Simulation Based Learning to Increase Competency and Self-Confidence in Novice Nurses

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Simulation Based Learning to Increase Competency and
Self-Confidence in Novice Nurses

Submitted in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice
at Eastern Kentucky University

By

Veronica Eubank

2020
Abstract

New nursing graduates lack competency and confidence in failure to rescue situations could result in failure to rescue (FTR). High-fidelity simulation (HFS) is a potential solution to ensure a controlled environment in which new graduates can practice safely and gain the knowledge they need to develop critical thinking skills. Utilizing simulation education to improve an individual’s ability to recognize deterioration early, communicate, prioritize, delegate, and provide role clarity can foster confidence and competence in new graduate nurses. The project evaluated the effectiveness of using HFS for novice nurses to increase knowledge, competency, and confidence when a patient status deteriorates. The literature supports the findings of the project. There was significant improvement in confidence of the novice nurses in assessment, communication, clinical judgment, and patient safety in failure to rescue simulations.

Keywords: novice nurses, failure to rescue, High-fidelity Simulation, competency
Simulation Based Learning to Increase Competency and
Self-Confidence in Novice Nurses

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Simulation Based Learning to Increase Competency and Self-Confidence in Novice Nurses

Background and Significance

Problem Identification

Failure to rescue (FTR) occurs when health care providers do not recognize critical signs and symptoms in patients and subsequently fail to take appropriate action to stabilize the patient (Henk, 2014). A core measure of nursing care in hospitals, FTR is recognized as a quality-of-care indicator, a determinant for staffing in acute care facilities. The Agency of Health Care Research and Quality (AHRQ) named FTR as a top 20 patient safety indicator.

Context and Consequences of the Problem

Despite the existence of rapid response teams (RRTs), the incidence of death among medical surgical inpatients with serious treatable complications or FTR reported to be 103.82 per 1,000 at-risk hospital admissions (Parker, 2014). Nayak et al. (2018) evaluated the association between readmission site and FTR of 31,498 eligible patients, reported 3,113 patients were readmitted to hospital within 90 days of surgery, and 29.2% were readmitted to a secondary hospital. The highest FTR rates were following cardiac (11.6%), respiratory (11.2%), and sepsis-related complications (10.0%). The United States Department of Health and Human Services (USDHHS) states that FTR rates reflect hospital quality consequently and the survival of a patient who suffers a complication is dependent upon the care delivered by the hospital (2015). Therefore, hospital mortality could improve with early identification of complications and appropriate care is readily available.

Herron (2018) states nurses must have an ability to recognize a deteriorating patient otherwise patient safety is in jeopardy. To achieve this goal, nurses must utilize clinical reasoning and critical thinking. Clinical reasoning is an essential component in preventing FTR
and should be emphasized in nursing education and new graduate orientation. Evidence and feedback from novice nurses indicate that new graduate nurses may lack skills to successfully prevent identifying deteriorating patients and prevent FTR. Therefore, the purpose of this project is to build self-confidence and competency skills in novice nurses (new graduate nurses of less than 12 months) to recognize signs of deterioration in distressed patients.

**Scope of the Problem**

Specialty areas of intensive care units, emergency room, surgery and telemetry units in nursing requires more than an entry level nurse competency (Herron, 2018). Nurses contribute to FTR events when they do not recognize, act on, or report the signs of clinical deterioration as an aging population brings about increase in patient acuity and comorbidities that complicate care (American Nurses Association, (ANA) 2015). Health care is changing, and health education programs need to keep pace with meeting the needs of the dynamic health care environment. Traditionally, health education programs have focused on creating competent health professionals. However, patients are now more complex, and the Triple Aim Initiative emphasizes patient outcomes, costs, and patient experience (Macauley, Brudvig, Kadakia & Bonneville, 2017). Programs must promote clinical decision-making (CDM), clinical reasoning (CR), and critical thinking (CT) in ways that are flexible across environments and systems. The education method that has successfully augmented the development of CDM, CR, and CT or replaced clinical time in health professions is simulation (Macauley et al.2017). Simulation with reflective debriefing provides an opportunity to assume an active role during the learning process. This facilitates a learning environment that enhances clinical judgment development (Sabei & Lasater, 2016).
Proposed Evidence-Based Intervention

Palaganas, Epps and Raemer (2014) Healthcare Simulation and Simulation-Enhanced Interprofessional Education (IPE) illustrates a natural merging of the fields. Over time, with contributions from multiple professions, healthcare simulation has acquired features that are advantageous over other educational techniques, leading to its growth. The growth of Simulation- Based Learning (SBL) has nurses participating in some type of simulation in basic life support, advanced cardiac life support, injections, insertion of indwelling catheters or through role-playing to practice assessment and communication skills (Gore & Thomson, 2016). Simulation can present a patient’s progression from admission through discharge or death more quickly than as seen in a real-life situation, offering a more complete picture of the nursing care involved for specific disease processes (Salem, 2015).

In the tradition of modern nursing education, with HFS fully integrated into curricula, it is possible that assessments of competence in simulation will translate to a realistic estimate of competence in actual nursing practice (Franklin, 2014). Simulation pedagogy modalities that support transition across the liminal space and boundaries between classroom and practice setting, support competence development and integration in nursing (Weeks, Coben, O’Neill, Jones, Weeks, A., Brown & Pontin, 2019). HFS offer an anatomically correct human substitute that can physiologically respond to nursing interventions. High-fidelity human patient simulation is a largely risk-free approach to learning has been widely used in colleges of nursing for many years; however, simulation is relatively new to hospital-based nursing education (Blackburn, Harkless & Garvey, 2014).

Decker, Sportsman, Puetz & Billings (2008) clinical simulation is a technique using guided practices that imitate substantial aspects of the real world in a fully interactive approach,
of those capabilities the mannequins are a useful tool for hospital educators to teach and to aid in the evaluation of competencies. Disher et al. (2014) found simulation an effective teaching strategy for bedside nurses in the early recognition and treatment of acute care patients whose condition has started to deteriorate. Bultas, Hassler, Ercole & Rea (2014) found that using HFS scenarios in conjunction with continuing education, increases the maintenance of knowledge and in some cases, even improved the staff nurses’ ability to recognize and intervene for a deteriorating pediatric patient.

Morton (2019), SBL prepares medical-surgical nurses to perform effective patient care during cardiac arrest. It also provides a safe environment for nurses to practice and refine their skills, which can increase self-confidence for performance abilities.

**Purpose of Project**

The purpose of this project is to improve self-confidence and competence in novice nurses when caring for patients that are deteriorating. SBL has the potential to be an effective teaching strategy for noncritical care staff nurses in hospital-based education units, to improve patient safety and outcomes. An effective teaching strategy for bedside nurses in the early recognition and treatment of deteriorating patients is simulation (Disher et al. 2014). In support of this Crafford, Kilian, Moore-Saayman, Dreyer & Rossouw (2019) nurses in training cannot be prepared in the clinical environment for every possible patient encounter, which will require specific skills and knowledge, clinical nurse educators to enhance these skills and knowledge have incorporated simulation as a teaching and learning strategy.

**Theoretical Framework**

Benner (1984) implied that with the Novice to Expert Model, experience and mastery of skills occurs resulting in performance improvement. Benner used the model to describe
characteristics of the nurse at each level of development (novice beginner, advanced beginner, competent, proficient, and expert). Benner’s (1984) novice to expert theory theorizes that individuals, while acquiring and developing skills, pass through five levels of proficiency: novice/beginner, advanced beginner, competent, proficient, and expert. Benner (1984) an individual progress through the five levels of competency, combined clinical experience with knowledge development that appears to move the nurse from one level to the next.

The novice nurse has no experience; simulations can introduce novice nurses to a process of being able to perceive characteristics and aspects of critical patient care situations that may alter the way nursing care is provided. Simulations may promote confidence due to an increased sense of self-efficacy in practice (Bandura, 1986). Benner’s Novice to Expert Model can be applied in the simulation environment assisting nurses to better recognize signs of clinical deterioration in a safe environment. The model provides educators the ability to identify the nurse’s level of development and allows for the identification of learning needs of the nurse in a specific situation (Benner, 1984).

**Review of Literature**

A completed systematic review of literature using an evidence-base search strategy, to answer the question, “In new graduate nurses, does a deteriorating patient simulation improve competence, knowledge and confidence?” A search also included simulation education as an intervention in failure to rescue patients; impact of simulation on confidence; and effects of simulation on deteriorating patients’ outcomes. Two main databases were employed to search for relevant studies, included Allied Health Literature (CINAHL), and the Cochrane Collaboration.
Keywords used in the initial search of the databases included: novice nurses, HFS, failure to rescue and competency. Five studies examined simulation and its impact on increasing knowledge, competence, and confidence in novice nurses (Appendix A).

Franklin, Sideras, Gubrud-Howe and Lee (2014) used a randomized control trial (RCT) to compare the efficacy of three simulation preparation methods (n=7 expert modeling/intervention, n=7 voice-over PowerPoint/active control, and n=8 reading assignments/passive control) on improving competence for providing care to multiple patients. Twenty senior undergraduate novice-nursing students participated. The RCT used three simulation patients, diagnoses of respiratory distress, diabetic complications, and cardiovascular disease. The trial used Creighton Simulation Evaluation Instrument (CSEI) a 22-item rater-observation measure of competence at baseline and 5-week post-intervention. The intervention consisted of expert modeling, voice-over power point lecture or reading assignments before simulation. Two blinded raters using the CSEI Likert scale measured competence at two time points (baseline and following a 5-week intervention). The dependent variable competence was calculated using CSEI; the summation of scores with higher scores representing higher competence. A three-way repeated measure, between analysis of variance (ANOVA) with approximately equal size groups was used. No significant difference was noted in competence among the three groups, but the expert modeling (Cohen’s $d = 0.413$) and voice-over PowerPoint methods (Cohen’s $d = 0.226$) resulted in greater improvements in competence compared with the passive control. The current results may not generalize to all nursing student populations but did show improvement in competence that can be generalized across novice nurses.

Disher et al. (2014) was a pilot study using a quasi- experimental design. The intervention consisted of a unit based, HFS scenario depicting a patient with chronic obstructive
pulmonary disease in respiratory distress followed by a debriefing session. Participants to determine their baseline level of knowledge and self-confidence, then after the intervention to determine the effectiveness of the unit based HFS intervention, completed pre-intervention questionnaires. Twenty-three cardiovascular step-down unit nurses participated in the pilot study. Years of experienced ranged from 1 to 34 years (M= 11.88 years, SD = 11.21 years). Most participants held a baccalaureate degree (60.9%). Instruments in pilot study consisted of a demographic questionnaire, knowledge instrument (12-item multiple-choice or true/false questionnaire to measure knowledge acquisition and retention from the intervention), and self-confidence scale (12-item self-confidence scale measuring self-confidence in caring for patients in acute deterioration). The questionnaire measures four dimensions: (a) accurately recognizing a change in patient’s condition, (b) performing basic physical assessments, (c) identifying basic nursing interventions, and (d) evaluating the effectiveness of interventions during acute deterioration. Dependent t tests were conducted to examine participant’s knowledge and self-confidence levels before and after the intervention. Post-intervention knowledge levels were significantly higher compared with pre-intervention knowledge levels (t (22) =-3.097, p<.01). Post-intervention self-confidence levels were significantly higher compared with pre-intervention self-confidence levels (t (22) =-3.172, p<.01). The author noted a third measurement at three or six months after the intervention could have yielded different findings.

Salem (2015) conducted an RCT of simulation-based teaching versus traditional clinical instruction methods among fourth year nursing students (n=38) that were randomly distributed evenly into two groups of 19: experimental group, and control group. Students were provided with an explanation of the study prior to implementation, they then attended 3 hours /lecture covering the theoretical background of the selected subject domain. Students then completed a
two-week (18 hour) practicum, after which clinical performance was assessed by using objective structured clinical examination (OSCE). OSCE evaluated the dependent variable skills acquisition using clinical performance checklist. The second dependent variable, knowledge was measured by a written pre- post equivalent test that was structured and graded by an expert blinded to the specific instructional plans. The test version comprised 30 multi-choice questions. The experimental group was simulation-based taught and the control group was traditional instruction. All participants who attended completed a posttest written examination. Data was coded, entered, and analyzed using statistical package SPSS version 19. The Simulator group showed significantly greater success (p < 0:05) in performing the selected procedures (40% vs 15%) when compared to the traditional instruction group. There was no significant difference in knowledge retention between the both groups; the simulation group appeared to retain the most (88.5%) and the traditional group (82.9%). The study did not explore to what extent simulation should be used as a substitute for traditional clinical instructions.

Lee et al. (2019) conducted a quantitative, descriptive analysis study. The sample consisted of 176 nurses from day and night shift on acute care units. The nurses were divided into two groups three years and less and three years or more. Prior to the sessions, participants were asked to complete prework, consisting of mandatory Basic Life Support (BLS), Cardiac Arrest Competency (CAC), and the Health Center’s electronic learning modules on stroke, communication method, Situation, Background, Assessment, and Recommendation (SBAR) (Institute for Healthcare Improvement, n.d.), and virtual crash cart. Data was collected by two surveys created and administered in the patient room: pre-simulation and post-simulation surveys. The dependent variables were nurse’s self-confidence and knowledge. The results showed that the nurses reported increased in confidence with the implementation of the in-situ
simulation scenarios. The participants were asked to rate their confidence using a 4-point scale with 1 being least confident and 4 being most confident. Identical questions were asked pre and post simulation. Quantitative data were analyzed using the Statistical Package for the Social Sciences 21 software program with descriptive analysis. Wilcoxon signed-rank test was used to determine the confidence level of the participant’s pre and post simulation. Qualitative data were analyzed using content analysis.

Forneris (2015) a quasi-experimental, pretest-posttest, repeated measure research design was used to evaluate nursing students’ clinical reasoning the dependent variable using the Health Sciences Reasoning Test (HSRT). A pilot study was conducted the year prior to ensure consistency with research methods, procedures, and instruments. The sample consisted of 153 senior students who fully participated. Of the participating students, 78 were randomly assigned to the intervention group (debriefing for meaningful learning (DML) and 75 to the control group (usual and customary debriefing). All students completed the simulation experience at their home institutions in familiar simulation labs. Instruments included the HSRT during their first week of classes. After participating in the Advanced Care Excellence for Seniors (ACE.S) simulation lab and subsequent debriefing the independent variable, they completed the debriefing assessment for simulation in healthcare– student version (DASH-SV) evaluation of their simulation experience. Three weeks later, they completed a second version of the HSRT that measured the dependent variable of clinical reasoning. The change in the mean score for students in the intervention group analyzed using a simple paired t-test resulted in a p-value of .03 and was determined to be significant at the .05 level. The change in mean scores for the students in the control group analyzed using a simple paired t-test resulted in a p-value of .44 and was determined to be insignificant. The change in mean scores between the intervention and control
groups analyzed using a simple paired \( t \)-test rendered a \( p \)-value of .09 and was determined to be significant at the .10 level. The HSRT assesses health professionals and not nursing specifically.

**Synthesis of Evidence**

Of the five articles evaluated, two were Level II evidence, studies (Franklin, 2014; Salem 2015) and three were Level III evidence, quantitative controlled trial without randomization or quasi experimental (Discher et al., 2014; Forneris, 2015; Lee et al., 2019). Three studies (Franklin, 2014; Discher et al., 2014; Salem, 2015) used simulation as the intervention, and then assessed the increase in competence, knowledge, confidence, or clinical reasoning in novice nurses. Lee et al. (2019) used Basic Life Support (BLS), Cardiac Arrest Competency (CAC), and the Health Center’s electronic learning modules on stroke and communication method (Situation, Background, Assessment & Recommendation (SBAR) as methods of prework, and mandatory virtual crash cart review. Forneris (2015) focused on deliberate debriefing of the simulation. Debriefing provides an opportunity to reframe the use of reflection and dialogue through a learner-centered approach that guides thinking.

All studies used instruments to measure the level of competence, knowledge, confidence or clinical reasoning after use of simulation intervention. Three studies implemented a pre-intervention and post-intervention data analysis to examine participants’ knowledge and self-confidence levels before and after the intervention was implemented (Franklin, 2014; Discher et al., 2014; Forneris, 2015). Franklin (2014) used CSEI a 22-item rater-observation measure of competence at baseline and 5-week post-intervention. Discher et al. (2014) and Forneris (2015) used questionnaires to determine level of clinical reasoning. Salem (2015) had students to complete a two-week practicum and then a post written exam to assess knowledge retention. Lee et al. (2019) the simulation team developed an instrument that met the program goals. This
assessment was a self-reported survey, asking individual participants about confidence in recognizing signs and symptoms of a deteriorating patient and initiating effective interventions. The confidence assessment and program evaluation items were tested for reliability, Cronbach’s result was good (.847).

Four studies (Franklin, 2014; Discher et al., 2014; Salem, 2015; Forneris 2015) had methods of preparation students had to complete prior to simulation intervention. Students read patient’s background, patient scenario, patient history and completed a survey on their simulation experience. Two articles (Franklin, 2014; Salem, 2015) used voice over power point lecture and traditional 3-hour lecture to cover the subject’s domain prior to simulation.

These four studies (Discher et al., 2014; Salem, 2015, Lee et al., 2019; Forneris, 2015) used scenarios of patients in distress from diagnosis COPD, respiratory failure, hypoxia, and geriatric patients experiencing complications from dehydration, a urinary tract infection, and a complex transition process. Franklin (2014) used three simulation patients with diagnoses of respiratory distress, diabetic complications, and cardiovascular disease.

Several studies shared the same limitations of small sample size. Forneris (2015) assess health care professionals and not just nursing specifically as a limitation. Not adequately assessing the nature of clinical reasoning used by nurses or nursing students in practice lessens the reliability of study for nurses directly. Lee et al. (2019) the simulation education team realized that nurse participants thought ‘’prework’’ meant the short scenario they completed immediately before pre-briefing and the actual simulation. In fact, the ‘’prework’’ survey was meant to solicit whether participants believed their BLS/CAC and electronic learning modules were useful and enhanced their knowledge. Salem (2015) did not explore to what extent simulation should be used as a substitute for traditional clinical instruction. Limitations of
sample size and diversity was found in two studies (Franklin, 2014; Discher et al., 2014) the convenience sample was selected from one university sample and may not represent some groups based on age, gender or race. Results may not generalize to all novice nurse populations. Studies with pre and post research designs (Franklin, 2014; Discher et al., 2014; Forneris, 2015) noted participant’s knowledge and self-confidence levels were measured immediately after the simulation intervention (Appendix B). Some length of time from post-intervention could show different results.

**Application to Evidence-Based Nursing**

Results from the studies indicated an increase in novice nurse competency. Forneris (2015) participants reported satisfaction with use of simulation. The use of high-quality simulation and debriefing methods can improve student learning and ultimately enhance clinical reasoning (Forneris, 2015). There was moderate to strong evidence to support simulation has a positive effect on the development of competency, confidence and knowledge in novice nurses. The aim of simulation is to allow the learner to perfect their skills in a non-threatening environment. Enable them to transfer learning from the simulation laboratory to the clinical setting, enhanced skill performance, increased clinical knowledge, and more-refined critical thinking abilities are possible with a well-designed clinical simulation experience. Novice nurses with better preparation and continued support can lead to decrease failure to rescue events and positive patient outcomes.

**Agency Description**

A 243-bed acute care hospital, which is part of a large organization with a family of hospitals, care centers, physician offices and facilities located in the eastern southcentral part of the United States (US), was used to implement the project. The hospital has made many physical
alterations over the years and has continuously responded to community needs and national trends by undergoing numerous renovations to provide the latest healthcare services to the region. Since its inception in 1953, the county-owned hospital has emerged to be an outstanding regional healthcare facility. Its medical staff is a well-built team of more than 600 physicians, representing a variety of specialties. The organization includes nine hospitals, which employ more than 17,000 employees nationwide and 2,000 employees on project site.

**Setting**

The unit where project participants were recruited consists of 79 beds for adult and pediatric patients. A partnering unit provided a semi-private room for simulation-based learning. The mission of the facility is to demonstrate the love of Christ by providing and coordinating care and improving health in the community. The hospital maintains national accreditation through The Joint Commission. The commitment of providing and coordinating care to improve health is in alignment with the project as the project aimed to improve care for patients.

**Target Population**

The target population consisted of 24 novice registered nurses and licensed practical nurses assigned to adult and pediatric medical surgical patients’ unit. The facility defines novice nurses as nurses working less than 12 months in practice and participants of the hospital on-boarding program. The Chief Nursing Officer and Nurse Manager of collaborating unit are in favor and support of the project proposal to help decrease failure to rescue rates on the unit.

**Stakeholders**

The key stakeholders involved in the project include the President/Chief Executive Officer of the facility, the Chief Nursing Officer, On-boarding Educator, unit manager, nurse
The roles of all stakeholders are important to provide support and resources for the project.

**Project Design**

The project utilized a pretest and posttest design that compared the difference mean scores of self-confidences. The project leader obtained permission from Eastern Kentucky University Institutional Review Board (IRB) (Appendix C), and a letter of agreement from the agency (Appendix D). Analysis of data was collected in December and analyzed by the project leader to formulate data analysis output. The information gathered will help develop an evidence-based model for novice nurses to recognize deteriorating patients on designated units along with implementation and evaluation guidelines.

**Project Methods**

The evidence-based practice intervention was a simulation model utilizing a patient deterioration scenario. The project consisted of implementing a deteriorating patient scenario to assist the novice nurse in improving their ability to recognize and intervene for a deteriorating patient. Hands-on learning is a form of Kolb’s experiential learning a rote or didactic learning, in which the learner plays a role (Kolb, 1984). Kolb’s theory is learning modes of active experimentation and reflective observation. The project leader facilitated an HFS experience with a sepsis distress patient, allowing the novice nurses to reflect on the intervention during debriefing to modify their behavior in future care of distressed patients. The project leader obtained names of novice nurses from the unit manager that met the criteria to participate in the project. The project leader reinforced that participation in the DNP project (completion of the data collection instruments) was voluntary and would not affect employment (Appendix E).
IRB Submission

The project leader obtained permission from Eastern Kentucky University Institutional Review Board (IRB). The facility representative Vice President of Nursing and Chief Nursing Officer signed a statement of mutual agreement.

Recruitment

The project leader obtained names of novice nurses from the unit manager that met the criteria to participate in the project. A project flyer on the unit was a reminder for participants with less than one year of nursing experience to attend the project simulation as a professional development day (Appendix F).

Description of Evidence-Based Intervention

Budget. A budget was established. All employees were on the clock for professional development day. Direct cost included approximately two-hour salary of 10 nursing employees that participated, printing out survey forms, C-CEI forms, pre and post self-confidence forms with color paper. Water and pencils were provided for simulation observers. Thank you cards to simulation observers and simulation coordinator was budgeted. Estimated cost $40-$50 dollars. Indirect cost included utilities, simulation equipment and office supplies used during the education intervention. Salary for two hours each day of intervention for volunteer participant to assist with nurse’s report.

Implementation. The project was implemented over two days, with ten nurses participating. Two nurses actively participated for approximately an hour while additional staffing covered their assigned patients. The project leader greeted each participant in the project room on the medical inpatient service unit in a reserved room to where each participant completed a project packet anonymously.
Orientation. The simulation coordinator provided orientation to the simulation environment prior to the simulation intervention. The MIPS educator, nurse manager and project leader selected a patient sepsis scenario. Participants were given a packet including a demographic survey, pre and post self-confidence test, and the Creighton Competency Evaluation Instrument. No identifying information was included on the forms to connect the participant with the ten before and after coded forms. Project leader distributed paper and pencil to participants in the project room to assure confidentiality. Each participant signed a consent acknowledging the project was volunteer basis only although strongly encouraged to attend by unit manager and educator (Appendix G). The facility did not require participants to achieve a desired level of competency, but rather an expectation to learn from the experience.

Simulation. Each participant received a verbal report from the simulation coordinator prior to participation in the scenario. The project leader evaluated the participants with the Creighton Competency Evaluation Instrument during the simulation scenario. The project leader completed the on-line training required in order to use the instrument for participant evaluation.

Debriefing. Debriefing was conducted in two phases with phase 1) being directly post intervention for approximately 20 minutes utilizing the PEARLS debriefing tool (Appendix H) to identify areas of needed improvement and areas of strength, phase 2) completion of Baptist Health Floyd health science survey two weeks post project implementation with a 33% return rate (Appendix I). The educational simulation intervention lasted approximately 60 minutes each session. Each participant completed a post self-confidence assessment.
Instruments

Demographic Survey

The survey included identification of background information: education, gender, age, and advanced certifications (Appendix J).

Pre and Post Self-Confidence Scale

The Student Satisfaction and Self-Confidence in Learning Instrument is a 13-item Likert scale (NLN, n.d.) used to assess satisfaction with learning and level of confidence pre and post intervention. The instrument has a five-item student satisfaction section and an eight-item section designed to measure simulation activity and self-confidence in learning using a five-point scale. Each item represents a statement about learner’s attitude towards satisfaction in learning and self-confidence in simulation activity. Participants identified their satisfaction and self-confidence in simulation activity with statements, 1= strongly disagree, 2= disagree, 3= undecided, 4= agree and 5= strongly agree. Higher scores indicate higher levels of perceived self-confidence. The instrument rated the nurse’s self-confidence in recognizing, assessing, intervening, and evaluating effectiveness of interventions during clinical deterioration situations (Hart, Spiva, & Marenco, 2014). Reliability was tested using Cronbach's alpha: satisfaction = 0.94; self-confidence = 0.87. Maximum points of 65 on the instrument with the higher score representing the more satisfaction and self-confident in learning (Appendix K). NLN does not require specific permission for non-commercial use of surveys and research instruments (includes, theses, dissertations, and DNP projects) that is granted free of charge and downloaded and used by project leader for non-commercial use only with the retention of the NLN copyright statement.
Creighton Competency Evaluation Instrument (C-CEI)

The Creighton Competency Evaluation Instrument (C-CEI) is a 23-item Likert type scale to evaluate performance of participants in patient care simulations (Appendix L). The C-CEI specifically evaluates four categories: assessment, communication, clinical judgment, and patient safety. The instrument has a reported Interrater Reliability of .952 and an internal consistency Cronbach's alpha of .979 (Adamson & Kardong-Edgren, 2012). Permission to use the C-CEI was granted via an online term of agreement and use form. An online training module is required with no charge assessed for its use. Participants will be scored during the simulation using the C-CEI. The instrument has 23 items that can be scored as (1) demonstrates competency or (0) does not demonstrate competency with a total possible score of 22. In review of C-CEI, the project leader removed items that are not considered pertinent to the simulation intervention. For example, the items “Reflect on Potential Hazards and Errors”.

Results

Data was analyzed using the Statistical Package of for Social Sciences (SPSS) version 26. Ten novice nurses participated in the project, 70% of nurses with 6 to 12month work experience and 30% less than six months experience (Appendix M). Majority of participants were female. Age range of participants was 21 to 30 years with a mean of age of 23 years. Educational level included Licensed Practical Nurses (60%), Associate Degree Registered Nurse (30%), and Bachelor of Science Degree Nurses (10%).

A paired samples t-test evaluated the impact of pre and post simulation intervention on novice nurses’ confidence scores. There was a statistically significant increase in confidence scores from pre-simulation (M = 54, SD = 7.333) to post-simulation (M = 57, SD = 5.103), t (9) = 2.401, p< .040 (two-tailed). The mean increase in confidence scores was 3.40 with a 95%
confidence interval ranging from 0.197 to 6.603. The eta-squared statistic (.39) indicated a small effect size.

The C-CEI data were reviewed if novice nurses demonstrated the essential competencies during simulation intervention. The essential components are assessment, communication clinical, clinical judgement, and patient safety. In the assessment component (N=10), 40% had maximum of three points. In the communication component (N=10), 20% had maximum of five points. In the clinical judgment component (N=10), 10% scored the maximum of nine points. In the patient safety component (N=10), 20% scored the maximum of five points (Appendix N). Although patient safety has six criteria, only five were used in the simulation intervention.

**Discussion**

Following completion of the simulation project, 85% of participants successfully reported feeling more confident. Fatigue possibly affected learning and attitudes during simulation intervention due to 50% of participants working the night before the simulation project. Providing nurses with opportunities for repeated practice and experiences of mastery is important to improve their self-confidence (Morton, 2019).

This project supports findings from literature of increased confidence and competence. Like Discher et al. (2014) this project measured level of confidence with a 12 item Likert scale to assess confidence pre and post simulation intervention that resulted increase in confidence. Lee et al. (2019) used a pre and post survey questionnaire with identical questions however, separated nurses with three year or more experience from nurses with three years and less and both groups reported increased in confidence similar to this project with all novice nurses of one year or less experience. The data analysis results confirmed significant improvement in self-confidence for novice nurses when caring for patients in distress from clinically deteriorating.
All nurses who participated in this project noted on the follow up surveys, the simulation intervention assisted them with the use of MIPS unit protocol and standing orders making them more competent in implementing floor policies.

One limitation of the project was due to time constraint of nurses participating in the project was on the clock and assigned patients being cared for by administration staff. The patient distress scenario of sepsis was partially implemented by the hospital simulation director to meet the allocated timeframe for each participant.

**Implications**

The effectiveness of simulation and deliberate practice in teaching, improving, and retaining clinical skills has been well documented. Clinical education represents a new paradigm in healthcare as one of the most important ways to ensure safety and improve patient outcomes (Kiernan, 2018). Further research could include evaluating the clinical competence of new graduate nurses at 3, 6, and 12 months after graduation. Hospital nurse educators and clinical nurse specialists who conduct any HFS training interventions should debrief participants following any training. Debriefing entails providing feedback to participants and encouraging reflective thinking, and it is an important simulation component because it helps to promote transfer of learning to future patient care situations (Morton, 2019).

Failure to rescue is a preventable patient complication. Lack of knowledge and confidence can lead to poor performance and contribute to lack of safety and failure to rescue in practice. There are calls from nurse leaders for nurse educators to adopt the deliberate practice model for mastery learning, as an evidence-based approach to be an effective educational strategy that improves both skills and clinical competence (Gonzalez & Kardong-Edgren, 2017).
Sustainability

Research supports simulation as an educational intervention for new graduate nurses caring for deteriorating patients. The organization’s first Simulation Coordinator was hired effective June 1, 2019 in a part-time capacity to develop role description and responsibilities. The Chief Nursing Officer and unit manager indicate the need for more simulation experiences to help with competency. Based on the simulation intervention the Chief Nursing Officer plans to use the doctoral nursing project as a model of simulation intervention with the educators of hospital to implement on each unit. Discussions have been initiated to include inter-professionals working together to care for deteriorating patients, adapting the project to fit all patient types.

Conclusion

The aim of simulation in healthcare is to allow participants to perfect their skills in a safe environment where learner can transfer simulation-based learning to clinical practice. This project helped to establish a safe environment where novice nurses could transfer knowledge learned in simulation lab to daily practice on MIPS unit. The simulation-based learning helped develop confidence, competency in skills and how to effectively implement MIPS unit protocol of deteriorating patients. Participants’ self-confidence improved, as did their competency performance in the simulated patient deteriorating scenario. The project results have the potential to help decrease failure to rescue rates and improve patient outcomes.
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Salem, A. H. (2015). Randomized Controlled Trial of Simulation - Based Teaching versus Traditional Clinical Instructions in Nursing: a Pilot Study among Critical Care Nursing


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<tr>
<th>Study</th>
<th>Design</th>
<th>Sample</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>Franklin A.E. 2014</td>
<td>Three arm, single-bind randomized control trial</td>
<td>N= 20 senior prelicensure novice nurses in an integrative practicum clinical course</td>
<td>Change in competence ↑</td>
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<td>Discher et al. 2014</td>
<td>A pilot study using a quasi-experimental design with an interventional Pre-post method was used.</td>
<td>N=23 cardiovascular step-down unit nurses participated in the pilot study. Years experienced as a nurse ranged from 1 to 34 years (M=11.88 years, SD = 11.21 years; see Table 2). Most participants held a baccalaureate degree (60.9%). A little over half (52.2%) were certified by a national organization, and 56.5% were members of a professional organization.</td>
<td>Post intervention knowledge ↑</td>
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<td>Post intervention self-confidence ↑</td>
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<td>Salem A.H. 2015</td>
<td>Randomized Controlled Trial of Simulation - Based Teaching versus Traditional Clinical Instructions in Nursing:</td>
<td>N=39 nursing students were randomly divided into two groups. Half of the students were allocated to the control group (conventional teaching method were used), whereas the other students were allocated to the experimental group (simulation – based method used to teach).</td>
<td>Experimental group (simulation-based) retain the most (88.5%) Control group (conventional taught) retain the least (82.9%). The Simulator group showed significantly greater success (p &lt; 0.05) in performing the selected procedures (40% vs 15%) compared to the traditional group.</td>
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<tr>
<td>Lee et al. 2019</td>
<td>Quantitative data were analyzed using the Statistical Package for the Social Sciences 21 software program. A descriptive</td>
<td>Nurses (n = 176) participated in the in-situ simulation program across acute care units over a 4-year period. A pre- and post-design was used. Three adult acute care units were chosen for the simulation pilot based on the highest years of experience.</td>
<td>The data were analyzed separately for those with 3 years or less experience and those with more than 3 years of experience. (pre: 41.8% very confident; post:</td>
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Intervention/Outcomes Synthesis Table:

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<td>Increase competence</td>
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Operational Definitions:

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<td>Population</td>
<td>Senior undergraduate novice nursing students</td>
<td>Twenty-three cardiovascular step-down unit nurses</td>
<td>Fourth year nursing students</td>
<td>Nurses (n = 176) acute care nurses</td>
<td>156 senior nursing students from four different colleges</td>
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<td>Instrument measuring</td>
<td>The CSEI is a 22-item rater-</td>
<td>Demographic questionnaire,</td>
<td>Objective</td>
<td>Two surveys were created</td>
<td>DASH©-SV evaluation of</td>
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<td>competency, knowledge or confidence.</td>
<td>observation measure of competence at baseline and 5-week post-intervention.</td>
<td>knowledge instrument, and self-confidence scale given pre and post-intervention</td>
<td>structured clinical examination (OSCE), to assess the students knowledge retention.</td>
<td>and administered. Pre-simulation and post-simulation surveys to assess confidence.</td>
<td>their simulation experience. Three weeks later they completed 2nd HSRT.</td>
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<td>Preparation methods of simulation</td>
<td>Expert modeling, voice-over PowerPoint lecture or reading assignments before simulation</td>
<td>Introduced to the simulation experience. simulation patient information card that includes patient history and presentation.</td>
<td>Attended 3 hours /lecture covering the theoretical background of the subject domain. Participants took a pre-written exam to test their knowledge.</td>
<td>When the participants arrived at the simulation session, they were given a self-assessment. A simple case study with basic questions to elicit critical thinking. They were asked about their confidence level in recognizing the signs and symptoms of a deteriorating patients.</td>
<td>HSRT before simulation. students completed preparation materials outlining objectives and expectations,</td>
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<td>Type of HFS</td>
<td>Three simulation patients had diagnoses of respiratory distress, diabetic complications, and cardiovascular disease.</td>
<td>COPD pt in resp distress simulation and debriefing sessions was conducted on nsg unit in an empty pt room</td>
<td>Sim-Man 3G High Fidelity Simulator, a computerized replica that simulates a patient with drug and hypoxia sensitivity.</td>
<td>HF in situ simulation activities occurred on the unit where nurse participants provided direct care to deteriorating patients.</td>
<td>HFS consisted of three 20-minute unfolding simulation scenarios, each followed by a separate debriefing. Props,</td>
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supplies, and medical records were matched across campuses.

**Legend:**

**Types of Simulation:**
- HFS - High Fidelity Simulation
- SM - Static mannequin
- PP – Paper/pencil case study

**Instruments Terms:**
- HSRT – Health Science Reasoning Test
- CSEI - Creighton Simulation Evaluation Instrument
- OSCE – Objective Structured Clinical Examination
- SSS – Student Satisfaction and Self-Confidence in Learning
- EPSS – Educational Practices Questionnaire
- SDS - Simulation Design Scale
- DASH -SV – Debriefing Assessment for Simulation in Healthcare–Student Version
- DML – Debriefing for Meaningful Learning
<table>
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<tr>
<th>Citation (Full APA)</th>
<th>Study Purpose</th>
<th>Conceptual Framework</th>
<th>Design/Method</th>
<th>Sample/Setting</th>
<th>Major Variables Studied and their Definitions</th>
<th>Measurement of Major Variables</th>
<th>Data Analysis</th>
<th>Findings</th>
<th>Appraisal: Worth to Practice</th>
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<tbody>
<tr>
<td>Franklin, A. E., Sideras, S., Gubrud-Howe, P., &amp; Lee, C. S. (2014). Comparison of expert modeling versus voice-over PowerPoint lecture and pre-simulation readings on novice nurses’ competence of providing care to multiple patients, Journal of Nursing Education, 53(11), 615-22.</td>
<td>The purpose of interventions tested in this research is to help novice nurses enhance competence so they would eventually be able to identify signs and symptoms representing a change in patient status, notice and understand the big picture of relationships between physiologic states, anticipate changes in patients’ conditions, and alter care protocols.</td>
<td>RCT designed to test the expert modeling intervention against voice-over PowerPoint lectures (active control) and reading assignments (passive control). Study was conducted in the simulation laboratory in nursing school. N= 20 senior prelicensure novice nurses enrolled in an integrative practicum clinical course. All 48 novice nurses in the course were invited to participate; 28 nurses declined.</td>
<td>IV - Expert Modeling Video (Intervention Group). Participants had access to 70 minutes of expert modeling videos and voiceover PowerPoint lectures. IV2 - Voice-Over PowerPoint Lecture (Active Control Group). Participants had access to 45 minutes of voice-over PowerPoint slides plus eight online activities.</td>
<td>DV—CSEI; Likert scale; summed scores with higher scores representing higher competence.</td>
<td>A three-way repeated measure, within- between analysis of variance (ANOVA) with approximately equal size groups. Standard descriptive statistics of frequency, central tendency, and dispersion were used to describe the demographic characteristics of the sample using Stata/MP 13 software. Pearson _2 analysis was used to compare demographics among groups.</td>
<td>No significant differences were noted in competence among the three groups, but the expert modeling (Cohen’s d = 0.413) and voice-over PowerPoint methods (Cohen’s d = 0.226) resulted in greater improvements in competence compared with the passive control. The strongest effect sizes favor delegation (Cohen’s d = 0.419) and safety checks (Cohen’s d = 0.241).</td>
<td>The main strengths of the study are the randomized control trial design, which minimized threats to internal validity and allowed examination of causal inference. The first limitation of the trial is that a convenience sample was selected from one university. Second limitation is the small sample size. The results show no significance in competence but did show improvement that can be generalized across students.</td>
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<td>Disher, J., Burgum, A., Desai, A., Fallon, C., Hart, P. L., &amp; Aduddell, K. (2014). The Effect of Unit-Based Simulation on Nurses’ Identification of Deteriorating Patients. <em>Journal for Nurses in Professional Development, 30</em>(1), 21–28. <a href="https://doi.org/10.1097/NND.0b013e31829e6c83">https://doi.org/10.1097/NND.0b013e31829e6c83</a></td>
<td>The purpose of this pilot research study was to examine the effects of a unit-based, high-fidelity simulation initiative on cardiovascular step-down unit registered nurses’ identification and management of deteriorating patients. A pilot study using a quasi-experimental design with an interventional Pre-post method was used. The intervention consisted of a unit-based, high-fidelity simulation scenario depicting a patient with COPD in respiratory distress followed by a debriefing session. Preintervention questionnaires were completed by participants to determine their baseline level of knowledge and self-confidence and, after the intervention, to determine the effectiveness of the unit-based, high-fidelity simulation intervention. Twenty-three cardiovascular step-down unit nurses participated in the pilot study. Years of experience ranged from 1 to 34 years (M= 11.88; SD = 11.21 years); Most participants held a baccalaureate degree (60.9). IV - Intervention consisted of a 15- to 20-minute scenario of a patient with COPD experiencing respiratory distress followed by a 20-minute debriefing session. The simulation and debriefing sessions were conducted on the nursing unit in an empty patient room. A demographic questionnaire, knowledge instrument, and self-confidence scale were the instruments for the study. 12-item multiple-choice or true/false questionnaire to measure knowledge acquisition and retention from the intervention. 12-itemself-confidence scale measures self-confidence in caring for patients in acute deterioration. DV1 - knowledge DV2 - Self confidence Data were analyzed with descriptive and inferential statistics using SPSS for Windows Release 18.0. Pre-analysis data screening was conducted before statistical analysis. Dependent t tests were conducted to examine participants’ knowledge and self-confidence levels before and after the intervention. The mean pre-intervention knowledge score was 72.73 (SD = 13.52), and the mean post-intervention knowledge score was 81.82 (SD = 11.81). Post intervention knowledge levels were significantly higher levels (t(22) = 3.097). The mean pre-intervention self-confidence score was 4.40 (SD = 0.42), and the mean post intervention self-confidence score was 4.59 (SD = 0.39). Post intervention self-confidence levels were significantly higher levels (t(22) = 3.172). Limitation: sample size and diversity of daily experience and practice to the nurses who participated. The finding may not represent the general population of acute care nurses. Another limitation of the study is the pre-post research design. Participants’ knowledge and self-confidence levels were measured immediately after the unit-based simulation. A third measurement at 3 or 6 months after the intervention could provide different information.</td>
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<td>Salem, A. H. (2015). Randomized Controlled Trial of Simulation - Based Teaching versus Traditional Clinical Instructions in Nursing: a Pilot Study among Critical Care Nursing Students. <em>International Journal of Nursing Education, 7</em>(1), 274–279.</td>
<td>None</td>
<td>A randomized controlled trial of simulation-based teaching versus traditional clinical instructions methods among critical care nursing students was used. Study was conducted at College of Nursing - University of Dammam since the college includes full access to a state-of-the-art simulation laboratory. Intervention group = 19 Control group=19 Participating students were randomly divided into two groups. Half of the students were the control group (where conventional teaching method were used to teach the respiratory management). The other students were allocated to the experimental group (simulation – based method used to teach respiratory management). The two groups were exposed simultaneously to an Objective Structured Clinical Evaluation (OSCE). IV- OSCE Knowledge was measured by a written pre- post equivalent test was structured and graded by an expert blinded to the specific instructional plans. The test version comprised 30 multi-choice questions. OSCE was used to evaluate the skills acquisition using clinical performance checklist. DV1-Knowledge DV2-Skill Data was coded, entered, &amp; analyzed using statistical package SPSS version 19. Data was summarized using mean &amp; standard deviation. Comparison between groups was done using independent sample t test. P value &lt; 0.05 was considered statistically significant. Students in both groups had statistically significant lower scores on the pre - test (p&lt;.000). After 18 hours period of practicum of simulation and/or traditional instruction experiences, the students retained, on average, 86.3% of the knowledge gained in the didactic portion of the course. The simulation group appeared to retain the most (88.5%) and the traditional group the least (82.9%). Limitations of the study - A short period of lecture that covered the theoretical base of the subject domain. - The study did not explore to what extent simulation should be used as a substitute for traditional clinical instructions.</td>
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<td>The aim of this study was to observe the development, implementation, and evaluation of an in situ simulation program and the positive impact on nurses’ confidence level in the recognition and initiation of interventions for a deteriorating patient.</td>
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<td>Four models were used to guide the Simulation Program development, implementation, and evaluation. The NPD Practice Model, the Iowa Model of Evidence-Based Practice to Promote Quality Care, Jeffries Simulation Theory, and Brinkerhoff’s High Impact Learning.</td>
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<td>Pre and post design of quantitative data using descriptive analysis.</td>
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<td>Each in situ simulation session, facilitated by the simulation team, included self-assessment, a pre-briefing, a simulation activity, a debriefing, and an evaluation. Prior to the sessions, participants were asked to complete prework, consisting of mandatory Basic Life Support (BLS), Cardiac Arrest Competency (CAC), and the Health Center’s electronic learning modules on stroke, communication method.</td>
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<td>Two surveys were created and administered in the patient room. Pre-simulation and post-simulation surveys. Self-reported survey, asking individual participants about confidence in recognizing signs and symptoms of a deteriorating patient and initiating effective interventions.</td>
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<td>Quantitative data were analyzed using the Statistical Package for the Social Sciences 21 software program. A descriptive analysis was used. Wilcoxon signed-rank test was used to determine the confidence level of the participants pre and post simulation.</td>
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<td>The results revealed that the participants felt significantly more confident following the simulation session (pre: 41.8% very confident; post: 77.2% very confident; p = .000).</td>
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<td>The limitation: Participants thought “prework” meant the short scenario they completed before pre-briefing and the actual simulation. In fact, the “prework” survey was meant to solicit whether participants believed their BLS/CAC and electronic learning modules were useful and enhanced their ability to learn in the in-situ simulation. Given the confusion it is not clear from results whether the prework led to more knowledgeable assessment and intervention skills during the simulation.</td>
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<td>N=156 senior students enrolled in the study; 153 fully participated. Of the participating students, 78 were randomly assigned to the intervention group (DML debriefing) and 75 to the control group (usual and customary debriefing)</td>
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<td>An unfolding three-scenario simulation featuring a geriatric patient experiencing complications from dehydration, a urinary tract infection, and a complex transition process was selected. Participants completed the Health Sciences Reasoning Test (HSRT)</td>
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<td>HSRT 33-questions, validated, multiple-choice test designed to assess critical-thinking skills in health science students and professional health science practitioners. Debriefing assessment for simulation in healthcare–student version (DASH-SV) was used to research question related to nursing students’ perceptions of the quality of debriefing.</td>
<td>None</td>
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<td>This study investigated two research questions. The first research question, on whether the DML debriefing method would positively impact the development of clinical reasoning skills in undergraduate nursing students, was tested using data from the HSRT.</td>
<td>None</td>
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<td>The findings area as follows: pretest intervention group (n = 78, M = 22.74, SD = 3.6) and control group (n = 75, M = 22.06, SD = 3.7); posttest, after the simulation and debriefing, intervention group (n = 78, M = 23.56, SD = 3.9) and control group (n = 75, M = 22.41, SD = 4.6). The change in HSRT mean scores was determined to be significant for the intervention group at the .05 level and insignificant for the control group. Control groups was determined to be significant at the .10 level.</td>
<td>None</td>
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<td>The HSRT assesses health professionals and not nursing specifically. Therefore, it may not adequately assess the nature of the clinical reasoning used by nurses or nursing students in practice. In this study, Debriefing for Meaningful Learning had a positive impact on the development of clinical reasoning skills in undergraduate nursing students when compared to usual and customary debriefing.</td>
<td>None</td>
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Letter of Support for Off-Campus Research

10/07/2019

Institutional Review Board:

As an authorized representative of Baptist Health Floyd, I grant approval for Veronica Eubank RN MSN to conduct research involving human subjects at my organization. I understand that the purpose of this research is enhance self-confidence and competency in novice nurses with simulation based learning education.

I grant permission for this project to involve novice nurses on MIPS unit and I have determined these individuals to be appropriate subjects for this research. I understand that they will be asked to participate in simulation-based learning where patient is in distress and the novice nurses are to receive orders and implement plan of care with rapid responses.

To support this research, I agree to arrange the schedule of novice nurses on MIPS unit to provide time to participate and debrief on learning.

Sincerely,

Kristina Sihet RN MSN BC
Appendix D

Eastern Kentucky University
Department of Baccalaureate and Graduate Nursing
Doctor of Nursing Practice Program

a paper chart to participate in the simulation from beginning to end. New grad participants will receive patient report from simulation coordinator.

This study is anonymous. That means that no one, not even members of the research team, will know that the information you give came from you.

The research gathered from the study will be provided to the MIPS unit manager and will not be distributed to nurses on this unit.

IV. Required Signatures:

Student

[Signature] 9/16/19

Date

DNP Project Advisor

[Signature] 4/16/19

Date

Agency Representative

[Signature] 4/16/19

Date

Fall 2017
Appendix E

Dear Nurse Participant:

My name is Veronica Eubank a Doctor of Nursing Practice (DNP) Student at Eastern Kentucky University in Richmond, Kentucky. As part of my graduation requirements, I am conducting an educational intervention with use of High-Fidelity Simulation to assist novice nurses in caring for deteriorating patients.

The project is designed to increase nurse’s knowledge, confidence, and competency level in recognizing early signs of clinical deterioration when a patient’s clinical condition begins to deteriorate. Participation in the simulation will count as part of your professional development day for MIPS at Baptist Heath Floyd. If you volunteer to participate in the project you will be asked to:

• Complete a brief demographic questionnaire, which will ask for your age, sex, nursing education level and any advanced certifications.

• Complete a pretest and a posttest assessment, which will assess nurse confidence level when caring for clients whose clinical condition has begun to deteriorate.

• Be scored during the simulation using a research instrument with established reliability and validity.

Completion of the questionnaire, pretest and posttest will take approximately 10 minutes. There are no foreseeable risks to you or your current position within Baptist Hospital Floyd. No information will be collected that will identify you with data collected. Only group (aggregate) data with no personal identifiers will be used in written or oral presentations of the project results.
Professional Development Day

Simulation Based Learning to Increase Competency and Confidence

Event Dates:
November 15th & November 22nd, 2019

Address: Baptist Health Floyd Simulation Lab
Lower level

Time of event:
7:00am, 8:00am & 9:00am both days

Contact information:
Veronica Eubank RN MSN
Eastern Kentucky University DNP Student
502-693-1149

Learn how to become competent, confident and knowledgeable when a patient is deteriorating.
Appendix G

Consent to be a participant

I volunteer to participate in a DNP project conducted by Veronica Eubank RN MSN from Eastern Kentucky University. I understand that the project is designed to gather information about simulation-based learning to enhance self-confidence and competency in novice nurses. I will be one of approximately 12-15 novice nurses participating in this project.

1. My participation in this project is part of a requirement for MIPS unit nurse residency program. I understand that if I don’t complete this simulation intervention there will be no penalty. I also understand that if I decline to participate or withdraw from the project, Jessica Mayes the on-boarding educator will be notified.

2. I understand that all participants are classified as novice nurses with work experience of less than 12 months.

3. The simulation-based learning will last approximately 60 minutes. Each participant will be given a packet to complete demographic survey, pre and post self-confidence test, and the Creighton Competency Evaluation instrument. There will be a follow-up survey provided by Baptist Health Floyd 1-2 weeks post simulation intervention. No identifying information will be included on any form.

4. I voluntarily agree to participate in this study. I have been given a copy of this consent form.

__________________________    ___________________________
My Signature                                                          Date

_________________________________  ___________________________
My Print  Principal Investigator
# The PEARLS Healthcare Debriefing Tool

<table>
<thead>
<tr>
<th>Objective</th>
<th>Task</th>
<th>Sample Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Setting the Scene</strong></td>
<td>Create a safe context for learning</td>
<td>State the goal of debriefing; articulate the basic assumption*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;Let's spend X minutes debriefing. Our goal is to improve how we work together and care for our patients.&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;Everyone here is intelligent and wants to improve.&quot;</td>
</tr>
<tr>
<td><strong>2 Reactions</strong></td>
<td>Explore feelings</td>
<td>Solicit initial reactions &amp; emotions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;Any initial reactions?&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;How are you feeling?&quot;</td>
</tr>
<tr>
<td><strong>3 Description</strong></td>
<td>Clarify facts</td>
<td>Develop shared understanding of case</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;Can you please share a short summary of the case?&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;What was the working diagnosis? Does everyone agree?&quot;</td>
</tr>
<tr>
<td><strong>4 Analysis</strong></td>
<td>Explore variety of performance domains</td>
<td>See backside of card for more details</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Preview Statement</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Use to introduce new topic)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;At this point, I'd like to spend some time talking about [insert topic here] because [insert rationale here].&quot;</td>
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<tr>
<td></td>
<td></td>
<td><strong>Mini Summary</strong></td>
</tr>
<tr>
<td></td>
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<td>(Use to summarize discussion of one topic)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&quot;That was great discussion. Are there any additional comments related to [insert performance gap here]?&quot;</td>
</tr>
</tbody>
</table>

**Any Outstanding Issues/Concerns?**

<table>
<thead>
<tr>
<th><strong>5 Application/Summary</strong></th>
<th>Identify take-aways</th>
<th>Learner centered</th>
<th>Instructor centered</th>
<th>Sample Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;What are some take-aways from this discussion for our clinical practice?&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;The key learning points for this case were [insert learning points here].&quot;</td>
</tr>
</tbody>
</table>

*Basic assumption. Copyright © Center for Medical Simulations. Used with permission.*

Appendix I

Program Name: Simulation Based Learning to Increase Competency and Self-Confidence in Novice Nurses
Program Date: November 15th & November 22nd

Listed below are the objectives for this program. Place an X in the column that best describes how well the objectives were met.

SCORING KEY: E=Excellent; VG=Very Good; G=Good; F=Fair; P=Poor

<table>
<thead>
<tr>
<th>Program Objectives</th>
<th>E</th>
<th>VG</th>
<th>G</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify patients deteriorating in status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Develop and prioritize plan of care</td>
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<tr>
<td>3. Implement actions with increased self-confidence</td>
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<tr>
<td>4. Demonstrate competency in skills</td>
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</tr>
</tbody>
</table>

Rate to what degree your personal objectives were met
What is your overall evaluation of the simulation learning experience?
Rating of the simulation implementation (How well the logistics, etc. were handled?)
Rate the physical facilities in relation to their conduciveness to learning.
Rate the overall applicability/reality of simulation learning.
Appendix J

Demographic Survey

Education

1. Please select your appropriate degree in nursing:
   ___ License Practical Nurse
   ___ Registered Nurse ADN
   ___ Registered Nurse BSN
   ___ Registered Nurse MSN

Gender

2. Please select the appropriate sex:
   ___ Male
   ___ Female

Age

3. Please select your appropriate age group:
   ___ 21-30
   ___ 31-40
   ___ 41-50
   ___ >51

Advanced Certification

4. Please select your advanced certificate if applicable:
   ___ ACLS
   ___ PALS
   ___ BLS
   ___ OTHER
Appendix K

Student Satisfaction and Self-Confidence in Learning

Instructions: This questionnaire is a series of statements about your personal attitudes about the instruction you receive during your simulation activity. Each item represents a statement about your attitude toward your satisfaction with learning and self-confidence in obtaining the instruction you need. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statement below by marking the numbers that best describe your attitude or belief. Please be truthful and describe your attitude as it really is, not what you would like for it to be. This is anonymous with the results being compiled as a group, not individually.

Mark:
1. STRONGLY DISAGREE with the statement
2. DISAGREE with the statement
3. UNDECIDED - you neither agree or disagree with the statement
4. AGREE with the statement
5. STRONGLY AGREE with the statement

Satisfaction with Current Learning

1. The teaching methods used in this simulation were helpful and effective.
2. The simulation provided me with a variety of learning materials and activities to promote my learning the medical surgical curriculum.
3. I enjoyed how my instructor taught the simulation.
4. The teaching materials used in this simulation were motivating and helped me to learn.
5. The way my instructor(s) taught the simulation was suitable to the way I learn.

Self-confidence in Learning

6. I am confident that I am mastering the content of the simulation activity that my instructors presented tome.
7. I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum.
8. I am confident that I am developing the skills and obtaining the required knowledge from this simulation to perform necessary tasks in a clinical setting.
9. My instructors used helpful resources to teach the simulation.
10. It is my responsibility as the student to learn what I need to know from this simulation activity.
11. I know how to get help when I do not understand the concepts covered in the simulation.
12. I know how to use simulation activities to learn critical aspects of these skills.
13. It is the instructor’s responsibility to tell me what I need to learn of the simulation activity content during class time.

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Revised December 22, 2004
Appendix L

Creighton Competency Evaluation Instrument (C-CEI)

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>0</th>
<th>1</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Obtains Pertinent Data</td>
<td></td>
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</tr>
<tr>
<td>2. Performs Follow-up Assessments as Needed</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Assesses the Environment in an Orderly Manner</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>COMMUNICATION</th>
<th>0</th>
<th>1</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Communicates Effectively with Intra/Interprofessional Team (Team STEPPS, SDAR, Written Read Back Order)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Communicates Effectively with Patient and Significant Other (verbal, nonverbal, teaching)</td>
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<tr>
<td>6. Documents Clearly, Comprehend, &amp; Accurately</td>
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<tr>
<td>7. Responds to Abnormal Findings Appropriately</td>
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<tr>
<td>8. Promotes Professionalism</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CLINICAL JUDGMENT</th>
<th>0</th>
<th>1</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Interprets Lab Results</td>
<td></td>
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</tr>
<tr>
<td>11. Interprets Subjective/Objective Data (recognizes relevant from irrelevant data)</td>
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<tr>
<td>12. Prioritize Appropriately</td>
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<td></td>
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<tr>
<td>13. Performs Evidence Based Interventions</td>
<td></td>
<td></td>
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<tr>
<td>14. Provides Evidence Based Rationale for Interventions</td>
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</tr>
<tr>
<td>15. Evaluates Evidence Based Interventions and Outcomes</td>
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</tr>
<tr>
<td>16. Reflects on Clinical Experience</td>
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<tr>
<td>17. Delegates Appropriately</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PATIENT SAFETY</th>
<th>0</th>
<th>1</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Uses Patient Identifiers</td>
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</tr>
<tr>
<td>20. Administers Medications Safely</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>21. Manages Technology and Equipment</td>
<td></td>
<td></td>
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<tr>
<td>22. Performs Procedures Correctly</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>23. Reflects on Potential Hazards and Errors</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**COMMENTS**

**Total Applicable Items:**

**Earned Score:**

Revised for OEU use 8/20/2013
Appendix M

*Table 1 Work & Simulation Experience*

<table>
<thead>
<tr>
<th>New graduate nurses with:</th>
<th>Actual number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;6 months experience</td>
<td>3</td>
<td>30%</td>
</tr>
<tr>
<td>6-12 months experience</td>
<td>7</td>
<td>70%</td>
</tr>
<tr>
<td>No simulation experiences</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>&lt;4 simulation experiences</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>&gt;5 simulation experiences</td>
<td>9</td>
<td>90%</td>
</tr>
</tbody>
</table>

Signature (optional)
Appendix N

Percentage of nurses meeting criteria within each C-CEI component

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>40</td>
</tr>
<tr>
<td>Communication</td>
<td>20</td>
</tr>
<tr>
<td>Clinical Judgment</td>
<td>10</td>
</tr>
<tr>
<td>Patient Safety</td>
<td>20</td>
</tr>
</tbody>
</table>