice, and how they can be applied and practiced in a simulated environment. A famous quote by Maya Angelou (n.d.) emphasized, "I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel," which underscored the importance of keeping the art of nursing front and center in nursing curricula.

The content of this eBook was reviewed for content validity by faculty who possess a strong knowledge of caring theory. This activity was estimated to take 30-40 minutes of time. To measure learner understanding, upon completion of the CCEI, participants were provided an electronic link to a virtual escape room entitled, *Caring in a Simulated Environment*, where they answered questions based on the content of the eBook. Once these preparatory activities were completed successfully, the simulation-based experience was initiated. The control group did not receive this caring concept educational intervention prior to their simulation-based experience but were emailed the link after they participated in the simulation-based learning experience.

Procedure

After a convenience sample of 40 participants was obtained, the participants were evenly assigned to the experimental or control group in advance of the simulation sessions. The simulation sessions were scheduled over two weeks based on the number of participants that were recruited. The control group and the experimental group participated in the same, high-fidelity simulation scenario. However, all participants in the control group completed their simulation-based experiences first. After the study simulation sessions for the control groups had occurred, the experimental group sessions began. The purpose of this sequencing was to decrease the threat of validity by keeping the content of the intervention protected.

All students gathered in a conference room for prebriefing activities prior to the start of the simulation-based learning activity. The researcher, a certified healthcare simulation educator completed the prebriefing activity with the participants. HSSOBP™ (2021) were applied to this study. The experimental group had been given the eBook/escape room intervention as an additional preparatory activity, which was outlined earlier prior to the briefing session. At the conclusion of the simulation scenario, all students were led back into the conference room to complete the study survey. Once all the

participants completed their simulations, they were provided a zoom link to attend the debriefing to ensure the students have a guided reflection of the experience. As stated earlier, the raffle drawing for the basket of nursing merchandise was held for the attending, eligible participants.

Fidelity of Treatment

The simulation center provides a basic simulation training program- content inclusive of the healthcare simulation standards of best practice. According to the Healthcare Simulation Standards of Best Practice™ Facilitation (Persico et al., 2021), a facilitator is an educator who possesses expertise in simulation pedagogy which is essential for providing the structure and process to guide participants in their simulation-based experiences. The researcher is a Certified Healthcare Simulation Educator (CHSE) and has over 15 years of simulation education experience in undergraduate nursing simulation. The researcher oversaw the logistics of the simulation sessions as well as ensured that the participants followed all of the procedural guidelines as outlined. A Simulation Operations Specialist assumed the role of facilitator for all the simulation sessions. This specialist possesses a strong foundation in simulation pedagogy with over three years of simulation experience, assumed the control of the scenario progression and provided the voice of the simulated patient during each of the sessions.

Procedure for Simulation

All participants in both the control and experimental groups were emailed a pre-simulation assignment, specific to the NLN simulation scenario, Activity, turning of a patient with hip fracture (Cato et al., 2021), one week prior to their scheduled simulation day. This is customary in this nursing program's SBLEs and follows HSSOBP™: Prebriefing: Preparation and Briefing (McDermott et al., 2021) as a preparatory activity. This assignment outlined general learning objectives of the simulation-based experience, assessments and skills that were expected to be performed by participants during the SBLE. For this study, one nursing student at a time participated in their own simulation session. The

rationale for having one student at a time participate in the simulation session was to eliminate the influence of one student's behavior on another's. The SBLE elicited a more accurate depiction of each participant's demonstration of caring behaviors.

During the briefing session, students were welcomed to the simulation center, agenda and learning objectives were reviewed, and the purpose of the research study was reiterated at this time. The facilitator set the tone and expectations for the scenario and discussed logistical factors of the day. Having adopted a core value from the Harvard Center for Medical Simulation, the simulation was prefaced with the Basic Assumption™ , which is the belief that "Everyone participating in activities at our simulation center is intelligent, capable, cares about doing their best and wants to improve©" (2004-2023). The briefing continued as participants were escorted to the simulated environment and given a structured orientation to the environment, equipment, the high-fidelity simulator, and the technology that was to be used for recording the scenarios. Participants were also oriented as to how to communicate with the high-fidelity simulator, as well as how to notify the provider if necessary. These participants had prior simulation-based learning experiences in this specific setting. At this time, they were free to ask any questions related to basic operations and information received during the orientation. The goal of the structured briefing was to relay all relevant information regarding expectations, environment, equipment, and roles which then sets the stage for a psychologically safe learning environment (McDermott et al., 2021). At the conclusion of this portion of the briefing phase, students were asked to check that they have removed any name badges. They received a randomly numbered label, which was affixed to their uniforms prior to entering the simulation room. This was the code number the participants used for their survey documents.

The high-fidelity simulator was programmed with the scenario selected for this study. The facilitator was situated in a control room, behind a one-way mirror, and ran the computer software

program while providing the verbal cues through the high-fidelity simulator. Laerdal software for the Nursing Anne manikin was used to program the simulator for consistent scenario progression for every study simulation scenario. The facilitator followed a script as the simulated patient and verbalized scenario's cues as the scenario progressed via laptop computer program. Each scenario session was conducted in a strict 20-minute timeframe and a verbal prompt by the facilitator ended all simulation scenario sessions if the participants reached that time limit. The sessions were individually recorded and saved in a password-protected database.

Identified NLN Scenario for the Simulation

The scenario that was utilized was a National League of Nursing (NLN) scenario that offered nursing students validated, evidence-based content for the purpose of assessing, managing, identifying, and prioritizing basic patient concerns in simulation-based education. The NLN simulation scenario, Activity, turning of a patient with hip fracture (Cato et al., 2021) was utilized for this research study. The students were expected to perform standards of care such as: hand hygiene, introduce self (using a fictitious name), identify patient, review electronic health records (EHR), and perform vital signs. In this scenario, students were also expected to perform a focused musculoskeletal assessment, assess pain level, review the Morse Fall Scale, and turn and position the patient. Students were expected to educate and comfort the patient. The inclusion of prayer beads and an additional verbal cue of "Can you make sure I have my prayer bracelet in my hand?" was added at the end of the scripted scenario, to broaden the opportunities for dialog between the nurse and the patient. The scenario involved an 85-year-old woman with a history of osteoporosis. The NLN scenario had specific and general learning objectives. It is important to note that this scenario specifically incorporated "caring for the patient's overall well-being" as a general learning objective (Cato et al., 2021).

Once the orientation was completed, the participants were reminded to introduce themselves using fictitious names. They were verbally given a hand-off report in a SBAR format by the simulation facilitator, as if they were the nurses coming on their shifts. The participants were instructed to stand outside the patient's door and wait for the starting prompt spoken by the facilitator. Each participant, in the role of a registered nurse, then started the simulation scenario. The 85-year-old female in the scenario was admitted to the hospital after falling and fracturing her left hip. She was scheduled for surgery the next day. During the scenario, the nurse was expected to manage the unfolding case. The NLN scenario provided a scenario progression outline inclusive of specific verbal cues that were spoken by the simulation facilitator through the high-fidelity simulator during the session. The script allowed for consistent dialog with the participants and prompted possible verbal responses or demonstrations of caring behaviors from the participants from cues provided. Key Caritas factors such as communication, empathy, and caring, were identified and part of the scenario script. The researcher included a prop with an added verbal cue at the end of the standardized script for the purpose of bringing in Watson's Caritas Second Process®: be authentically present, enable faith and hope, and honor others. The addition of a prayer bracelet was consistently present for all the simulations. Sitzman and Watson (2018) mention that this specific caritas process is sometimes overlooked; stating wellness and healing are closely affected by and related to spiritual, emotional, and energetic dimensions. This addition opened a possibility for the nurse to identify what was meaningful for their patient who was anxious about her upcoming surgery and wanted to hold her prayer beads. Immediately following the simulation scenario, each participant completed the questionnaire electronically. The participants were instructed that the zoom link for the debriefing session and raffle drawing would be mailed to them.

In this study, debriefing was conducted after all surveys were collected from the participants., Debriefing is a Healthcare Simulation Standard of Best Practice (HSSOBP™, 2021), and the process

was not a threat to validity. According to the HSSOBP™: The Debriefing Process (Decker et al., 2021), debriefing is a facilitated process necessary for ensuring improved, safe performances as healthcare professionals. A blended approach of feedback, debriefing and/or guided reflection is implemented to promote reflective thinking. With guided reflection questions provided by the chosen scenario for this research, the facilitator conducted the debriefing with the participants. The Debriefing with Good Judgment Method by Rudolph, et al. (2006) was utilized to ensure that learners' frames of reference had driven the appropriate actions during the SBE, which were explored and evaluated through an advocacy-inquiry approach. This debriefing method by the facilitator increased the mutual-nature of the advocacy-inquiry approach by respecting the learners' perspectives which ensured psychological safety and improved learning.

Data Collection

Data were collected using a survey for student responses and a scoring instrument for the observing faculty to rate the students. After the simulation session ended, participants were led into a conference area where they completed one electronic questionnaire that combined demographic questions, Coates' Efficacy Scale-Simulation Student Version (CES-SSV), the Psychological Safety visual analog scale and the open-ended, qualitative questions. Using their devices, the participants scanned a QR code to access the questionnaire. They were instructed to enter their numeric code on the form. This enabled the researcher to match their survey responses with the faculty rating data. They were also reminded not to enter any other identifying information on the surveys. Before leaving the room, they discarded their numbered ID badges. The students were reminded that a zoom link would be sent out for group debriefing. The debriefing session was held on a scheduled date after all volunteers had completed their assigned study simulation sessions. The researcher and the facilitator, skilled in

evidence-based practices related to the debriefing process, conducted the debriefing session. After the debriefing concluded, the raffle drawing was held with the participants who were present.

Faculty Rating of Student Performance

The Caring Efficacy Scale-Simulation Faculty Version (CES-SFV) was used by the faculty observers to score the caring behaviors demonstrated by students during the simulation scenario. To enhance reliability of scoring, two healthcare educators were assigned to independently score each student by observing the recording of their performance during the simulation scenario. The two educators selected were knowledgeable in simulation pedagogy and experienced in working with nursing students in various settings including simulation. The faculty raters did not know the students prior to this study. These faculty raters were trained prior to observing the saved video recordings. This training included instructing the faculty raters in the background and description of the Caring Efficacy Scale-Simulation Faculty Version and the scoring instructions for this instrument. Once instructed, each faculty rater was asked to view a video recording, created with permission of staff volunteers for the purpose of this training, and score the participants. The opportunity for questions was provided to the faculty raters during this training period and differences in the scoring discussed. The student identity was masked from the faculty raters. The students did not use their real names when they introduced themselves, and an assigned number on a label was affixed to the uniform.

Protection of Human Subjects

In this study, ethical considerations and human rights protection were of utmost concern. Privacy and confidentiality of the participants was maintained. No personal identifiers were collected with the selected instruments, and identities were concealed from the faculty raters. The researcher obtained IRB approval from Molloy University (Appendix A) and Long Island University Post (Appendix B). Participation in this study was voluntary.

The recruitment occurred when students were on campus for class. Participants were recruited via a flyer which was also distributed to a cohort of senior nursing students via email. Introductory sessions were conducted in an in-person group setting and the purpose, methods and potential risks/benefits and confidentiality of the study were reviewed. Students were informed that the simulation-based experience was to be recorded for the sole purpose of collecting data for a research study, and that their video would not be utilized for any other purpose. All simulation recordings were automatically retained on a secured network recorder and in password protected files as per the university's simulation center's policies. After being informed of their rights as research subjects, students were afforded the opportunity to ask questions or express their concerns regarding any part of the process. As stated earlier as well, the students' participation was voluntary, and they were able to withdraw from the study at any time if they wished to do so.

No student identifiers were included on any document used in the research study. Although anonymity cannot be assured due to participant observation by the faculty raters, confidentiality was maintained by assigning a unique identification number to each participant for coding purposes. Students were instructed to introduce themselves with fictitious names during their simulation-based experience to mask their identities from the faculty raters.

The participants selected a label with a numeric code and this number was entered on all research instruments and visually displayed by affixing the label to their uniform. This enabled linking of the completed surveys with faculty-observers' scores. This numbered label was used in place of name badges students customarily use for simulation and clinical. The list of numbered identification labels, codes and participant names are accessible only to the principal investigator and stored in a secure locked office cabinet. No data was reported that identify the participants or be accessible to anyone but the principal investigator. Lastly, this researcher, a credentialed simulation facilitator, was available to

anyone with expressed or identified psychological discomfort before or during the study simulation sessions. This did not occur. If this situation had been identified, the simulation would have been discontinued, and the student would have been withdrawn from the study. The student would also have been offered resources to university-based counseling services.

Data Analysis Plan

Once all the participants and faculty completed their respective surveys, data was downloaded from Campus Labs, the university's electronic survey platform into IBM® SPSS Statistics version 27 (2020) and maintained in a secure password –protected database. Preliminary analysis was conducted to identify the degree of survey completion and frequency distributions of the data. Demographic data was analyzed descriptively to determine sample characteristics. For the CES-SSV and CES-SFV surveys, the items were re-coded and averaged to obtain scores for each participant.

Descriptive statistical analyses were performed, as well as *t*-tests and one-way between groups ANOVA, using select personal characteristics, CES-SSV scores and measures. In addition, Spearman's rank correlational analyses were performed to identify any possible relationships among the variables of interest. All instruments were analyzed for reliability.

Procedure Data Management

All signed participants' consent forms were secured in a locked drawer, which were accessible only to the researcher. The completed electronic Caring Efficacy Surveys, both student and faculty versions were stored on devices with password protection. The research data contained numeric codes and did not contain any personal identifiers. Data have been secured in a password-protected electronic file, accessible only to the researcher. Data will be kept for five years beyond the completion of the study. Results of the study may be published in a professional journal or presented at professional conferences.

Hypotheses:

H1: Prelicensure nursing students will demonstrate more caring behaviors after viewing the caring concept educational intervention (CCEI) based on Watson's Caritas Model than students who do not receive the educational intervention.

H2: Prelicensure nursing students who receive the caring concept educational intervention (CCEI) will have higher self-reported efficacy to demonstrate caring behaviors during high fidelity simulation.

H3: Caring self-efficacy by the students and observed caring efficacy by faculty will be positively correlated.

H4: There will be a positive correlation between participants' perception of psychological safety and their self-reported efficacy with demonstration of caring behaviors.

Conclusion

This interventional study was conducted to measure student perceptions of their own demonstration of caring behaviors and compare the groups who did/did not receive the preparatory, caring concept educational intervention (CCEI) prior to their simulation-based learning experience (SBLE). Demonstration of caring behaviors of both groups was rated by faculty using the Caring Efficacy Scale-Simulation Faculty Version (CES-SFV). Averaged scores from the CES-SSV and the CES-SFV were compared and analyzed. The Psychological Safety visual analog scale was included and adapted to the electronic student survey to ascertain their perceived psychological safety they felt during their SBLE. Perceptions of caring demonstration and psychological safety were also compared, testing the assumption that if students feel psychologically safe, they will be more inclined to demonstrate caring behaviors in the simulated environment. This researcher also examined whether relationships existed among students' reported caring self-efficacy, psychological safety, and personal characteristics

such as age, gender, parent status, experience as caregivers at home and at work. Also, of interest to this researcher, qualitative components via open-ended questions added rich description to this study. Having only a convenience sample with limited power, exploring the participants' perceptions of the CCEI were important to identify as a potential preparatory strategy to be used in future simulation design. A generalized question of how the simulation-based learning experience impacted future practice as nurses was also posited to all participants.

CHAPTER 4: RESULTS

This study was designed to investigate the effect of a caring concept educational intervention on students' caring efficacy and demonstrations of caring behaviors during high-fidelity simulation. The study included students who had already participated in at least two simulation-based experiences in the undergraduate nursing program. The convenience sample of 40 participants was divided into two groups, there were 20 participants in the control group and 20 participants in the experimental group. Assignments to the groups was scheduled based on participant availability during the two weeks that the simulation dates were offered.

After conducting high-fidelity simulations with students assigned to the control group ($n = 20$), the experimental group ($n = 20$) received the CCEI before participating in their simulation activity. The CCEI, grounded in Watson's caring theoretical framework, was an intervention designed to be a preparatory, prebriefing strategy prior to the simulation sessions. Important to note, the CCEI was viewed immediately prior to their scheduled simulation sessions. The Caring Efficacy Scale-Student Simulation Version (CES-SSV) was administered immediately following the HFS. All students completed a Caring Efficacy Scale-Simulation Student Version (CES-SSV) to measure their perceptions of caring efficacy. The student scores were then averaged and compared. The researcher recorded these sessions.

Two faculty, who were trained in advance, viewed the video recordings of each simulation session. The two faculty raters scored each of the participant's demonstration of caring behaviors using the Caring Efficacy Scale-Simulation Faculty Version (CES-SFV) captured in the audio-video recordings. Faculty rater scores were averaged and then compared to the completed student survey averages.

Campus Labs software was used to electronically record the responses from the student and faculty surveys. The results were then downloaded into the SPSS program. Independent sample *t*-tests were used to compare the student scores and faculty ratings between the experimental and control groups. The control and experimental groups were compared on demographic variables using *t*-tests and analyses of variance (ANOVA). The relationships between the scores of the CES-SSV, CES-SFV, and psychological safety VAS were analyzed using Spearman rank correlations.

Also examined were the relationships of the demographic characteristics to the students' caring efficacy scores. Age, gender, ethnicity, marital and parental status, work experience as a patient care associate/technician and any personal experience as a caregiver were variables of interest.

Description of the Participants

The research was conducted in a simulation center and offered as an additional simulation-based educational experience in a traditional four-year undergraduate nursing program. Eligible participants were nursing students in this program who had participated in two high-fidelity simulations prior. 40 students voluntarily consented to participate. A post-hoc power analysis for independent samples *t*-test revealed that this sample size only yielded a power of 8.8%. Based on evidence, it was speculated that the effect size would be small which would require a large sample size. There were approximately 150 students who met eligibility criteria in the nursing program when the study was conducted. The timing of the simulation sessions was at the end of the semester, and this may have limited the number of students who volunteered.

All participants responded to the demographic questions after completing the Caring Efficacy Scale-Student Simulation Version (CES-SSV). Demographic information is important to examine characteristics of the sample obtained. Participants ranged from 20 to 59 years. Most of the undergraduate students in the sample were between the ages of 21 to 29 years old (70%). The sample

was predominantly female (85%). The majority of the students reported being White (67.5%), although there were Hispanic (15%), African American (10%) and Asian (7.5%) students included. Most of the sample were never married (75%) and did not have children. Only 3 students (5%) reported having no prior work experience as patient care technicians or patient care associates, whereas less than one year (37.5%), one to three years (25%) were the duration of this experience most reported. Lastly, personal caregiver experience outside of a healthcare setting was also reported and varied from no personal experience (30%), to being approximately evenly distributed between less than one year (22.5%), one to three years (22.5%), and four to ten years (20%). A small percentage of the sample (5%) reported eleven to twenty years of personal caregiver experience. The frequency and percentage for the demographic data collected are displayed in Table 1.

Table 1: Participant Characteristics

Characteristics (n = 40)	f	%
Age		
18-20 years	1	2.5
21-29 years	28	70
30-39 years	8	20
40-49 years	2	5
50-59 years	1	2.5
Gender		
Male	6	15
Female	34	85
Ethnicity		
African American or Black	4	10
White	27	67.5
Asian	3	7.5
Hispanic/Latina/e/o/x	6	15
Marital Status		
Married	9	22.5
Never Married	30	75
Other (Partner)	1	2.5
Parent or Guardian		
Yes	6	15
No	34	85
Prior Work Experience in Healthcare as a Patient Care Tech/Associate		
< 1 year	15	37.5
1-3 years	10	25
4-10 years	9	22.5
11-20 years	3	7.5
No Experience	3	7.5
Caregiver Experience Outside the Healthcare Setting		
< 1 year	9	22.5
1-3 years	9	22.5
4-10 years	8	20
11-20 years	2	5
No experience	12	30

In this study, convenience sampling was used to obtain participants and assignment to experimental or control group was done in a nonrandom manner based on the student's choice of date: both methods have known limitations. The researcher conducted further analyses to identify if there were statistically significant differences in personal characteristics between the experimental and control groups. The Chi Square test for Independence and the Fisher Exact test indicated no significant differences between the two groups on all the demographic variables.

Instrument Results for the Sample

Immediately following the simulation-based learning experience, participants accessed the electronic survey via a QR code link and completed the questionnaire that included the Caring Efficacy Scale-Simulation Student Version, adapted Psychological Safety Visual Analog Scale, demographic questions and open-ended questions related to caring efficacy. The experimental group specifically was asked to comment on how the CCEI influenced their perception of caring in a simulated environment, if at all.

Instrument Results for the Sample - Simulation Student Version

The Caring Efficacy Scale-Simulation Student Version (CES-SSV) measured participants' perceptions of their caring efficacy. The CES-SSV contains thirty items, and the participants were under the assumption that their patient was the human patient simulator (high-fidelity manikin) when completing the survey. According to Coates (1997), the original Caring Efficacy Scale Self-Report had a Cronbach's alpha coefficient of .88. The tool has a 6-point Likert scale with scores ranging from -3 (*strongly disagree*) to +3 (*strongly agree*). The (-3) was converted to 1, (-2) = 2, (-1) = 3, (1) = 4, (2) = 5, and (3) = 6 as maximum score for each question. The odd number items that were negatively worded were reverse coded prior to analysis as specified by Coates. The scores were then ready for statistical analyses. A total of 40 surveys were collected and completed with no missing data. Reliability analysis

revealed a Cronbach's alpha of .845 for this sample, which is like the Cronbach's alpha coefficient of .88 reported by Coates (1997). The mean score for the Likert-scale responses on the survey for all 40 students was 5.3094 with a range of 2.6. The minimum average score was 3.4, maximum average was 6.0 with a standard deviation of .54068. The distribution was noted to be negatively skewed since most of the scores were between 5 and 6, and the results revealed no scores lower than 3.4. These CES-SSV results indicate that the participants reported being confident in their ability to demonstrate caring behaviors in their simulated sessions.

Instrument Results for the Sample - Simulation Faculty Version

The Caring Efficacy Scale-Simulation Faculty Version (CES-SFV) was the instrument used to assign rating scores to each student's demonstration of caring behavior. The faculty raters independently scored the students after the sessions were completed using the simulation session recordings. The faculty rater scored each student using the CES-SFV while viewing that student's simulation recording and before viewing another student's video. Like the student version of the instrument, the CES-SFV contains 30 items with a six-point Likert scale with scores ranging from -3 (*strongly disagree*) to +3 (*strongly agree*). The scores were then re-coded for statistical analyses with (-3) converted to 1, (-2) = 2, (-1) = 3, (1) = 4, (2) = 5, and (3) = 6 as maximum score for each question. In the faculty instrument, 14 of the 30 items were negatively worded and these were reverse-coded prior to analysis as with the student version of the instrument. Each faculty completed all 30 items for each student hence, there was no missing data.

The Caring Efficacy Scale-Simulation Faculty Version demonstrated good internal consistency with a Cronbach alpha coefficient of .974 obtained. There was a small difference in the mean of the scores assigned to students between Faculty Rater 1 (*M* = 5.3, *SD* = 0.59) and Faculty Rater 2 (*M* = 5.7, *SD* = 0.80). Interrater reliability analysis revealed a low intraclass correlation. Spearman's rank

correlation was computed to investigate the relationship between the scores the faculty raters assigned, since there was a negative skew to the distribution and a small sample size. Although interrater reliability analysis revealed a low intraclass correlation with Faculty Rater 2's average scores being slightly higher than the average for Faculty Rater 1, this difference was not significant, $r(38) = -.12$, $p = .917$.

Adaptation of the Psychological Safety Visual Analog Scale and Results

Additionally, a psychological safety visual analog scale (Persico, 2017) was included in the post -simulation student survey. Due to the limitation of the electronic formatting for the survey, psychological safety was measured with whole numbers on a scale of one to ten. A minimum rating of one indicated that the participant did not feel safe, accepted, and respected within the context of the learning environment, and ranged to a maximum value of ten indicating that they felt extremely safe. The mean score was 9.87 with a standard deviation of 0.47 with 92.11% of the participants reporting that they felt extremely safe during their simulation-based experiences. An independent samples *t*-test was also conducted to compare the psychological safety scores for the control and experimental groups. There was no significant difference in scores for the control group ($M = 9.72$, $SD = .67$) and experimental group ($M = 10.00$, $SD = .000$; $t(17) = -1.76$, $p = .096$, two-tailed). The magnitude of the differences in the means (mean difference = .278, 95% *CI*: -.611 to - .055) was moderate (eta squared = .079). Only 7.9% of the variances in caring efficacy is explained by the control/experimental scores.

Research Questions

Question 1: Is there a difference in faculty-observed demonstration of caring behaviors between the experimental group that receives a caring concept educational intervention based on Watson's Caritas Processes and the control group that does not receive the intervention?

Based on the completed responses from the CES-SFV, independent samples *t*-tests were conducted to determine whether there was a statistically significant difference in the ratings of the observed caring behaviors by the faculty raters between the control and experimental group participants. There was no significant difference in scores for the control group (*M* = 5.36, *SD* = .49) and the experimental group (*M* = 5.56, *SD* = .48; *t*(38) = -1.287, *p* = .206, two-tailed. The magnitude of the differences in the means (mean difference = -.198, 95% *CI:* - .51 to .11) was very small (eta squared = .011).

Question 2: Is there a difference in students' self-efficacy reporting of their caring behaviors between the experimental group that receives a caring concept educational intervention based on Watson's Caritas Processes and the control group that does not receive the digital educational intervention?

Using the score computed from the average of the 30 completed responses on the CES-SSV from the control and experimental groups, an independent samples *t*-tests was conducted to determine whether there was a statistically significant difference in the scores between participants in the intervention and control groups. There was no statistically significant difference in scores for the control group (*M* = 5.26, *SD* = .67) and the experimental group (*M* = 5.36, *SD* = .35; *t*(38) = -6.37, *p* = .528, two-tailed. The magnitude of the differences in the means (mean difference = -.108, 95% *CI:* - .25 to .14) was very small (eta squared = .011).

Question 3: Is there a correlation between the faculty rater caring efficacy scale scores and students' caring efficacy scores?

Spearman's rank correlation was computed to assess the relationship between each faculty rater's scores assigned to students and the students' caring efficacy scores, since there was a negative skew to the distribution and a small sample size. There was a medium positive correlation demonstrated between the scores assigned by Faculty Rater 1 and the students' scores, *r*(38) = .37, *p* = .017. There was no

statistically significant correlation noted between the scores assigned by Faculty Rater 2 and the student's scores, $r(38) = -.12$, $p = .484$. Although the mean of the scores assigned to students by Faculty Rater 2 ($M = 5.7$, $SD = 0.8$) was higher than the mean student caring efficacy score ($M = 5.3$, $SD = 0.53$), this difference was not statistically significant.

Question 4: What influence do demographic characteristics have on students' perceptions of caring behaviors in a simulated environment?

Based on the completed responses from the CES-SSV from both control and experimental groups, statistical techniques were used to test for significant differences between certain conditions. The researcher conducted further analysis to determine if there were any significant relationships between the personal characteristics and the caring efficacy average scores. Spearman's analysis yielded no significant correlation between gender, marital status, parental status, and caring efficacy. An analysis of variance (ANOVA) was performed to determine if there was a relationship between caring efficacy scores and age, ethnicity, experience as caregiver in healthcare settings, and caregiver experience outside the healthcare environment. The researcher did note a statistically significant score by ethnicity, but post hoc analyses could not be performed due to a small group size of three.

Question 5: Is there a correlation between participants' perception of psychological safety and their self-reported efficacy with demonstration of caring behaviors?

Based on the completed responses from the CES-SSV and the Psychological Safety VAS, Spearman's rank was used to determine if there was a relationship between the students' psychological safety scores and their caring efficacy scores. The relationship between psychological safety (as measured by the adapted psychological safety VAS), and caring efficacy (as measured by the CES-SSV) was investigated using Spearman's rank correlation coefficient. Spearman's rank correlation was utilized since there was a negative skew to the distribution and a small sample size. There was a weak,

positive correlation between the two variables, $r = .158$, $n = 38$, and not statistically significant with $p = .342$.

Question 6: How do students describe how demonstrating the caring concept within a simulation-based experience relates to their clinical practice as a nursing student and their future professional role as a nurse?

Using qualitative content analysis, the researcher analyzed students' responses to the open-ended questions that were included in their surveys. Polit and Beck (2017) stress the importance of reflexivity between the researcher and the interpretations of the participants as the researcher looks for prominent themes to develop a holistic understanding of a phenomenon.

Themes related to nursing and the importance of empathy and caring emerged from the student responses. The simulation was a reminder for students to have empathy with all patients. One commented that they always strive to be mindful when working with patients, and the importance of understanding the need to be caring about the whole patient and being empathetic to their situation. Another student mentioned,

> Caring is an essential part of nursing but can be overlooked. Sometimes burnout or other barriers can get in the way and cause the concept of caring to be practiced less. As I've witnessed throughout nursing school and working through the Covid-19 pandemic, and now reflecting during the simulation how imperative it is to not lose sight of the caring concept.

Simulation for skill development was noted from several participants. Students appreciated the extra opportunity to practice and sharpen their skills in a simulated environment. One student mentioned that "the simulation experience fostered a level of confidence in their skills which, in turn, prepared them for real patient care in the hospital." Many commented on how helpful simulation labs are for providing feedback and space for allowing room for error without harming an actual person. Another

remarked "that any type of simulation with the right instructors helps to use any of the skills they have learned." Lastly, a student felt that "focusing on the caring concept was a great way to prepare for a professional career as a nurse."

Therapeutic communication exploration was also evident as a theme. Students commented how beneficial it was to be able to practice their communication skills. As one student mentioned, "simulation mimics the conversations we regularly have with patients' real-life concerns and worries." By conversing with their simulated patient, students were able to become more familiar with assessment skills and anticipating patient responses. Another student responded that "simulation is a good tool to gain confidence with talking to patients, even though talking to manikins feels awkward."

An important theme that emerged was psychological safety in the simulation-based experience. Quantitative analysis revealed that students felt safe to learn in this environment. Qualitatively, the majority of students responded that simulation is essential to learning. One student felt that the "simulation provided a low stakes environment where it is okay to make mistakes, and that by practicing in a safe environment, one can increase the safe care given to patients in real practice."

Providing holistic care while in a simulated environment was also an activity valued by the students. Aligned with Caritas Processes (Watson, 2018), one student remarked, "It reminds us that nursing is more than the physical. We must focus on the psychological, spiritual, and emotional well-being of our patients. True healing starts when all aspects are cared for."

Question 7: For the experimental group- How did the students describe the influence of the Introduction to the Caring Concept Education Module on their simulation-based learning experience (SBLE)?

Based on participants' responses to this question, themes that reflect student perceptions of the influence of the intervention were identified and highlighted using qualitative content analysis in this research study. The CCEI assisted them to understand the importance of caring for patients and being

empathetic to their needs. It reminded them to address all patients' needs and be a source of support. One student remarked how experiencing the CCEI module prior was "an eye-opener and reality check about the caring concept. It reminded me to make sure I address all the patient's needs and to be a light during a vulnerable time for a patient."

Students mentioned that the simulation session prepared them for their role as nurses by replicating an environment to consciously care for and communicate with their patient. In addition, students mentioned that the module emphasized the importance of understanding and putting oneself in the shoes of patients, acknowledging that everyone goes through different experiences. Students also mentioned that the content of the eBook was informative, suggesting that it provided valuable knowledge and insights. It was reported that the examples from the movie clip, commercial and other content demonstrating compassionate, empathetic care resonated with some participants. The module reportedly gave students a shift in perspective to where they approached the simulation with a more caring and therapeutic focus rather than solely relying on specific nursing tasks and interventions. One student remarked,

> The caring concept influences me as a nursing student by allowing me to anchor myself when things get hard, or staff is not seeing eye-to-eye with me, especially as a student. It allows me to remember the work we are working for, and how many people need our help that are sick, emotionally unstable, sad or just in a tough point in their life...being a nurse is so much more than just performing skills and the simulation allows me to use that caring while working towards my goal of becoming an RN and overall, my skills I'll have in the hospital one day.

A theme that is most noteworthy was that some participants mentioned cultural and religious sensitivity as a significant consideration when providing care. One student reflected that it "reinforced

the importance of caring about the whole patient including their culture, backgrounds, feelings and experiences." Additional qualitative data included comments such as,

> The CCEI gave me significant insight on what people are dealing with that is not visible to the eye. The life and health of patients, family, staff is unknown at times. Being briefed allowed me to step into a sense of calmness and allowed me to realize how important the work I do and the way in which I do it is to the patient and their mental well-being, as well as emotional state.

The Popsicle scene taken from the film, Wit, (Nichols, 2001) resonated with many students. The scene demonstrated caring and compassionate care while also showing them how a nurse-patient relationship built on trust and respect can provide "positive care to the patient and make them feel comfortable."

In general, most of the students expressed that they enjoyed the simulation-based learning experience and found it beneficial to their nursing practice. Several responses highlighted the importance of patient communication, empathy and caring in nursing. Students appreciated the realistic and hands-on nature of simulation, which allowed them to practice caring behaviors in that environment. A few students commented on the value of both group and individual simulation-based learning experiences since in this simulation, each student was alone in the room. Students also mentioned the importance of patient-centered care which considers patients' emotions, concerns, and unique situations. Many remarked how the CCEI was a reminder to practice empathy, build trust, and increases confidence and comfort levels with patient interactions. Students also expressed how having opportunities to practice nursing skills such as vital sign and focused assessments were beneficial to their professional growth. Overall, the main themes revolved around positive learning experience, the significance of empathy and communication in nursing, and the effectiveness of simulation as a learning tool.

Summary

The aim of this study was to investigate the impact of a CCEI on students' demonstrations of caring behaviors during high-fidelity simulation. The study included a convenience sample of 40 participants who were divided equally into control and experimental groups. Faculty raters scored students' caring behaviors using the Caring Efficacy Scale-Simulation Faculty version (CES-SFV), and students' self-reported caring efficacy behaviors using the Caring Efficacy Scale-Simulation Student Version (CES-SSV). Demographic characteristics and their relationship with the students' scores were also examined. Psychological safety was a variable compared to students' caring efficacy as well. Lastly, open-ended questions were a qualitative component that added rich description to this research study.

A key finding of the study was that there was no significance in faculty-observed caring behaviors between the control and experimental groups. Additionally, there was no significance in students' caring efficacy scores between the control and experimental groups. Correlational analysis between demographic characteristics and student caring efficacy scores also did not yield any significant findings. Even though the CCEI had a positive impact on students' perceptions of caring efficacy found in their responses to the open-ended questions, the CCEI did not significantly affect faculty-observed caring behaviors or students' self-reported caring efficacy scores. Although there was a weak positive correlation between psychological safety and caring efficacy, it was not statistically significant.

The qualitative content analysis revealed strong positive responses by the participants. An overwhelming majority of the students emphasized the importance of deliberately practicing their caring, empathy, and communication skills in simulation-based experiences. Participants who received the educational intervention remarked how the module was an effective preparatory strategy that

influenced their abilities to demonstrate caring behaviors. The module underscored the importance of

caring and practicing holistic, patient-centered care.

CHAPTER 5: DISCUSSION

Preparing nursing students to deliberately practice caring behaviors using simulation-based education involves a comprehensive approach that should integrate caring theory with the practical application of caring behaviors and skills. To start with, preparing and briefing processes can ensure that learners have the knowledge, skills, and attitudes to engage in effective and meaningful interactions with their simulated patients. Simulation-based education can provide a safe environment in which nursing students can explore caring behaviors, through deliberate practice, to successfully transition and socialize into the nursing profession.

This chapter presents the findings, implications, and limitations of this study. The purpose of this quasi-experimental, comparative posttest design was to test the effectiveness of a caring concept educational intervention (CCEI) based on Jean Watson's Caritas Processes as a preparatory strategy on undergraduate nursing students' faculty-observed demonstration of caring behaviors and self-reported confidence in their ability to demonstrate caring. An additional purpose was to explore students' self-perceptions of how the CCEI influenced their ability to demonstrate caring behaviors to their simulated patient during high fidelity simulation and its potential impact on their future professional practice. This approach allowed the researcher to further expand upon the quantitative findings by obtaining rich qualitative data. Evaluating how students are preparing for and demonstrating caring behaviors during high-fidelity simulation can provide recommendations to support standardized integration of caring concepts into simulation-based education.

Watson's (2018) Theory of Human Caring provided the theoretical framework for this dissertation. Using a caring-focused theoretical framework can enhance nursing students' ability to demonstrate caring behaviors in simulated scenarios. Review of the literature was centered on exploring

the concept of caring and integrating it into simulation-based education in prelicensure nursing

curricula. This study explored and highlighted the importance of keeping the art of nursing in

undergraduate nursing education. It is this researcher's stance that simulation educators should provide a

safe environment for students to operationalize the caring concept in simulation-based learning

experiences. The demonstration of caring behaviors should be a universal learning objective

incorporated into every simulation scenario. Additionally, Kolb's Experiential Learning Model

supported the notion that simulation-based education bridges theory and practice by supporting the

integration of psychomotor and affective skills, cognitive learning, and professional socialization.

The research was conducted in a simulation center that provided the setting for the study. A

convenience sample of nursing students who had participated in at least two simulation-based

experiences was obtained. The sample size of 40 was divided equally into two groups and the research

was conducted over a two-week period. The control group completed their scheduled simulation

sessions and surveys first. The experimental group received the CCEI as an additional preparatory

activity before participating in their simulation sessions.

The Introduction to the Caring Concept Education Module was created as a preparatory strategy

for the experimental group to view prior to their scheduled simulation session. The module was viewed

the morning of the session. After viewing the module, the participants then accessed a virtual escape

room entitled Caring in a Simulated Environment via a QR code link. The purpose of the escape room

was to ensure the participants understood the content of the caring concept-based educational module by

successfully answering questions related to the content.

The researcher utilized a trained facilitator to run all the simulated sessions. The facilitator

followed HSSOBP™ (2021) guidelines and conducted the scenarios in a consistent matter, following a

standardized script for the scenario entitled, Activity, turning of a patient with hip fracture (Cato et al.,

2021). All consented participants completed the Caring Efficacy Scale-Simulation Student Version (CES-SSV). The Coates' Caring Efficacy Scale (CES) was designed to capture a student's level of confidence in their ability to express caring behaviors. Sitzman and Watson (2019) reported it to be an effective tool for measuring caritive factors and closely aligning with Watson's theory. Eggenberger et al. (2012) adapted Coates' original caring efficacy scale for use in a simulated setting. Based on the results from their research, this researcher utilized the simulation version for the study.

This study also examined the premise that if students perceived to be safe during their simulation-based experience, they would more engaged and inclined to express caring behaviors (Daniels et al., 2021). A psychological safety visual analog scale was adapted and included to capture students' perceptions in how safe they felt during their simulated session.

Discussion of Findings

Demographic data were collected for this study. Age, gender, ethnicity, marital and parental status, prior work, and caregiver experience were variables of interest. The convenience sample was a known limitation of this study. Every two years, the National Council of State Boards of Nursing (NCSBN) and the National Forum of State Nursing Workforce Centers (Forum) conduct a national survey on the United States nursing workforce. The majority of the sample in this research was predominantly female (85%) and between the ages of 21 and 29 years of age. Respondents from the National Nursing Workforce Study (2022) reported similar results in gender: female (88.5%); male (11.2%); and other/nonbinary (0.1%/0.3%). The median age of RNs was reported at 30-34 years (13.2%) and 65 years and older (13.2%). In terms of ethnic diversity, the convenience sample resembled national averages of registered nurses, with White/Caucasian participants accounting as a majority in the study. Hispanic (15%), African American (10%) and Asian (7.5%) participants comprised the remainder of the sample. As reported in the 2022 National Nursing Workforce Survey, the workforce is more

demographically diverse than in any other previous year (Smiley et al., 2023). However, there is a recognized need by many national nursing organizations to enhance diversity in the nursing profession (Rosseter, 2023). Analyses from this research study yielded no statistically significant differences in personal characteristics between the control and experimental groups. Additionally, there was no significant correlation between the demographic variables and caring efficacy scores.

This researcher hypothesized that prelicensure nursing students would demonstrate more caring behaviors after viewing the Caring Concept Educational Intervention (CCEI) than students who did not receive the educational intervention. The scores for this study showed no significant difference in faculty ratings of students in the two groups. Important to note, the total overall mean from the faculty-observed scores reflected a robust demonstration of caring efficacy amongst the participants during their sessions. A plausible explanation as to the higher scores would be that simulation is inherently designed to be a setting where students are observed by faculty. Students may have behaved differently as a result of their awareness of the faculty observation and video recording of the simulation sessions. The Hawthorne effect, a threat to the construct validity of the research, was possible because the participants were aware that they were being watched and recorded (Polit & Beck, 2017). In addition, students went into the simulated sessions alone, which was a novelty for them. This could have caused them to be overly enthusiastic in that setting, rather than a true reflection of their caring responses in other settings and conditions.

The results from the Caring Efficacy Scale-Simulation Student Version (CES-SSV) total averaged scores indicate that all participants felt confident in their ability to demonstrate caring in their simulated sessions. Purposively including caring practices to a simulated environment can enhance student engagement with, and demonstration of caring behaviors (Cara et al., 2020; Clapper & Kardong-Edgren, 2012; Clark, 2016; Lim & Marsaglia, 2018; Sitzman & Watson, 2019; Tabudlo, 2021). Despite

the lack of statistical significance between groups, this study supports the notion that simulation can be a suitable environment to learn, practice and apply caring behaviors for the purposes of increasing confidence and competence.

After quantitative analysis, the use of a caring concept educational intervention among the experimental group did not yield statistically significant results compared to the control group. However, the qualitative data collected from the experimental group explicated the importance of grounding simulation education in a caring framework. Participants from the experimental group mentioned that the CCEI helped them understand the importance of caring for patients and being empathetic towards their needs. Students reported that they gained valuable insight into different clinical situations and felt prepared for their roles as nurses. Qualitative findings also describe how the CCEI increased their focus and awareness on the importance of recognizing patients' individuality, feelings, and backgrounds. The preparatory module provided examples on how to demonstrate compassionate care which impacted students' abilities to include empathy in their patient care. Many reported that the CCEI was an important reminder to always demonstrate caring and compassion to their patients. The module also allowed students to consider a patient's culture, background and beliefs when providing care.

The Caring Efficacy Scales Simulation Student and Faculty versions demonstrated good internal consistency and reliability in this study. The Caring Efficacy Scale has been tested in clinical and educational settings and has been reported to be closely aligned to Watson's theory of Human Caring (Sitzman & Watson, 2019). There was a range noted in student caring efficacy scores across studies involving nursing simulation and the measurement of caring behaviors using Coates' Caring Efficacy Scale. Students' mean caring efficacy scores, in Eggenberger et al.'s study (2012) were reported at 4.24. Reid et al.'s (2015) study tested the psychometric properties of the CES and yielded mean caring scores

at 5.074. Analysis results from this research study yielded mean caring efficacy scores of the students at 5.31. These findings suggest that participants score themselves in moderately to high agreement when reporting their abilities to care in simulated environments.

The relationship between psychological safety and caring efficacy was investigated. The hypothesis for these variables was predicted to show a positive correlation between participants' perceptions of psychological safety and their caring self-efficacy scores. Whereas there was a small, positive correlation between the two variables, it was not statistically significant. The majority of the participants indicated high levels of psychological safety in their simulation sessions. This result, although not statistically significant, is an important component in simulation design. As an integral criterion of the HSSOBP ™ Simulation Design (Watts et al., 2021), creating a psychologically safe environment is paramount. It is important to utilize realistic scenarios, inclusive of caring concepts, to socialize nursing students into the profession. In this study, students felt psychologically safe in which they were more likely to actively be engaged in the simulation, participate, and take risks in their learning. A safe learning environment allows learners to openly share their thoughts and feelings as well as be vulnerable to engage and learn (Daniels et al., 2021). It is this researcher's stance that they felt safe to address the emotional aspects of patient care and prioritize patient-centered care during their simulation-based activity. Most students felt safe which led to their confidence in their demonstration of caring behaviors, making them more apt to be effective and competent caregivers in actual practice. In summary, students had high perceptions of psychological safety in this study. Students were able to develop their skills, effectively communicate, make mistakes, and openly discuss them without fear of criticism.

Literature and Findings

This study examined a preparatory strategy for undergraduate nursing students to learn, apply and demonstrate caring behaviors to their patient during high-fidelity simulation. By having clearly defined specific caring behaviors and aligning these objectives into a scenario, students were able to practice and demonstrate those behaviors. Studying caring efficacy and caring behaviors can have several potential future implications for the nursing profession and healthcare as a whole.

After a comprehensive review of current literature, many researchers have investigated the caring concept and how it can be measured and integrated into simulation-based education in prelicensure nursing curricula. Research studies have revealed that high-fidelity simulation can provide a conducive environment for caring behaviors to be deliberately practiced, honed, and measured (Benner, 2010; Bergen & Barber, 2019; Coates, 1997; Leach et al., 2021; Persaud & Thornton, 2018; Tabudlo, 2021; Thorp & Bassendowski, 2018). Findings from this research and other studies could influence nursing education curricula. Increased usage of simulation-based education can assist students in developing strong caring behaviors and efficacy before entering clinical practice. The literature and this research study reiterate the challenges in measuring caring empirically and underscores the importance of incorporating caring concepts in nursing education. Persaud & Thornton (2018) emphasized the notion that the use of simulation can facilitate experiences that allow students to intentionally focus on caring behaviors.

Collectively, findings suggest that simulation is a safe, nurturing, learning environment allowing for controlled and replicable scenarios which enable nursing students to practice caring behaviors (Benner, 2010; Bergen & Barber, 2019; Coates, 1997; Leach et al., 2021; Persaud & Thornton, 2018; Tabudlo, 2021; Thorp & Bassendowski, 2018). The researcher included a prop with an added verbal cue for the purpose of bringing in Watson's Caritas Second Process®: be authentically present, enable faith

and hope, and honor others. The addition of a rosary-beaded prayer bracelet was consistently present for all the simulations. Sitzman and Watson (2018) mention that this specific caritas process is sometimes overlooked; stating wellness and healing are closely affected by and related to spiritual, emotional, and energetic dimensions. This addition opened a possibility for nursing students to identify what was meaningful for their patient who was anxious about her upcoming surgery and wanted to hold her prayer beads. Many participants were able to respect their patient's need for spiritual support. Educators should include opportunities in their simulation designs that help students understand the holistic application of nursing care. As important, educators should emphasize the importance of care that reflects cultural competence and sensitivity which would promote deeper understanding of patients' diverse backgrounds and beliefs.

Qualitative results of this study demonstrated that a caring concept educational module, grounded in Watson's theory, provided conceptual clarity by making it easier for students to comprehend and operationalize the theory. Themes that were generated from this study were positive affirmations of why educators should include the successful deliberate practice of caring behaviors as a key learning objective. The inclusion of caring concept-based educational activities as a preparatory strategy could lead to more meaningful and impactful simulation-based experiences for nursing students. By setting clear learning objectives and increasing learners' awareness of caring behaviors, educators can better prepare nursing students for real clinical practice and improve their overall learning outcomes. Thorpe and Bassendowski (2018) also implied that the efficient use of simulation may catalyze the uptake and implementation of the affective domain- bringing these results to the forefront of pedagogical development for nursing curricula. Especially as technology advances, nursing simulations could become even more sophisticated, realistic settings for nursing students to practice caring behaviors. Virtual reality, augmented reality or AI-driven simulations have already begun to

emerge as clinical alternatives in nursing education. Further research is needed to support the inclusion of these emerging technologies. Educators must effectively harness its use and integration into nursing curricula. If research studies consistently yield positive correlations between high caring efficacy and improved patient outcomes, stakeholders such as healthcare institutions and policymakers may look to invest resources in simulation programs that enhance nurses' abilities to provide holistic care. Predictably, this investment could lead to increased patient satisfaction and decreased recovery times.

This simulation-based learning experience provided a safe environment for the students to deliberately practice their psychomotor, cognitive, and affective skills. Their responses highlight the significance of empathy, caring and empathetic communication in nursing education and practice, as well as the value of simulation in preparing nursing students for their future careers. As nursing education moves toward a competency-based curriculum, caring efficacy can be reliably measured in simulation, ensuring that they possess not only the psychomotor and cognitive skills set, but the affective as well.

As technology advances and healthcare environments evolve, the misuse of simulation education has the potential to negatively affect the professional socialization of future caregivers. Replicating real-world patient interactions must be used cautiously and thoughtfully. The importance of genuine human connection should never be overshadowed by simulation education. Dunnington and Farmer (2015) had posited that high-fidelity manikin-based simulation may not be the most optimal environment for expression of transpersonal behaviors such as enabling trust, faith, hope or spirituality.

Martimianakis et al. (2015) conducted a scoping review and thematic analysis on the concept of humanism as the "hidden curriculum." Especially within medical schools, the authors argue that technology and scientific innovations have eclipsed the relational aspects of care. They also argue that training should be refocused to include caring for patients as people. The authors state that better

teaching and regulation of professionalism should be present to promote humanism/caring in practice. They also posit that students most often receive cues that humanism is secondary to scientific knowledge. This study underscores the notion that relational aspects of care are marginalized in other health professions. The nursing profession faces similar threats with frequent staffing shortages, technology demands and inconsistent opportunities for nurses to explore the affective domain in prelicensure education and clinical environments.

Barriers of caring theory implementation also include the lack of knowledge about the caring concept and how to translate caring theory into practice. Brewer et al. (2020) recommend providing educational opportunities inclusive of theory-guided practice. Caring science can provide educators and practitioners with a framework which would promote, guide, and increase caring literacy. The Watson Caring Science Institute offers a Caritas Coach Education Program (CCEP), which could assist practitioners and educators to comprehend, integrate, translate, and apply the theory-guided knowledge into professional practice. A pretest-posttest descriptive design was used to evaluate changes in self-caring perceptions following the completion of the CCEP. Although sample size was small, participants who were educated with some caring knowledge demonstrated statistically significant changes in caritas measures.

Limitations of the Study

Polit and Beck (2017) state that rigor and validity in quantitative research strengthen any inferences that are made regarding cause-and-effect relationships. Several limitations were evident within this study. The convenience sample of participants was a limitation for this study. Due to the small sample size of forty participants, this study did not achieve sufficient statistical power. Results from this research were not significant, and it cannot be assumed that having a larger sample would have impacted the generalizability of the results.

The hypothesis made by this researcher was that the participants who received the CCEI as a preparatory activity might have demonstrated more caring behaviors than the control group. As stated earlier, the caring concept is difficult to measure empirically across settings. The experimental group received the intervention as intended. Constancy of conditions were maintained as the experimental group viewed the CCEI immediately prior to their simulation-based experiences. The amount of influence exerted by the intervention could have been a factor in this study. Even though the CCEI was reviewed for construct validity, the educational module might have needed additional content, or perhaps benefitted from the removal of extraneous content, which may have threatened validity. However, this intervention might better have been implemented as a preparatory strategy for more novice nursing students. It is possible that all participants from the sample were already inclined to be caring practitioners by having had clinical and simulation experiences as senior nursing students.

Simulation design is such that students are often observed by faculty. Many research studies rely on observers to rate caring behaviors. Observer bias can also present and be a threat to validity. In this study, despite advanced training of the instrument with the faculty, there were some differences in the faculty rater scores. In addition, participants' responses and behaviors might have been reactions to being in the simulation study. The students were aware of their voluntary participant status. The Hawthorne effect was a limitation that could not be mitigated in this study's research design. Also, the perceived fidelity, or realness, of the simulation could have influenced caring behaviors which may not have accurately reflected their behaviors in actual clinical settings. Simulation educators should also consider the use of a standardized patients when possible. A standardized patient is defined as a carefully trained and coached individual to portray a real patient during simulation (Loice et al., 2020). This would allow for more realism in simulation-based learning experiences.

The chosen scenario in this research study was designed for nursing students in a fundamentals course. Dunnington and Farmer (2015) mention that it is important to balance the cognitive, instrumental, and affective demand in simulation-based experiences. They suggest that caring is an essential dimension in nursing education, and it is important to keep caring as an integral component in each simulation. These researchers suggested that transpersonal behaviors were absent in their study. This researcher has noted the omission of learning objectives that address caring in previous research. For this study, the inclusion of a prop of prayer beads along with a verbal prompt, created an additional cue for students to consider the patient as a whole person with unique needs and preferences. Having focused on emotional and spiritual components of the simulation, students deliberately practiced and demonstrated caring behaviors while meeting their learning objectives of the scenario. Watson's Human Caring Theory (2018) stresses the significance of patient-centered care, and most participants recognized the simulated patient's concerns, emotions, and needs. The students were able to demonstrate their caring behaviors with therapeutic communication and nonverbal cues to convey empathy and compassion. This hands-on experience allowed them to translate the theory into practice in a simulated environment, fostering competence and confidence. This researcher posits that students who practice, adopt and internalize caring behaviors from their simulation-based experiences are more likely to carry them forward into their clinical practice as professional nurses.

Recommendation for Future Research

Continued research is needed to advance how caring concepts are taught, role-modeled, and integrated into simulation-based education. Caring behaviors are subjective and dependent on many contextual factors. Further research is needed to support the adoption of simulation-based education as a standard practice throughout prelicensure undergraduate nursing education to develop and refine caring skill demonstration. This could result in a more caring and compassionate nursing workforce. Nursing

simulation research studies that measure caring behaviors could also lead to discussions about culturally sensitive care delivery as well. Nursing students can also explore how to adapt their caring approaches to diverse populations.

In addition, conducting longitudinal studies to measure the impact of simulation-based education on nursing students' demonstration of caring behaviors are needed to track its effectiveness. Further research is needed to develop and standardize caring efficacy tools specifically for simulation education. As important, nurse scholars must continue to research the correlation between nursing students' demonstration of caring in simulations and patient outcomes in real clinical practice.

Conclusion

Clark (2016, p.10) stated,

As educators of future nurses, if we care for our students, if we want to be the true advocates of the healing potential of caring, if we follow our calling toward caring and healing, we are therefore inclined to support students in learning how to interconnect with others through transpersonal processes and to enact Watson's theory at the bedside. What are our obligations as educators to support nursing students in their endeavors to care for patients in ways that create sacred meaning to the art and science of nursing care?

Gaps, limitations, and challenges in nursing simulation education remain as to how to best prepare prelicensure nursing students for caring practice and socialization into the nursing profession. In this research study, students' responses to the open-ended questions suggest that deliberately practicing caring behaviors can deepen their understanding of the caring concept as it relates to their future professional nursing role. Intentionally including props like prayer beads and prompts or verbal cues related to spirituality in a simulation can create a space for interpersonal connections. Incorporating spiritual or cultural elements, simulation-based learning experiences can become reminders to students

to tap into their own spiritual or cultural beliefs or values. The environment can become a place for caring and connection. Participants may gain a deeper appreciation for their own as well as their patients' beliefs and perspectives.

In essence, prebriefing plays an essential role in creating a foundation for successful simulation-based learning activities. Clear learning objectives and preparatory activities may guide learners' efforts and promote their skill development, whether it be psychomotor, cognitive, and affective. It is this researcher's stance that by providing students with essential caring concepts and context as preparatory content, students will be able to actively participate and demonstrate them through meaningful, caring interactions with the simulated patient. Although the intervention did not significantly affect the results, it was evident in the students' comments that preparation and briefing led to increased understanding of the caring concept, facilitating their demonstration of caring behaviors. Students related their simulation-based learning experiences as positive, effective, relevant, and relatable to real clinical practice. It is essential to prepare and brief students on how to care as this will contribute to effective and impactful learning experiences for nursing students. This preparatory strategy, if universally adopted as a universal learning objective in every simulation-based learning experience, can ultimately translate into increased demonstration of caring behaviors, and positive patient outcomes in real healthcare settings.

Fostering a lifelong commitment to learning, educators must encourage nursing students to continually explore new ways of deepening their interconnectedness to the patients they will care for. Forever inspired by the work of Dr. Jean Watson and all the nurse scientists who have researched the caring phenomena, this researcher is dedicated to preparing the next generation of nursing professionals who will be capable of creating sacred and meaningful connections with their patients in every

encounter. This notion will ultimately perpetuate the defining attributes of the nursing profession as a science AND art.

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APPENDIX A: IRB RELIANCE AGREEMENT, MOLLOY UNIVERSITY

MOLLOY UNIVERSITY IRB RELIANCE AGREEMENT

Institution or Organization Providing IRB Review (A):

Name (Institution/Organization A): Long Island University Institutional Review Board	IRB Registration # 23/02-014	Federal wide Assurance(FWA) # 000002426

Institution Relying on the Designated IRB (B):

Name: MOLLOY UNIVERSITY 1000 Hempstead Avenue Rockville Centre, New York 11571-5002

IRB Registration: #:00008816

FWA#: # 00020043

Molloy IRB Contact: Chairperson: Patricia Eckardt, Ph.D., R.N., FAAN

Email : irb@molloy.edu

The Officials signing below agree that MOLLOY UNIVERSITY (B) may rely on the designated IRB (A) for review and continuing oversight of its human subjects research described below:

THIS AGREEMENT IS LIMITED TO THE FOLLOWING SPECIFIC PROTOCOL

Name of Research Project with Approval and Expiration Dates: Evaluation of Caring Behaviors in High-Fidelity Simulation Following a Caring Concept Educational Intervention

Designated IRB (A) Approval #: 23/02-014

VA

Sponsor or Funding Agency: NA
Award Number:

1

MOLLOY UNIVERSITY IRB RELIANCE AGREEMENT

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

E-Signature of Signatory Official (Institution/Organization A):
[signature]
Date: 2/14/23
Print Full Name: Jared Littman, PhD
Institutional Title: Executive Director, Office of Sponsored Projects
Address: 720 Northern Blvd, Brookville NY
Contact Email: jared.littman@liu.edu
Phone: 516-299-3618

E-Signature of Signatory Official (Institution/Organization B))MOLLOY UNIVERSITY
Date:
Print Full Name:
Institutional Title:
Address:
Contact Email:
Phone:

2

APPENDIX B: LONG ISLAND UNIVERSITY IRB APPROVAL

LONG ISLAND UNIVERSITY

NOTICE TO ALL RESEARCHERS:
Please be aware that a protocol violation (e.g., failure to submit a modification for any change) of an IRB approved protocol may result in mandatory remedial education, additional audits, re-consenting subjects, researcher probation, suspension of any research protocol at issue, suspension of additional existing research protocols, invalidation of all research conducted under the research protocol at issue, and further appropriate consequences as determined by the IRB and the Institutional Officer.

TO:
Debra McWilliams - Principal Investigator
AnnMarie Paraszczuk, Ed.D, RNC-NIC, IBCLC - Dissertation committee
         member
Lori Persico, PhD - Dissertation committee member
Peter Magri - Dept Chair
Victoria Siegel, Ed.D - Dissertation committee member

FROM: LIU Institutional Review Board

DATE: February 02, 2023

PROTOCOL TITLE: Evaluation of Caring Behaviors in High-Fidelity Simulation Following a Caring Concept Educational Intervention

PROTOCOL ID NO: 23/02-014

REVIEW TYPE: Exempt

ACTION: IRB Exempt Determination/Approval

Your application has been reviewed using the University's Institutional Review Board's (IRB) administrative review process and can be considered to be an EXEMPT methodology/approach as defined in 45 CFR 46.104.d.3:

Category 3: Research involving benign behavioral interventions in conjunction with the collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection and at least one of the following criteria is met: i. The information obtained is recorded by the investigator in such a manner that identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects, ii. Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation, or iii. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subject, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

Please note: Revisions and amendments to the research activity must be promptly reported to the

IRB for review and approval prior to the commencement of the revised protocol. **If the project is amended so that it is no longer considered to be exempt research as per the federal definitions, it will be necessary for the investigators to submit an application for full committee review.**

LIU
LONG ISLAND UNIVERSITY

Verification of Institutional Review Board (IRB) Exempt Determination/Approval

LIU IRB ID: 23/02-014

Project Title: Evaluation of Caring Behaviors in High-Fidelity Simulation Following a Caring Concept Educational Intervention

APPENDIX C: PERMISSION LETTER FROM THE ASSOCIATE DEAN AT LIU

SCHOOL OF HEALTH PROFESSIONS AND NURSING
720 Northern Boulevard
Brookville,NY
11548-1300
516.299.2320 /516.299.2352 Fax

October 7, 2022

Dear Debra,

Thank you for your interest in conducting your doctoral research through the LIU Nursing Program. I have read your research proposal and give my permission for you to conduct the research with our senior nursing students pending their signed consent.

I wish you all the best as you go forward with this study on caring in a simulated environment.

Warmest regards,

Dr Margaret Stroehlein

Dr Margaret Stroehlein DNP,ANP-BC,RN,CNEcl
Associate Dean
School of Health Professions and Nursing
LIU Post
720 Northern Blvd.
Brookville, NY 11548
Life Science Bldg
516-299-4052

APPENDIX D: PERMISSION TO USE COATES' CARING EFFICACY SCALES

CC Carolie Coates <carolie.coates@gmail.com>
To: Debra McWilliams

Mon 4/11/2022 6:23 PM

📄 CARINGBSLF.doc
37 KB

✉ Fw_ scoring of CES.eml
Outlook Item

📄 poster ccfinal referencesCES ...
30 KB

⌄ 3 attachments (75 KB)   ☁ Save all to OneDrive - Molloy College   ⬇ Download all

If you will confirm this email, I will send relevant attachments. I also need to know how you want to handle permission letter. There is one time 50. Charge per study. You can contact me with questions re scoring and interpretation as you move through the process.

Carolie Coates PhD
Cell 303 502 6535
1441

KK Kathryn Keller <kkeller@health.fau.edu>
To: Debra McWilliams

Thu 4/7/2022 6:51 PM

📄 Caring Efficacy Scale Student...
40 KB

📄 CaringEfficacyFacultyRevised....
42 KB

⌄ Show all 3 attachments (1 MB)   ☁ Save all to OneDrive - Molloy College   ⬇ Download all

CAUTION
This message originated outside of Molloy College. Do not click links or open attachments unless you are sure the content is safe

Dear Debra, I just tried to call you. She has given permission for you to use the scale and requested me to send it to her but in the interest of time I am going to forward to you. I will forward that email. If you wish for me to write a letter for the IRB I will do that. I think at this point it will be faster for me to help you. Hope it is not too late. Sorry for all the delay. Best, Kathryn

Kathryn B. Keller, PhD, RN, CNE
Professor & Graduate Coordinator Nurse Educator Concentration
Associate Director of Interprofessional Education & Practice
Christine E. Lynn College of Nursing
Florida Atlantic University
777 Glades Road, NU 320
Boca Raton, Florida 33431
kkeller@health.fau.edu

APPENDIX E: RECRUITMENT FLYER

VOLUNTEERS NEEDED FOR RESEARCH
Caring in a Simulated Environment

Research is being conducted to assess the effectiveness of an educational intervention in high fidelity simulation

*The Principle Investigator (Debra McWilliams) is a Doctoral student/candidate at Molloy University. This project will be conducted in the LIU Interprofessional Simulation Center. This project is required to fulfill requirements for PhD Dissertation Completion.

Participants needed- Senior nursing students who have participated in 2 simulation activities at LIU

Procedure details: If interested, participation in this research involves a brief pre-assignment reading, the nursing simulation, and survey completion.

Time Commitment: The pre-simulation assignment will take approximately five minutes to read. The actual simulation session will take approximately one hour. The debriefing session provided after the research activity will be conducted via zoom after all participants have completed the requirements of the study.

*If you are randomly selected to receive the educational module before simulation, an additional time commitment of approximately 40 minutes will be required.

When: *Information sessions will be held during the Senior Capstone class times with the permission of Dr. Magri and Dr. Darcy.

*Simulation Sessions will be scheduled via LIU email during the spring 2023 semester starting in February and ending Wednesday, May 3rd, 2023. Dates will be offered on Mondays and Wednesdays either before or after your Capstone lecture time.

*All eligible participants will receive a $5 Starbucks gift card, letter of research participation and an entry into a raffle to win a basketful of Nursing Merch valued at $100 after the post-simulation survey is completed. Basket raffle drawing will be held at the end of the debriefing session via zoom. Participants must join the zoom debrief to win the basket. Arrangements will be made to deliver the basket to the lucky participant!

THANK YOU IN ADVANCE- YOUR PARTICIPATION IS SO APPRECIATED!

APPENDIX F: LIU IRB PARTICIPANT INFORMED CONSENT FORM

LONG ISLAND UNIVERSITY
INSTITUTIONAL REVIEW BOARD (IRB)

RESEARCH PARTICIPANT INFORMED CONSENT FORM

Study Title: Evaluation of Caring Behaviors in High Fidelity Simulation Following a Caring

Concept Educational Intervention

Principal Investigator: Debra McWilliams

Interprofessional Simulation Center Director

LIU Post; School of Health Professions & Nursing

720 Northern Boulevard; Life Sciences Bldg Rm270A

Brookville, NY 11548

Office: (516) 299-4065

Cell: (516) 728-4700

Email: debra.mcwilliams@liu.edu

You are being asked to join a research study. Participation in this study is voluntary. Even if you decide to join now, you can change your mind later.

1. **Research Summary (Key Information):**
   The information in this section is intended to be an introduction to the study only. Complete details of the study are listed in the sections below. If you are considering participation in the study, the entire document should be discussed with you before you make your final decision. You can ask questions about the study now and at any time in the future.

- Researcher (who is not your course instructor) will ask participants to assume the role of registered nurse in a high-fidelity simulation and consent to be videotaped. You will also have to answer questions via an electronic survey tool after the simulation.
- Participation in this study will be independent of any academic coursework required of you during the semester.
- Participation is this study is voluntary.
- Inclusion criteria: senior nursing students, nursing students who have participated in at least two high-fidelity simulation experiences at LIU, and those who choose to volunteer in the research study.
- Exclusion criteria: Those who have not had two high-fidelity simulation experiences; those who do not volunteer to participate in the study.
- Risks: There are no anticipated risks to participate in this study. If a student does not feel psychologically safe in the simulation session, participants will be assured that simulation will be paused and stopped if participants feel they could not continue or could withdraw from the study without penalty.
- Benefits: Participants will gain education from an added simulation-based experience as a student in an undergraduate, prelicensure nursing program.
- Time Commitment: The pre-simulation assignment will take approximately five minutes to read, and any other optional time for any medication, equipment and skill review needed to refamiliarize oneself. The actual simulation session will take approximately one hour. The

debriefing session provided after the research activity will be optional. The debriefing session will take approximately 30-40 minutes and will complete the eligibility criteria for raffle entry. One group will receive an added preparatory activity prior to their simulation session. If enrolled in this group, an added time commitment of approximately 40 minutes will be needed. The group that does not get the added preparation prior to their simulation session will receive the activity after completing the simulation sessions and post-simulation survey.

- Privacy will be kept, and pseudonyms/personal numeric codes will be used to identify participants.
- Compensation: $5 Starbucks gift cards and a letter of research participation will be given to eligible participants for your personal resumes after the simulation session/survey completion. The chance to win a basketful of nursing merchandise valued at $100 will be given post-survey completion as well. However, to be entered into the raffle drawing, you must attend the debriefing session scheduled on Wednesday, May 3rd at 8pm via zoom.
- Data will be collected, compared and analyzed from two completed surveys; a student perception survey tool as well as faculty rater observed behavior survey tool via video-recorded simulation sessions of participants.

2.   Why is this research being done?

This research is part of a doctoral dissertation, and the research is being done to test the

effectiveness of a caring concept educational intervention (CCEI) on undergraduate nursing

students' observed demonstration of caring behaviors and self-reported confidence in their

ability to demonstrate caring. An added purpose is to explore how the added educational activity

affected students' perceptions and abilities to apply caring behaviors to their simulated patient

during high fidelity simulation.

- Inclusion criteria: senior nursing students, nursing students who have participated in at least two high-fidelity simulation experiences at LIU, and those that choose to volunteer in the research study.
- Exclusion criteria: Those who have not had two high-fidelity simulation experiences; those who do not volunteer to participate in the study.

3.   What will happen if you join this study?

If you agree to be in this study, we will ask you to do the following things:

- After signing a consent form, participants will be divided into two groups and schedule themselves for a personal simulation session date and time that is offered.
- All participants will receive a pre-simulation assignment a week prior to their scheduled simulation date and time which will prepare you for your simulation. The assignment will include the scenario overview, medications, equipment and associated skills you may be asked to administer. It will take about 5 minutes to read the pre-simulation assignment, and possibly additional time to familiarize yourselves with the required content for the scenario.
- Before the simulation, all participants will view a briefing video which orients participants to the environment and resources, equipment and logistics.
- One group will receive an additional educational learning module before the simulation, and the other group will receive the educational activity after via email.
- Each student will participate in their own 15-minute scenario which will be video recorded. You will be asked to use a fictitious name during the session to protect your identity.
- Participants will fill out a survey anonymously.
- The time commitment- Pre-simulation assignment (5min); simulation session including survey completion (approx. 1 hour). If randomly selected to receive the educational module before the simulation session, an additional time of 30-40 minutes will be added to your time of your simulation session. The participants who were randomly assigned to the other group, will receive the educational module via email after the simulation session- to view at your own leisure.
- Participants will have the opportunity to attend a debriefing via zoom, scheduled for Wednesday, May 3rd at 8pm. To be eligible for the raffle-basket drawing, you must attend the zoom debriefing session. The winner will be chosen at the end of the debriefing session by picking the lucky participant's number out of a hat. The researcher will make arrangements with the winner to receive the basket valued at $100.

Photographs/Video recordings:

As part of this research, we are requesting your permission to create and use

audio/videorecording of your simulation-based experience which will be viewed by a trained

faculty member for the purpose of scoring a survey. Any of the recordings will not be used for

advertising or non-study related purposes.

You should know that:

- You may request that the recording of the simulation be stopped at any time.
- If you agree to allow the simulation to be recorded and then change your mind, you may ask us to destroy that imaging/recording. If the imaging/recording has had all identifiers removed, we may not be able to do this.
- We will only use these recorded simulations for the purposes of this research.

Please indicate your decision below by checking the appropriate statement:

_____I **agree** to allow the study to make and use photographs/video recordings/audio

recordings of me (or the participant I represent) for the purpose of this study.

_____I **do not agree** to allow the study team to make and use photographs/video

recordings/audio recordings of me (or the participant I represent) for the purpose of this

study, and I am aware that I cannot participate in this research study.

_____

Participant Name Printed

_____   _____

Participant Signature   Date

(or Legally Authorized Representative Signature, if applicable)

How long will you be in the study?

Participation in the study could take a minimum of one hour or a maximum of two hours.

What are the risks or discomforts of the study?

- There are minimal risks anticipated.
- Simulation sessions will be conducted in person as been experienced in previous courses.
- Students will assume the role of the registered nurse in the simulated session. It is not possible to identify all potential risks in research; however, reasonable safeguards have been taken to minimize known risks.
- If new findings develop during the research, which may change your willingness to participate, we will tell you about these findings.
- If for some unanticipated reason any psychological discomfort occurs, the simulation will be halted, and the student will be offered resources to the Center for Healthy Living Office.
- The study will be published but without any student identifiers.
- The risks associated with participation in this study are no greater than those encountered in daily life or during the performance of routine simulation-based experiences.
- You may get tired or bored when we are asking you questions, or you are completing

  questionnaires. You do not have to answer any question you do not want to answer.

Although your IP Address will not be stored in the survey results, there is always the possibility

of tampering from an outside source when using the Internet for collecting information. While

the confidentiality of your responses will be protected once the data is downloaded from the

Internet, there is always the possibility of hacking or other security breaches that could threaten

the confidentiality of your responses.

Note that **Google Survey** has specific privacy policies of their own. You should be aware that

these web services may be able to link your responses to your ID in ways that are not bound by

this consent form and the data confidentiality procedures used in this study. If you have

concerns, you should consult these services directly.

Even if identifiers are removed, the information will not be used or distributed for future

research studies.

Participation in this study may involve risks that cannot be foreseen at this time.

4.   Are there benefits to being in the study?
You may or may not benefit from being in this study. You will receive an additional simulation-

based educational experience. This study may benefit society if the results lead to a better

understanding of how best to prepare prelicensure students during simulation to practice caring

behaviors.

5.   What are your options if you do not want to be in the study?

Your participation in this research is voluntary and your choice. If you decide to participate in

the study, you may change your mind and stop participating at any time without penalty or loss

of benefits to which you are already entitled.

If you do not join, your employment/education at Long Island University will not be affected.

6.   Will it cost you anything to be in this study?
There is no cost to participate in this study.

7. **Will you be paid if you join this study?**

By participating in this research and compensating for your time, you will receive a $5 Starbucks gift card and a letter of research participation for professional leadership activities at the LIU School of Nursing. Furthermore, by attending the debriefing zoom session after all of the sessions have finished, you will be eligible to win the basketful of nursing merchandise. You understand that you may stop participation at any time. However, you also understand that you will only receive the research compensation if you complete the research protocol, and your participation is deemed adequate.

8. **Can you leave the study early?**

- If you experience any psychological discomfort during the simulation or have personal reasons to withdraw, you can withdraw from study at any time.

- If you want to withdraw from the study, please notify the simulation facilitator at any point of your scheduled simulation-based experience.

- Leaving this study early will not affect your education.

9. **How will the confidentiality of your biospecimens and/or data be protected?**

Any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the Long Island University Institutional Review Board and officials from government agencies such as the National Institutes of Health and the Office for Human Research Protections. (All of these people are required to keep your identity confidential.) Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

- All information you supply during the research will be held in confidence to the extent provided by the law.
- Each participant will pick a random code number for all survey data entries.

- Each participant will also use a fictitious name (pseudonym) when introducing themselves during their recorded simulation sessions.
- The informed consent form will be kept in a locked file in my office.
- When the study is completed and the data have been analyzed, the list will be destroyed.

10. What other things should you know about this research study?

What is the Institutional Review Board (IRB) and how does it protect you?

This project has been approved by LIU/Molloy University IRBs. This study has been reviewed by an Institutional Review Board (IRB), a group of people that reviews human research studies. The IRB can help you if you have questions about your rights as a research participant or if you have other questions, concerns or complaints about this research study. You may contact the IRB at osp@liu.edu.

What should you do if you have questions about the study?

If you have any further questions, you may contact Principal Investigator (Professor Debra McWilliams, on following phone number (516) 299-4065 or by e-mail-

debra.mcwilliams@liu.edu

You can also contact the department chair, Dr. Peter Magri at peter.magri@liu.edu or on the following.

phone number 516-299-3656. If you cannot reach the investigators or wish to talk to someone else, contact the IRB office at osp@liu.edu

- You can ask questions about this research study now or at any time during the study.

- If you have questions about your rights as a research participant or feel that you have not been treated fairly, please call the Institutional Review Board at Long Island University at osp@liu.edu. **OR**
- You may also contact my Doctoral Dissertation Chairperson, Dr. Ann Marie Paraszczuk @ Aparaszczuk@molloy.edu, (516) 323-3000.
- If you have questions about your rights, an unresolved question, a concern or complaint about this research you may contact the IRB contact the Molloy IRB office at irb@molloy.edu or call 516 323 3000.

11.   What does your signature on this consent form mean?

Your signature on this form means that: You understand the information given to you in this

form, you accept the provisions in the form, and you agree to join the study. You will not give

up any legal rights by signing this consent form.

WE WILL GIVE YOU A COPY OF THIS SIGNED AND DATED CONSENT

FORM

_____

Signature of Participant   (Print Name)

        Date/Time

_____

Signature of Person Obtaining Consent   (Print Name)

        Date/Time

NOTE: A COPY OF THE SIGNED, DATED CONSENT FORM MUST BE KEPT BY THE PRINCIPAL INVESTIGATOR; A

COPY MUST BE GIVEN TO THE PARTICIPANT.

APPENDIX G: LIU STUDENT SURVEY

LONG ISLAND UNIVERSITY

0% Complete

CARING EFFICACY SCALE

Instructions: When completing these items, reflect on your practice in this simulated clinical experience. Complete the following scale based on your encounter with the patient/family in this nursing situation. Please indicate your degree of agreement with each item.

Rating Scale:

- 3 Strongly Disagree
-2 Moderately Disagree
-1 Slightly Disagree
+1 Slightly Agree
+2 Moderately Agree
+3 Strongly Agree

Please indicate your level of agreement with the following statements:

	-3 strongly disagree	-2 moderately disagree	-1 slightly disagree	+1 slightly agree	+2 moderately agree	+3 strongly agree
	1	2	3	4	5	6
I did not feel confident in my ability to express a sense of caring to my patient/family.	○	○	○	○	○	○
If I did not relate well to the patient/family, I tried to analyze what I could do to reach him/her.	○	○	○	○	○	○
I felt comfortable in touching my patient/family in the course of care giving.	○	○	○	○	○	○
I conveyed a sense of personal strength to my patient/family.	○	○	○	○	○	○
The patient/family could tell me most anything and I was not shocked.	○	○	○	○	○	○
I had an ability to introduce a sense of normalcy in this stressful condition.	○	○	○	○	○	○
It was easy for me to consider the multi-facets of this patient/family care, at the same time as I was listening to them.	○	○	○	○	○	○
I had difficulty in suspending my personal beliefs and biases in order to hear and accept the patient/family as people.	○	○	○	○	○	○
I walked into this room with a presence of serenity and energy that made the patient/family feel better.	○	○	○	○	○	○
I was able to tune into this particular patient/family and forget my personal concerns.	○	○	○	○	○	○
I created ways to relate to this patient/family.	○	○	○	○	○	○
I lacked confidence in my ability to talk to this patient/family if their backgrounds differed from my own.	○	○	○	○	○	○
I feel if I talked to this patient/family on an individual, personal basis, things might have gotten out of control.	○	○	○	○	○	○
I used what I learned in conversation with this patient/family to provide more individualized care.	○	○	○	○	○	○
I didn't feel strong enough to listen to the fears and concerns of my patient/family.	○	○	○	○	○	○

Even when I felt self-confident about most things, still seemed to be unable to relate to this patient/family.	○	○	○	○	○	○
I seemed to have trouble relating to this patient/family.	○	○	○	○	○	○
I was able to establish a close relationship with my patient/family.	○	○	○	○	○	○
I was able to get this patient/family to like me.	○	○	○	○	○	○
I found it hard to get my point of view across to the patient/family when I needed to.	○	○	○	○	○	○
When trying to resolve a conflict with this patient/family, made it worse.	○	○	○	○	○	○
If I thought the patient/family was uneasy or needed some help, I approached them.	○	○	○	○	○	○
If I found it hard to relate to this patient/family, I stopped trying to work with them.	○	○	○	○	○	○
I often find it hard to relate to patient/family from a different culture than mine.	○	○	○	○	○	○
I helped this patient/family through my ability to develop close, meaningful relationships.	○	○	○	○	○	○
I found it difficult to express empathy with this patient/family.	○	○	○	○	○	○
I become overwhelmed by the nature of the problems this patient/family were experiencing.	○	○	○	○	○	○
When this patient/family was having difficulty communicating with me, I was able to adjust to his/her level.	○	○	○	○	○	○
Even when I tried, I couldn't get through to this difficult patient/family.	○	○	○	○	○	○
I didn't use creative or unusual ways to express caring to my patient/family.	○	○	○	○	○	○

Thank you in advance for completing this survey and for being part of this research study.
Please read each question carefully and answer each question based on your perception of the simulation-based experience.

Personal Identity Code Number - Please do not include any personal identifying information on this survey.

[   ]

Demographic Survey Directions: Please select the best answer. Please round to whole numbers.

What category below includes your age?
- ○ 18-20
- ○ 21-29
- ○ 30-39
- ○ 40-49
- ○ 50-59
- ○ 60 or older

What gender do you choose to identify as?
- ○ Male
- ○ Female
- ○ Other
  [   ]
- ○ Prefer not to answer

What ethnicity?
- ○ Black or African-American
- ○ White
- ○ Asian
- ○ American Indian or Alaskan Native
- ○ Native Hawaiian or other Pacific Islander
- ○ Multiple Races
- ○ Other
  [   ]

Question 35 ———

Are you now married, widowed, divorced, separated or never married?

○ Married
○ Widowed
○ Divorced
○ Separated
○ Never married
○ Prefer not to answer
○ Other

[   ]

Question 36 ———

Are you a parent or guardian of one or more children?

○ Yes
○ No

Question 37 ———

How much prior WORK experience in a health care setting as a patient care technician or patient care associate?

○ Less than one year
○ One to three years
○ Four to ten years
○ Ten to 20 years
○ No experience to date
○ Other

[   ]

Question 38 ———

How much personal experience have you had as a caregiver outside the health care setting? (not including parenting experience)

☐ Less than one year
☐ One to three years
☐ Four to ten years
☐ Ten to 20 years
☐ No experience to date
☐ Other

[   ]

How many simulations have you had experience with? Select all that apply

☐ Safety Simulation
☐ Med/Surg II Simulation
☐ Pediatric Simulation
☐ Other

[   ]

50% Complete

Psychological Safety Visual Analog Scale (Persico, 2017)

The definition of psychological safety - the established environment provided boundaries and trust, allowing me to feel accepted and respected.

Please choose the number that best scores the psychological safety you experienced during the simulation-based experience.

○ 1- I did not feel safe at all
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
○ 8
○ 9
○ 10 I felt extremely safe

Qualitative Questions about your Simulation-based experience today.

In your own words, please reflect and answer the questions below.

Question 41

If you received the Caring Concept Educational Intervention (CCEI) module **PRIOR** to your simulation, please describe how the CCEI affected your simulation-based experience (SBE) today. Please put down N/A if you didn't receive the education module before your simulation.

Question 42

Please describe how deliberate practicing of the caring concept within simulation-based experiences relates to your clinical practice as a nursing student and your future professional role as a nurse?

Question 43

What else would you like to say about today's simulated clinical experience?