Nurse educators have been faced with a paradigm shift in order to meet the needs of a technologically advanced generation. Today’s healthcare demands, nursing shortages, and high student-to-faculty ratios require innovative methodologies that facilitate clinical reasoning and clinical judgement (Campbell & Daley, 2013). These factors often dictate a student’s clinical experience by significantly limiting their opportunity to perform nursing skills safely (Richardson & Claman, 2014). Research indicates that new graduates enter the nursing profession feeling unprepared to proficiently meet the challenges of patient care (Richardson & Claman, 2014). This pilot voluntary study examined the use of high-fidelity simulation (HFS) on learning outcomes by incorporating the knowledge, skills, and attitudes needed to perform competent patient care.

By using a post-test design, this study examined the relationship of HFS and achievement of learning outcomes amongst Bachelor of Science in Nursing (BSN) students (n=20) when performing central venous access device (CVAD) care. A simulation activity was designed and implemented to an intervention group (IG) in Nursing and the Adult II (NURS 355) at Nicholls State University (NSU) while the control group (CG) received traditional instruction. Both groups were evaluated and numerically scored by use of a rubric. The quantitative data obtained in this study links the use of HFS with achievement of course outcomes.

Current literature suggests HFS activities to be directly correlated with improved clinical reasoning, the student’s ability to link theory to practice, and the development of professional communication skills in the healthcare arena (Press & Prytula, 2018). Simulation can further facilitate safe practices in nursing by allowing students to react to realistic clinical scenarios in a controlled environment (Press & Prytula, 2018). Successful implementation of this methodology should include the following criteria: learning objectives that align with course content; group size not exceeding six students; establishment of a definitive time limit for the activity; maintaining the scope of practice; and appropriately trained faculty to play the role of facilitator (Press & Prytula, 2018). Although data supports a positive relationship between simulation and overall acquisition of knowledge, this learning experience is often excluded as a mandatory component in BSN curriculums (Press & Prytula, 2018). A qualitative study to determine the experiences of 17 BSN instructors as they implemented high fidelity simulation into their curriculum indicated that educators desired to feel a sense of self-efficacy and autonomy with this practice, regardless of their experience with HFS (Press & Prytula, 2018). Participants also expressed the value of practicing in a realistic and safe environment and felt that students were able to convey insecurities that were often overlooked in the clinical setting. The incorporation of simulation left faculty with a sense of pride and accomplishment for their program. The recommendations and emerged
themes further strengthen the need for additional research and methods of implementation within BSN curriculums.

Studies have indicated that less than 36% of BSN graduates meet the entry-level standards needed for clinical reasoning skills and the safe delivery of care (Richardson & Claman, 2014). The theatre of high fidelity simulation (THFS) education model validated that students who receive didactic lecture of theoretical content followed by simulation are able to apply knowledge of content to clinical scenarios while learning how to professionally react and communicate (Richardson & Claman, 2014). These controlled activities aide in the refinement of clinical competencies and conflict resolution (Richardson & Claman, 2014). Additional research would benefit the future of nursing education by providing programs with effective methods of implementation for faculty and for achieving student learning outcomes.

Contemporary nursing students are conditioned to utilize technology while multitasking (Campbell & Daley, 2013). Therefore, nurse educators must develop innovative methodologies that incorporate the strengths of this tech savvy generation. According to Campbell and Daley (2013), “repetitions, visual, and auditory and kinesthetic simulation in an environment where students can move and interact while learning, provide the variety of stimuli needed” (p. 5). BSN programs have the autonomy to develop simulation activities that align with the curriculum and promote achievement of learning outcomes. When developing a scenario, it is important to limit group size and establish a time limit. Benner’s Novice to Expert Theory was instrumental in the development of this study. Novice nursing students have limited clinical experiences and consequentially have difficulty understanding theoretical concepts in relation to nursing skills and practices. Through the incorporation of simulation, nurse educators are able to progress nursing students to the next stage of Benner’s model, which is advanced beginner.

Title:
Central Intravenous Skills Using High-Fidelity Simulation Versus Traditional Methodologies Among Undergraduate Nursing Student

Keywords:
Clinical Reasoning, High Fidelity Simulation and Nursing Education

References:
Abstract Summary:
Nurse educators have been faced with a paradigm shift in meeting the needs of a technologically advanced generation. Healthcare demands and high faculty to student ratios require methodologies that facilitate clinical reasoning. This study examines the relationship of simulation in achieving learning outcomes by incorporating the knowledge and attitudes required.

Content Outline:
1. Introduction
   1. Today’s healthcare demands, nursing shortages, and high student-to-faculty ratios require innovative methodologies that facilitate clinical reasoning and clinical judgement (Campbell & Daley, 2009).
   2. This pilot voluntary study examined the use of high-fidelity simulation (HFS) on learning outcomes by incorporating the knowledge, skills, and attitudes needed to perform competent patient care.
   3. Participants included undergraduate nursing students who are currently enrolled in Nursing and the Adult II (NURS 355) at Nicholls State University (NSU).
2. Body
   1. New graduates enter the nursing profession feeling unprepared to proficiently meet the challenges of patient care.
   1. Studies indicated that less than 36% of BSN graduates meet the entry-level standards needed for clinical reasoning skills and the safe delivery of care (Richardson & Claman, 2014).
   2. Current literature suggests HFS activities to be directly correlated with improved clinical reasoning, the student’s ability to link theory to practice, and the development of professional communication skills in the healthcare arena (Press & Prytula, 2018).
   2. Patricia Benner’s conceptual framework guided this study. Benner’s Novice to Expert Model states that nurses’ transition within five stages throughout their career (Butts & Rich, 2015).
1. Nursing students are identified as a novice, a stage classified by being inexperienced and rigidly practicing skills according to textbook guidelines (Butts & Rich, 2015).
2. Incorporation of HFS would further advance nursing students to the next phase of Benner’s model prior to graduation, which is advanced beginner.
3. Successful implementation of this methodology should include the following criteria: learning objectives that align with course content; group size not exceeding six students; establishment of a definitive time limit for the activity; maintaining the scope of practice; and appropriately trained faculty to play the role of facilitator (Press & Prytula, 2018).

1. Data supports that HFS activities have the ability to extend knowledge acquisition beyond the scope of technical skills associated with patient care (Harris et al, 2014).
2. Research supports that the investment in simulation for both faculty and curriculum development plays a significant role in promoting safe patient care as well as competent BSN graduates.

III. Conclusion
1. Contemporary nursing students are conditioned to utilize technology while multitasking and nurse educators must develop innovative methodologies that incorporate the strengths of this tech savvy generation (Campbell & Daley, 2013).
2. BSN programs have the autonomy to develop simulation activities that align with the curriculum and promote achievement of learning outcomes.

First Primary Presenting Author

Primary Presenting Author
Kristie O. Hartman, MSN
Nicholls State University
College of Nursing and Allied Health
Nursing Instructor
Thibodaux LA
USA

Author Summary: Kristie Hartman is a Nursing instructor at Nicholls State University in Thibodaux, Louisiana. She graduated with her BSN in 2003 and her MSN in 2019. Kristie currently teaches Medical-Surgical Nursing II where she has implemented high fidelity simulation in her educational methodologies.