Incorporating Evidence-Based Simulation Principles in a Primary Care Program

Kevin Charles Carlson

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Incorporating Evidence-Based Simulation Principles in a Primary Care Program

DNP Project
Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

St. Catherine University
St. Paul, Minnesota

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ST. CATHERINE UNIVERSITY
ST. PAUL, MINNESOTA
This is to certify that I have examined this
Doctor of Nursing Practice DNP project manuscript
written by

Kevin Carlson

and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by
the final examining committee have been made.

Graduate Programs Faculty

_________________________________________________
Name of Faculty Project Mentor

_________________________________________________
Date

DEPARTMENT OF NURSING
Incorporating Evidence-Based Simulation Principles in a Primary Care Program

The American population utilizing the health care system is more diverse and living with increasingly more comorbidities, resulting in increasingly complex patients under nurse practitioners' care (Cohen et al., 2018). This changing population demographic is placing additional stress on nurse practitioner education programs to train and prepare nurse practitioners to deal with these progressively complex patients, with further demands being applied to the current didactic education strategies as well as the training in clinical settings (American Association of Colleges of Nursing [AANC], 2015; Lioce et al., 2020). This evolution in education in preparing qualified and competent nurse practitioners falls upon nurse practitioner educators. One adaptation to curriculums by nurse practitioner educators is the increased use of healthcare simulation-based education. Following the success in aviation education in the United States military, simulation-based education is increasingly being used in healthcare education to improve patient care and safety (Benishek et al., 2015).

Research by The National Council of State Boards of Nursing (NCSBN) found that high-quality simulation education can be substituted for up to 50% of traditional clinical hours in entry-level nursing programs (Alexander et al., 2015). Numerous research examples can be cited that demonstrate simulation and repetitive practice result in significant improvement in learning in healthcare-based education programs. Some examples include nursing students' improved recognition of simulated heart sounds, preceding improvement in recognition of actual human heart sounds (Barrett et al., 2006; Issenberg et al., 2005; Wayne et al., 2005). Limited but increasing evidence supports simulation to bridge learning from classroom to practice in assessment competencies in nurse practitioner clinical education (Hayden et al., 2014; Jeffries et al., 2019; Kesten et al., 2015).

Healthcare simulation helps create a safe learning environment. It allows practitioners to test new clinical processes and enhanced hands-on skills and critical thinking before students touch a patient.
Incorporating Evidence-Based Principles

Simulation allows nurse practitioner students to prepare for clinical experiences in an environment without the associated anxiety of injuring an actual patient. Also, simulation can help students examine their knowledge, personal beliefs, and values related to poverty, resulting in improved patient care for lower socioeconomic patients (Yang et al., 2014). Educational content done via simulation that focuses on cultural competency may improve health outcomes among the lesbian, gay, bisexual, and transgender (LGBT) community (McEwing, 2020). Compared to apprentice-based on-site clinical education, healthcare simulation offers organized learning experiences that may be difficult to obtain in apprentice-based clinical education.

**Problem Statement**

Nurse practitioner faculty at a private midwestern university identified the need to improve simulation activities in their primary care nurse practitioner (PCNP) program. Simulation-based learning requires a facilitator who has the education, skill, and ability to guide, support and seeks ways to assist participants in achieving expected outcomes (INACSL Standards Committee, 2016). Reinforcing learned concepts, communication skills, and other relative clinical concepts through healthcare simulation can improve student outcomes and improved patient outcomes (Zendejas et al., 2012). Faculty competency is a crucial aspect of the simulation experience. The dynamic interactions between facilitator and participants during well-designed pre-briefings and debriefings are critical to simulation education (Cowperthwait, 2020; Jeffries et al., 2015). The PCNP program does not currently have a standard of practice for simulation activities across courses and the curriculum as a whole. The existing simulation activities done in the program are pass or fail and use other nurse practitioner students and faculty to play the role of the patient. By expanding the use of evidence-based healthcare simulation in the nurse practitioner program, faculty can increase student confidence.
as students are expected to enter the workforce with clinical competency as well as a high degree of confidence in managing patients with increasingly complicated medical conditions. Despite the current curriculum meeting accreditation competency, the lack of leveled progression, refinement, and educational simulation application may leave graduates struggling with confidence in clinical skills.

There is currently insufficient evidence to show that simulation-only teaching is equivalent to traditional teaching in nurse practitioner education (Fent et al., 2016; Rutherford-Hemming et al., 2016). Though limited and increasing evidence supports the use of simulation to bridge learning from classroom to practice in the assessment of competencies in nurse practitioner clinical education (Jeffries et al., 2019). Assessment of skills such as ECG interpretation, fundamental x-ray evaluation, splinting, and suturing may be best evaluated using simulated situations after leveled didactic instruction. Deliberate practice and use of simulations are evidence-based teaching methods grounded in information processing and skill acquisition and maintenance (Jeffries et al., 2019; Warren et al., 2016). Numerous examples can be cited that demonstrate the use of simulation technology resulting in significant improvements in learning in healthcare-based education programs, such as nursing students' recognition of simulated heart sounds and recordings of actual human heart sounds (Barrett et al., 2006; Issenberg et al., 2005; Wayne et al., 2005). Additionally, there is significant evidence demonstrating the effectiveness of simulation-aided education on student satisfaction and learning outcomes within undergraduate nursing programs; but currently, little evidence about its use and effectiveness within nurse practitioner programs.

While simulation can replace actual clinical hours in pre-licensure nursing education the National Organization of Nurse Practitioner Faculties (NONPF) and the National Task Force on Quality Nurse Practitioner Education (NTF) do not have sufficient evidence to support using
simulation as a substitution for advance practice nursing student’s (APN) clinical hours. There is evidence that simulation-based activities increase satisfaction, confidence, and knowledge in APN students (Nye et al., 2019; Warren et al., 2016).

**Needs Assessment**

In response to the changes in nurse practitioner education, a midwest university identified healthcare simulation as one area of improvement. Informal discussions with the program’s nurse practitioner faculty revealed a gap in knowledge and skill among faculty in the development, facilitation, and measures involved with healthcare simulation. A Simulation and Lab Restructuring task force with a sub-group dedicated to improving simulation use for the nursing curriculum was formed. The sub-group completed a strengths, weaknesses, opportunities, and threats (SWOT) analysis for experiential learning activities. The analysis findings identified that faculty needed more development in simulation use. Also, there was no unified language and terminology, and not enough faculty are certified or educated in simulation methodology and usage. Based on the information gained through the SWOT analysis, improvement efforts at the university focused on increasing and improving simulation use. This project focused on the facilitation and use of evidence-based best practice simulation principles.

**Purpose Statement**

The purpose of this evidence-based practice (EBP) quality improvement (QI) project was to implement a faculty development program on aspects of evidence-based, best practice healthcare simulation in the school’s PCNP program. This training was followed by measurement of faculty learning via a simulation workshop and post-education surveys. The PICO question used to gather evidence for this project was: For nurse practitioner faculty, what are the effects of establishing
evidenced-based simulation training compared to current practice on faculty’s confidence and satisfaction with the utilization of simulation in educational practice?

**Theoretical Framework**

Faculty in the PCNP program are licensed professional nurses with graduate degrees and working experience who are all adult learners. The students within the program are licensed professional nurses with baccalaureate degrees. Adult Learning Theory by Malcolm Knowles helps provide a framework to help develop learning activities for the faculty development. Knowles’ Adult Learning Theory has greatly influenced clinical education, especially those using simulation (Clapper, 2010). Some of the unique barriers to learning that adult learners face include lack of time, low confidence level, and lack of information regarding the benefits of the learning experience (Carlson et al., 2018; Lioce et al., 2020). Knowles’ theory also identified characteristics that distinguish the adult from the pre-adult learner. These characteristics include improved self-directedness, as well as previously learned experiences that become resources in learning. Also, adult learners possess an increased readiness to learn and grow, applying previous knowledge to aid in internal motivation and the desire to know why something is being taught (Clapper, 2010). The role of the instructor is that of proactive learning (Carlson et al., 2018). Adult learners enter into simulation experiences to change skills, behaviors, and degree of knowledge and comprehension. Adult learners are more self-directed and use their life experiences to increase learning and need educators to facilitate their learning (Lioce et al., 2020).

**Literature Review**

**Search Strategy and Appraisal**

A comprehensive review of the literature was completed using the identified PICO question. Literature searches were conducted using Medline, PubMed, and CINAHL Plus. Also, The
International Nursing Association for Clinical Simulation & Learning (INACSL), The Association of Standardized Patient Educators (ASPE), and Society for Simulation in Healthcare (SSH) were queried for literature related to healthcare simulation. Keyword and subject heading search terms included debriefing, evaluation, facilitation, INACSL standards, objectives, outcomes, patient simulation, pre-briefing, simulation design, simulation format, simulation training, simulation, and simulation-based learning. Combining search terms using a Boolean phrase narrowed results. Using the Boolean phrase "and" to combine search terms, CINAHL yielded ten articles selected for appraisal, Medline generated nine articles, and PubMed seven.

Additionally, four of the selected articles were identified from a reference list from other chosen writings. Articles were then appraised using the Johns Hopkins Nursing Evidence-Based Practice: Model and Guidelines (JHNEBP) system (Dang & Dearholt, 2017). Articles selected for review included randomized control trials (RCT), expert opinion, meta-analysis, and quasi-experimental designs.

**Synthesis of Research**

Research into the use of healthcare simulation in entry-level nursing is robust. The large and landmark NCSBN study supports the idea that high-quality simulation education could be substituted for half of the traditional clinical hours in entry-level nursing programs but did not examine advanced practice education (Alexander et al., 2015). Research into healthcare simulation use in entry-level nursing supports that simulation improves students’ skills and critical thinking (Barrett et al., 2006; Benishek et al., 2015; Issenberg et al., 2005; Wayne et al., 2005). Research into simulation use in nurse practitioner education is sparse; investigation into simulation use in physician training in medical school is robust, with medical students exhibiting improved ability at electrocardiogram interpretation, x-ray interpretation, and hands-on skills (Antiperovitch et al., 2017; Auseon et al., 2009
Burns et al., 2019 Porras et al., 2016). Research on simulation in nurse practitioner education supports that simulation increases student satisfaction, confidence, communication skills, and knowledge in advanced practice nursing (APN) concepts (Nye et al., 2019; Warren et al., 2016; Zendejas et al., 2012). More current research shows increasing evidence that supports the use of simulation to bridge education from the classroom to practice in the assessment of competencies (AHRQ, 2017; Hayden et al., 2014; Jeffries et al., 2019; Kesten et al., 2015). Additionally, Mompoint-Williams et al. (2014) found that simulation allowed students to apply learned theories while using repetition of assessment and clinical skills, resulting in increased self-assessed competency.

In addition to simulation increasing competency in learned concepts and hands-on skills, simulation-assisted education can improve communication skills (Zendejas et al., 2012). The ability to work with diverse populations is improved as well with simulation education. Yang et al. (2014) found that practice via simulation improves nurse practitioner skills in providing culturally competent care to those living in low-income situations. McEwing (2020) found that nurse practitioners can improve how they provide care to the lesbian, gay, bisexual, and transgender (LGBT) population through simulation education and practice. While simulation has been shown to improve educational standards, empirical evidence fails to support using simulation in place of direct patient care clinical hours in NP education (Rutherford-Hemming et al., 2016). Recently, NONPF has released a paper that begins the process of establishing simulation guidelines and best practices for nurse practitioner programs (Lioce et al., 2020). While the synthesis of current research supports the importance of using high-quality simulation to supplement nurse practitioner education, it is not robust enough to support using simulation activities in place of clinical hours.

**Project Implementation**

**Purpose**
The project's objective was to create and implement a faculty development program on the facilitation of evidence-based healthcare simulation. The problem addressed with this educational activity was the lack of high-quality health care simulation as a teaching and assessment tool within the primary care nurse practitioner program, with subsequent change and implementation of simulation in the current practice in the primary care nurse practitioner program.

**Design**

The project used a pre-and post-test design to evaluate faculty's confidence in using simulation activities. The development intervention used 2-two hour online educational webinars based on the International Nursing Association for Clinical Simulation and Learning (INACSL) standards on evidence-based healthcare simulation (2016). The webinars were developed in collaboration with the director of simulation in the university’s school of health and offered to all school of health faculty. The two webinars on evidence-based practice simulation learning activities included concepts of prebrief, debrief, assessment, and simulation facilitation. Following participation in the two webinar sessions, NP faculty were invited to participate in a three-hour virtual workshop to apply what they had learned about prebrief and debrief concepts.

Faculty participants were asked to complete a pre-and post- webinar self-reported assessment on confidence in the use of simulation to evaluate outcomes. The pre-training self-assessment questionnaire was based on a 5-point Likert scale (1 = no confidence, 5 = high confidence) to assess confidence and comfort with the aspects of evidence-based simulation, including the concepts of prebrief, debrief, and assessment. The questionnaire was adapted from the Center for Medical Simulation Debriefing Assessment for Simulation in Healthcare (DASH) Instructor Short Version Tool (2011). The tool is designed to evaluate and develop debriefing skills (Simon et al., 2012).
Additionally, two six-question post-webinar quizzes were created and administered following each webinar to measure learned concepts from each session.

**Execution**

The University’s Internal Review Board approved this project as a quality improvement project. Attendance to the webinars was open to all faculty in the school of health, but only PCNP program faculty were surveyed. Two doctor of nursing practice (DNP) students collaborated on aspects of this project. They met with the PCNP program co-directors to discuss the overall goals and objectives of the project and obtain the directors' support. An email was sent to all PCNP program faculty (n= 11) inviting them to participate in this DNP quality improvement project. Implied consent was assumed when faculty voluntarily completed surveys and participated in the webinars and final workshop. Application for ANCC-approved CE was completed, and ultimately four contact hours were awarded to faculty participating in the webinars.

Faculty completed a 6 question self-assessment of their perceived pre-intervention confidence levels approximately two weeks before the first webinar via the online Google forms survey tool. The questions were on a five-point Likert scale (see Appendix A). The first webinar, which covered topics centered around simulation design, outcomes, and objectives, was conducted via a Zoom meeting and was completed in an estimated two hours. After the conclusion of this webinar, the first six-question multiple-choice quiz was administered via Google forms. See Appendix B for these questions. The second webinar, which focused on simulation facilitation and debriefing, was completed via an online Zoom meeting. Again, a second six-question quiz on topics covered in the webinar was conducted via Google forms (see Appendix C). The final aspect of the project was the three-hour workshop. This activity allowed participants to partake in a virtual and interactive simulation experience. The faculty participants were divided into groups that received a patient scenario and history to review prior to the
workshop. Throughout the workshop, participants had the opportunity to play the role of a faculty member that facilitated a simulation prebrief and debrief as well as the role of the student learner. After completing all learning activities, a second survey, the post-development confidence self-assessment, was administered via Google forms.

**Evaluation**

**Results**

Eleven faculty members were invited to participate in the project. Ten faculty attended the initial session; ten participated at the second webinar, and ten participated in the third interactive workshop webinar. Two surveys, the pre-intervention confidence survey and a post-intervention confidence survey were administered to faculty. All ten participating faculty completed the six-question pre-webinar survey assessing their confidence in using simulation (see Appendix A). The post-intervention confidence survey included the same six questions as the pre-simulation survey with three additional fill-in-the-blank questions on the future sustainability of simulation development for faculty. Eight faculty members participated in the post-intervention survey. The raw scores for the faculty's pre-intervention self-assessments are demonstrated in Table 1. The scores for the faculty's post-intervention self-assessment are demonstrated in Table 2. In addition to the two confidence surveys, the two post-webinar quizzes were administered. Each quiz contained six questions related to the preceding webinar content (see Appendix B for webinar one questions and Appendix C for webinar two questions). Eight faculty completed the quiz for the first webinar, and seven faculty completed quiz for the second webinar. All faculty's names have been randomized then assigned a letter for data analysis. The comparison scores of the pre- and post-intervention surveys are demonstrated in Table 3. The raw scores for the two post-webinar quizzes are in Table 4.
Table 1

Pre-Simulation Faculty Development Self-Assessment

<table>
<thead>
<tr>
<th>Participant</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
<th>Question 5</th>
<th>Question 6</th>
<th>Total</th>
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<tr>
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<td>3</td>
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<td>4</td>
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<td>4</td>
<td>3</td>
<td>3</td>
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<td>19</td>
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<td>4</td>
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<tr>
<td>D</td>
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<tr>
<td>E</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>23</td>
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<tr>
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<td>3</td>
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<td>G</td>
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<td>22</td>
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<tr>
<td>J</td>
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<td>4</td>
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<td>4</td>
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<td>24</td>
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</tbody>
</table>

Response Scale
1- Not confident at all  2- Little confidence  3- Somewhat confident  4- Mostly confident  5- Very confident

Table 2

Post-Simulation Faculty Development Self-Assessment

<table>
<thead>
<tr>
<th>Participant</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
<th>Question 5</th>
<th>Question 6</th>
<th>Total</th>
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<tr>
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### Table 3

Comparison of Pre- and Post Simulation Faculty Development Self-Assessment

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<th>Pre-Simulation Results</th>
<th>Post-Simulation Results</th>
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<tr>
<td></td>
<td><img src="chart6.png" alt="Pie Chart" /></td>
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</table>

Legend:
- **Not confident at all**
- **Little confidence**
- **Somewhat confident**
- **Mostly confident**
- **Very confident**
<table>
<thead>
<tr>
<th>Pre-Simulation Results</th>
<th>Post-Simulation Results</th>
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</thead>
<tbody>
<tr>
<td>Question 4</td>
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<td></td>
<td><img src="image6" alt="Pie chart" /></td>
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</tbody>
</table>

Legend:
- Not confident at all
- Little confidence
- Somewhat confident
- Mostly confident
- Very confident
Table 4

Post-Webinar Quiz Scores

<table>
<thead>
<tr>
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<td></td>
<td>Simulation Best Practices &amp; Prebrief Quiz</td>
<td>Simulation Debriefing &amp; Assessment Quiz</td>
</tr>
<tr>
<td>Participant</td>
<td>Total Scores</td>
<td>Participants</td>
</tr>
<tr>
<td>A</td>
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<td>A</td>
</tr>
<tr>
<td>B</td>
<td>6.00 / 6</td>
<td>B</td>
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<tr>
<td>C</td>
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<td>E</td>
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<tr>
<td>J</td>
<td>5.00 / 6</td>
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</table>

Analysis

Seven faculty participated in both the pre-and post-intervention confidence surveys. A paired \( t \)-test was performed for each of the six questions on the surveys. Question one asked faculty about their confidence in creating a simulation environment. The results from the pre-test (\( M = 3.385, SD = 0.74 \)) and post-test (\( M = 4, SD = 0 \)) showed that the project’s intervention resulted in a statistically significant improvement, \( t(7) = 2.3760, p = 0.0492 \), for question one.

Question two asked faculty about their confidence identifying the strengths or weaknesses in a simulation. The results from the pre-test (\( M = 3.13, SD = 0.64 \)) and post-test (\( M = 4, SD = 0 \)) showed that the project’s intervention resulted in a statistically significant improvement, \( t(7) = 3.8617, p = 0.062 \), for question two. Question three dealt with the prebrief and whether the faculty felt confident
introducing the learning objectives. The results from the pre-test (M = 3.75 SD = 0.71) and post-test (M = 4.25, SD = 0.46) showed that the project’s intervention resulted in a statistically significant improvement, $t(7) = 2.6458, p = 0.0331$, for question three. Question four assessed psychological safety by asking faculty their confidence in preventing shame or humiliation during a simulation. The results from the pre-test (M = 3.38 SD = 0.74) and post-test (M = 4.38, SD = 0.74) showed that the project’s intervention resulted in a statistically significant improvement, $t(7) = 5.2915, p = 0.0011$, for question four.

Questions five and six were found to not show significant improvement. Question five evaluated faculty confidence in helping participants to learn even though scenarios are simulated. There was not a significant increase in confidence pre-test (M = 3.25, SD = 0.71) compared to the post-test (M = 4.0, SD = 0.76), $t(7) = 2.0494, p = 0.0796 > 0.05$. Question six evaluated debriefing, how faculty are able to relate the simulation to aid in improving students’ future clinical practice. There was not a significant increase in confidence pre-test (M = 3.5, SD = 0.53) compared to the post-test (M = 3.88, SD = 0.64), $t(7) = 1.1578, p = 0.2849 > 0.05$. The aggregate survey scores (out of 30) for each of the seven faculty member’s pre- and post-intervention surveys were analyzed. The total aggregate scores for each participant were analyzed via a paired t-test. There was a significant increase in pre-test confidence (M = 20.38, SD = 2.45) compared to the post-test (M = 24.50, SD = 1.07), $t(7) = 4.4154, p = 0.0031$.

In addition to the paired t-tests conducted on pre-and post-intervention confidence, correlation analysis was done on the faculties’ total confidence scores out of 30 and their quiz scores out of a total of six. There was a negative correlation between the total pre-simulation confidence scores and total quiz one scores ($r = -0.625$). There was a minimal positive correlation between the total pre-simulation confidence scores and total quiz two scores ($r = 0.1919$). There was no correlation between
total post-simulation confidence scores and total quiz one scores \((r = 0)\) and a slight correlation between total post-simulation confidence scores and total quiz two scores \((r = 0.369)\).

**Conclusions and Recommendations**

It had been identified that the PCNP program needed to improve its use of evidence-based simulation. The goal of this project was to improve faculty confidence with evidence-based simulation. In analyzing the pre-and post-intervention surveys, it was demonstrated that faculty showed an improvement in their confidence using simulation as an educational tool.

The project was limited to focusing on the concepts encompassing the facilitation of evidence-based simulation activities. Because of this focus, further development and opportunities for faculty to train in the use of simulation are recommended. During the project, faculty showed readiness to increase their use of evidenced-based simulation in their curriculum. This openness shown by faculty will be crucial when implementing further development opportunities. Following the hiring of a simulation director for the school and the Simulation and Lab Restructuring taskforce formation, there is now added faculty support. This additional support will be beneficial for all faculty that desire to increase and improve their use of evidence-based simulation. The availability of these new resources will significantly enhance the incorporation of simulation into a new curriculum. Areas of simulation that were not discussed in this project but identified for further development are creating customized simulation scenarios, using proper assessment tools and strategies, and assessing objectives and outcomes. The training of standardized patients would also be a fundamental change in the program, as the current standard is to utilize untrained faculty and students as patients in their simulation scenarios. This faculty development project was an encouraging first step to enhance the curriculum by providing the basics of evidence-based simulation principles in the university’s primary care nurse practitioner program.
References


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Appendix A

Simulation Confidence Survey

Please provide your best self-assessment of knowledge and understanding considering your past experiences and learnings related to simulation assessment, using the 1 through 5 rating scale.

<table>
<thead>
<tr>
<th>Question</th>
<th>Not confident at all 1</th>
<th>Little confidence 2</th>
<th>Somewhat confident 3</th>
<th>Mostly confident 4</th>
<th>Very confident 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Create a simulation environment.</td>
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<tr>
<td>2. Explain the strengths and weaknesses of the simulation.</td>
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<td>3. Introduce the learning objectives.</td>
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<td>4. Prevent Participants from feeling shamed and humiliated during a simulation experience.</td>
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<tr>
<td>5. Discuss issues about realism and help Participants learn even though the cases were simulated.</td>
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<tr>
<td>6. Able to tie observations together and relate the case to ways the Participants could improve their future clinical practice.</td>
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</tbody>
</table>

Revised from The Debriefing Assessment for Simulation in Healthcare (DASH) – Instructor Version, Short Form (2011).
## Appendix B

**Simulation Best Practices & Prebrief Quiz.**

<table>
<thead>
<tr>
<th>Questions</th>
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</table>
| 1. Which of the following would be considered a standard of best practice in healthcare simulation?  
A. It is required to create an assignment for simulation Participants to complete prior to a simulation experience that relates to the condition or problem they may encounter during the simulation scenario  
B. Prepare the learner for the simulation experience so expectations of what the learner should come prepared for are well defined  
C. Follow each simulation experience with a debriefing session or an opportunity for learner centered feedback  
D. Both option B and option C are correct |
| 2. Which of the following are INACSL Standards of Best Practice?  
A. Design  
B. High fidelity simulation  
C. Facilitation  
D. Both option A and option C are correct |
| 3. A simulation Participant feels psychologically safe when?  
A. The simulation Participant is not required to complete prep work for the simulation experience  
B. The simulation facilitator only provides positive feedback to learners  
C. Participants can engage in a simulation exercise without fear of negative consequences or humiliation  
D. The simulation facilitator ensures a degree of difficulty that allows an opportunity for failure |
| 4. What is the purpose of prebriefing in healthcare simulation?  
A. To set the stage for a simulation experience that maximizes learning opportunities and ensures psychological safety  
B. To let the learner know what they will be graded on  
C. So learners can ask all their questions before the day of the simulation activity  
D. So that all learners hear the same information before a simulation activity |
| 5. Which of the following should be included in a prebrief?  
A. Orienting Participants to expectations of simulation  
B. Giving limited instructions to help simulate real world experience  
C. Use of a fiction contract  
D. Both option A and option C are correct |
| 6. What references are available to support simulation-based education?  
A. Simulation Dictionary  
B. Simulation Theories  
C. Standards of Best Practice  
D. All the above |
# Appendix C

## Simulation Best Practices & Prebrief Quiz.

<table>
<thead>
<tr>
<th>Questions</th>
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</table>
| 1. What is one goal of simulation debriefing?  
   A. To critique learner performance  
   B. To focus on positive aspects of the scenario  
   C. To reflect on learner experience to impact future actions  
   D. To lecture the learner on what they could have done better |
| 2. What are the underlying core concepts of a debriefing framework?  
   A. Communication Phase, Reflective Phase, and Evaluation Phase  
   B. Reflective Phase, Discussion Phase, and Summary Phase  
   C. Reaction Phase, Reflective Phase, and Question Phase  
   D. Reaction Phase, Analysis Phase, and Summary Phase |
| 3. In the summary phase of a debrief what is a strategy?  
   A. Establish a shared mental model about what and why things happened  
   B. Direct the conversation straight to analysis  
   C. Ask the learner to state 1-2 takeaways from the scenario  
   D. Use silence to promote learner reflection |
| 4. Which of the following is an example of an assessment tool to measure effectiveness?  
   A. Debriefing Assessment for Simulation in Healthcare (DASH)  
   B. OPT Model of Clinical Reasoning  
   C. Promoting Excellence and Reflective Learning in Simulation (PEARLS)  
   D. Debriefing for Meaningful Learning |
| 5. What is an objective structured clinical examination (OSCE)??  
   A. A simulation facilitator assessment tool  
   B. A multipurpose evaluative tool utilized to assess competency based on observation  
   C. An activity that follows a simulation experience led by a facilitator  
   D. A simulation debrief framework |
| 6. What measured evaluation(s) of simulation activities is/are beneficial?  
   A. Program evaluation  
   B. Faculty or facilitator evaluation  
   C. Course/Activity evaluation  
   D. All of the above |