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The Effect of a Simulation Experience on Student Perception of Self Confidence

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The Effect of a Simulation Experience on Student Perception of Self Confidence

by

Ginny N. Little

A thesis submitted to the faculty of
Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the
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Abstract

The aim is to determine if participation in a high-fidelity simulation increases student levels of self-confidence. Thirty-eight first year associate degree nursing students enrolled in a medical-surgical course in a southeastern community college participated in a diabetes simulation as part of their course. Students then voluntarily completed a survey indicating self-confidence following the simulation. Descriptive statistics were used to determine the overall mean of student responses to each question on the National League for Nursing (NLN) Student Satisfaction and Self Confidence in Learning Tool. Students rated the teaching helpful and effective with a mean score of 4.47 ($sd = .951$). Students indicated that simulation materials used were motivating and helped with learning with a mean score of 4.53 ($sd = .862$). Participants indicated confidence in mastery of simulation content with a mean score of 3.63 ($sd = 1.172$). Participants rated confidence in development of skills and knowledge attainment with a mean score of 4.11 ($sd = 1.06$). Students rated knowledge of how to use simulation activities to learn nursing skills with a mean score of 4.18 ($sd = .955$). The study suggested confidence in mastery of skills and content covered and perception of simulation as helpful and effective occur concurrently following the simulation experience. Data analysis indicated student's knowledge of application of simulation activities and confidence in the development of needed skills from the simulation occur mutually.

Keywords: Simulation, confidence, critical thinking, communication

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CHAPTER I

Introduction

The profession of nursing is on the brink of experiencing a critical shortage. The introduction of the Patient Protection and Affordable Care Act of 2010, will allow an increasing number of Americans access to healthcare services. For this reason, it is more important than ever to recruit and retain nurses who possess the ability to provide competent care. The use of high-fidelity simulation offers nursing educators a valuable tool to prepare student nurses to build self-confidence and increase competency.

Problem Statement

Students who lack self-confidence in their ability to provide quality care to clients often find it difficult to transition from student nurse to primary care giver upon graduation from nursing school. The absence of self-confidence can greatly affect nursing judgment at the bedside. The ability to practice assertively is required as nurses advocate for client needs. Students deficient in self-confidence do not develop the spirit of inquiry essential to examine evidence-based practice. This translates into professionals who are content with maintaining the status quo.

Justification of the Research

The use of high-fidelity simulation offers students the opportunity to practice in a safe environment that increases self-confidence of clinical skills. Simulation has been utilized by fields such as aviation since the 1970s. Similarly to nurses, pilots engage in critical thinking while performing critical skills (Jefferies, 2007). Simulation can help to bridge the gap between academic and clinical performance. Levett-Jones, Lapkin, Hoffman, Arthur and Roche (2011) examined the idea that simulation offers students the

opportunity to actively participate in client care, in which they are usually relegated to the role of observer, while removing the possibility of harm to clients.

According to Del Bueno (2005) only 35% of new registered nurse graduates meet entry to practice competencies for critical thinking. The expectation for graduates to recognize changes in client status and act to safely manage care is a reasonable expectation for employers. Del Bueno suggests that group participation in client situations allow students to analyze and apply knowledge. Simulation allows students to actively participate in a no harm environment to enhance critical thinking skills.

Hanks (2010) expanded on the role of the nurse as client advocate. The researcher found that promoting safety and communicating with other healthcare personnel on behalf of their client was a vital component to nursing. The researcher discussed using the results of the study to enhance student communication abilities. Simulation allows students to gain experience in a simulated client care environment and to practice communication skills.

Simulations are planned experiences. Nursing educators are able to assign readings to students to correlate with learning outcomes. Students present to the simulation experience with clear guidelines and knowledge gained from reading. Melnyk, Fineout-Overholt, Stilwell, & Williamson (2009) discussed that nurses perform interventions that should incite questions regarding the evidence behind those interventions. Educators have the ability with simulation to examine the evidence-based practice in debriefing, thus increasing the student's spirit of inquiry which will translate into their own practice.

Purpose

The purpose of this study was to measure first-year associate degree nursing students' level of self-confidence following participation in high-fidelity simulation. Increasing student's perception of self-confidence improves critical thinking skills, professional communication, and spirit of inquiry, thus developing more competent practitioners.

Research Question or Hypothesis

This study aimed to answer the following research question:

What is the effect of student's perceptions of self-confidence following participation in a high-fidelity simulation?

Theoretical or Conceptual Framework

The Nursing Education Simulation Framework was used as the framework for this study. This framework is comprised of five conceptual elements including teacher factors, student factors, education practices, simulation design characteristics, and expected student outcomes (Jefferies, 2007). The role of the instructor is to become a facilitator of learning. The teacher is to provide support and guidance throughout the simulation and debriefing following the experience. The student is accountable for their own learning. They must participate actively in simulation, decision making, and debriefing exercises to meet learning outcomes.

Educational practices refer to active learning, diverse learning styles, collaboration, and high expectations that should be considered when designing simulations. Active engagement is essential to the simulation. Simulation experiences should combine aspects of all learning styles to contribute to diverse student learning

needs. Environments of mutual respect will facilitate collaboration during the simulation. Students and faculty should approach simulation with high expectations to achieve positive results.

Simulation design characteristics include objectives, fidelity, problem solving, student support, and reflective thinking. Students should be provided with objectives as well as a brief overview prior to the simulation experience. The level of fidelity for each simulation should be determined by the purpose of the simulation. The student must be given the ability to problem solve by synthesizing information as it is presented. The educator is to determine how and when support or assistance will be offered to the student during the simulation. Reflective thinking refers to the debriefing experience as students and educators evaluate the simulation and what is learned. Outcomes refer to the knowledge obtained, skill demonstrated, learner satisfaction, critical thinking abilities, and self-confidence demonstrated by the student as a result of the simulation (Jefferies, 2007).

For the purpose of this research study, Jeffries' concepts of student and outcomes were used. The student was defined as a first year Associate Degree in Nursing (ADN) student participating in a diabetes simulation. Outcomes were measured by the student's responses on the National League for Nursing: Student Self-confidence in Learning Tool. These concepts are diagrammed in the Conceptual, Theoretical and Empirical (CTE) structure in Figure 1.

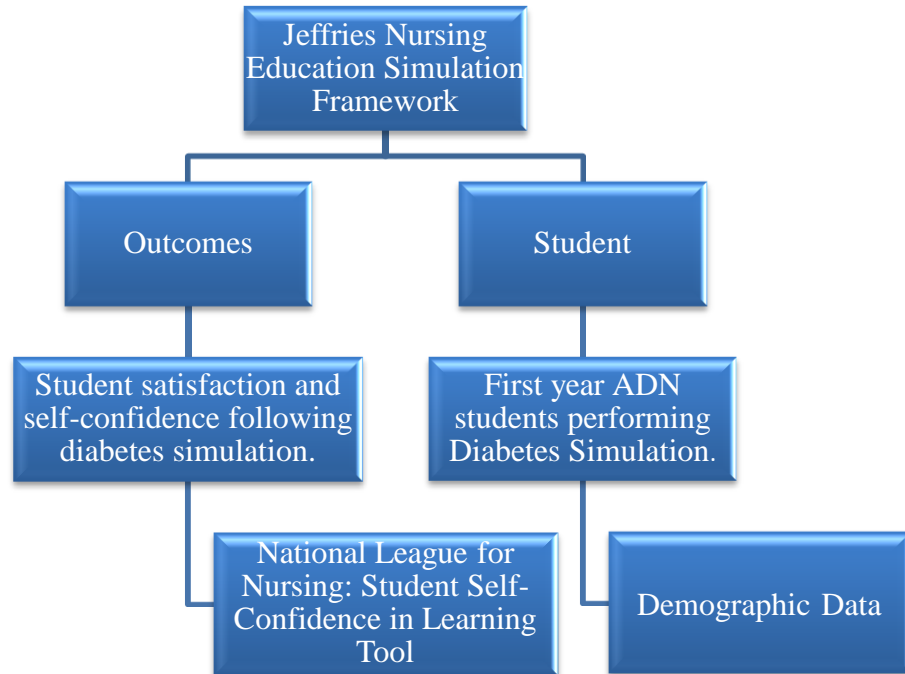


Figure 1: CTE diagram of Jeffries Theory related to Effect of Simulation on Student Perception of Self-Confidence

Definition of Terms

- High-fidelity simulation is a reproduction of a client care situation that mimics a real life scenario in order to allow students to practice decision making and skill performance (Jefferies, 2007).
- Self-confidence is a student's belief that he or she can be successful in performing nursing care (Perry, 2011).
- Critical thinking is a student's ability to examine and synthesize data and respond with skillful reasoning as a guide to actions (Wilkinson & Van Leuven, 2007).
- Communication is "a dynamic reciprocal process of sending and receiving messages" (Wilkinson & Van Leuven, 2007 p. 338).
- Evidence-based practice is the combination of scientific research with clinical knowledge and client values (American Speech-Language-Hearing Association, n.d.).

Summary

Simulation allows nursing educators to capture real life client care scenarios without compromising client safety. Students have the ability to increase self-confidence with repetitive exposure to simulation experiences without harm to actual clients. As nursing educators assist students in the practice critical thinking skills, advocating for client needs, and utilization of evidence based practice, the overall learning experience is enhanced. Increasing student self-confidence in client care will lead to high student satisfaction in meeting course outcomes.

CHAPTER II

Literature Review

High-fidelity simulation offers nursing educators a unique opportunity to train future nurses. With the implementation of this teaching method, educators can impart more than basic nursing skills. Nursing students can strengthen their self-confidence with simulation. Students can utilize simulation to expand critical thinking skills, increase communication skills, and develop knowledge of evidence based practice.

In an effort to produce a comprehensive literature review, a search of the online database Cumulative Index of Nursing and Allied Health Literature (CINAHL) and Health Source Nursing/Academic Edition was performed. Key terms explored during the literature review were self-confidence in nursing students, simulation and critical thinking, nursing students and advocate, evidence-based practice and simulation communication, and Jefferies Simulation Framework.

The literature review will examine areas related to student self-confidence with simulation. The first section will review research associated with critical thinking skills and simulation. The second section will center on simulation and communication skills. The third section will examine evidence-based practice and simulation. Finally, the literature review will conclude with discussion of Jeffries Nursing Education Simulation Framework.

Literature Related to Problem Statement

Simulation and Critical Thinking

Sullivan-Mann, Perron, and Fellner (2009) investigated the outcome of simulation on critical thinking abilities of 53 associate degree nursing students. All students

participated in two simulation scenarios. Students in the experimental group received three additional simulation sessions. The researcher measured the Health Sciences Reasoning Test (HSRT) which was given to both groups as a pretest and posttest. Following simulation, the researcher found that both the control and experimental groups scored higher on the posttest. The control group demonstrated increased scores on the HSRT posttest, but the scores were not statistically significant; however, the experimental group answered significantly more questions correctly during the posttest. The researcher concluded the study reveals compelling evidence that simulation is of a practical value in nursing education.

Levitt-Jones et al. (2011) explored the effect of the level of fidelity of the simulation to knowledge attainment of 84 third year Australian baccalaureate nursing students. The students participated in a 20 minute scenario based on treating a client with hypervolemia and pulmonary edema without educator instruction, followed by a debriefing. The control group utilized a medium-fidelity manikin and the experimental group utilized a high-fidelity manikin. All students were given a pretest and posttest before the debriefing and two weeks following simulation. The researcher found no significant difference in either the pretest or posttest scores of the control group and the experimental group. The researcher determined that evaluation methods should be supported by learning objectives in simulation sessions to direct skills such as critical thinking and clinical reasoning.

The Secomb (2012) study was conducted “to provide evidence on the effectiveness of simulation activities on the clinical decision-making abilities of undergraduate nursing students” (Secomb, McKenna, & Smith, 2012, p. 3475). The

study was completed with 28 third year students among three Australian baccalaureate nursing schools. Students in the experimental group were given a computer-based, self-directed learning experience representing a client with chest pain and a myocardial infarction. Students in the control group were given the same scenarios with a computerized manikin and a clinical instructor serving as facilitator. Participants were administered the Learning Environment Preferences to measure cognitive growth. The researcher found no significant difference between the two cardiac-based scenarios in the experimental and control group. The researcher determined that there was no conclusive evidence that simulation can lead to the development of cognitive skills of undergraduate nursing students versus traditional methods of education.

Liaw (2012) conducted a study to determine if “self-reported confidence and knowledge measures are indicators of clinical performance observed in a simulation-based assessment” (Liaw, Scherpbier, Rethans, & Klainin-Yobas, 2012, p. e35) of 31 students in their final year of a baccalaureate nursing program. All students completed a pretest. Students in the intervention group participated in four 15 minute simulations managing care of a client exhibiting signs and symptoms of decline. Students in the control group were given the simulation scenarios following the posttest. The researcher measured results of the study via a global rating system based on Rescuing a Patient in Deterioration Situation (RAPIDS), a researcher developed questionnaire, and a confidence scale. This study revealed both the control group and intervention group scored higher following posttest, although the intervention group demonstrated a significantly higher level of performance. The researcher established that the knowledge

test and self-confidence measure were not effective tools for the correlation between self-confidence and clinical performance and self-confidence and knowledge.

Simulation and Self-Confidence

Blum, Borglund, and Parcells (2010) conducted a quasi-experimental, quantitative study on the relationship between simulation and self-confidence, and clinical competence of 53 first year bachelor of science in nursing (BSN) students registered for either traditional or simulation-based laboratory. Groups met for weekly instruction. The control group demonstrated skill competency with task trainers and student volunteers, while the experimental group utilized a high-fidelity mannequin. Students completed the Lasater Clinical Judgment Rubric, which examined perceived level of clinical judgment development at midterm and during finals week of the course. Students reported increased competence regardless of traditional or simulation laboratory participation.

Chesser-Smyth and Long (2012) investigated a mixed-methods study of the effect of theoretical preparation and clinical practice on the development of self-confidence in first year Irish nursing students. Students participated in a pretest and posttest measuring self-confidence, focus interviews, self-evaluation questionnaire, and analysis of curriculum content. During the pretest 435 students were given the Personal Evaluation Inventory (PEI), which measures self-confidence. The posttest sample included 146 students due to absences, self-directed study, or unknown reasons. The focus group consisted of 20 students who participated in a 45-60 minute taped interview. PEI results demonstrated student confidence was increased by being given responsibility, clinical familiarity, and feeling like part of the team. Focus groups discussed feeling valued and included in a team atmosphere as enhancing self-confidence. The study found the most

important factors in successful clinical practice were self-efficacy and positive feedback. Students reported that feelings of stress and anxiety were decreased when working in a team centered environment.

Smith and Roehrs (2009) conducted a descriptive correlational study of 68 junior BSN students in a medical-surgical course. Students took part in a simulation, in groups of four, in which students performed a physical assessment and administered medication to a client experiencing respiratory distress. Following simulation and debriefing, students were asked to complete the National League for Nursing Student Satisfaction and Self Confidence in Learning Scale and Simulation Design Scale (SDS). Results from the SDS and Student Satisfaction and Self Confidence in Learning Scale showed no significant relationship between students who had previously cared for a client in respiratory distress and those who had not. The SDS revealed an overall sense of satisfaction with the simulation. Problem solving ability was the only element of self-confidence found to be significant. The researcher determined that objectives and problem solving were the most substantial factor in simulation, suggesting that nursing educators must clearly define objectives and include applicable problem solving in simulation.

Communication and Simulation

Reising, Carr, Shea, and King (2011) performed a descriptive study to compare outcomes in effective communication areas using a roundtable model versus simulation of nursing and medical students. The sample group consisted of 41 BSN students and 19 medical students. Students were placed in groups consisting of two medical students and three to four nursing students. Each group was assigned to either a roundtable discussion

or simulation intervention participating in a mock code scenario. Following participation in the assigned scenario, students were asked to complete a survey regarding role of team, stress, managing group interaction, nervousness, and respectful communication (Reising et al., 2011). Both nursing and medical students noted the encounter to be helpful in the context of interprofessional communication abilities, with a majority of students experiencing a change in how they viewed their role on the team. The simulation groups indicated an increased feeling of timing and realism in contrast to students in the traditional roundtable groups. The researcher reported that collaborative simulation is an effective tool to increase communication skills between disciplines in healthcare.

Kameg, Clochesy, Mitchell, and Suresky (2010) completed a quasi-experimental study which compared traditional lecture to high-fidelity simulation and the effect on the nursing student's communication abilities. The participants in the study were 38 pre-licensure nursing students at a private university. All students were required to attend a two hour lecture and participate in a simulation activity on communication skills, although participation in the study was voluntary. After completion of the simulation, students completed a Self-efficacy Visual Analogue Scale (VAS) and Simulation evaluation survey. Students expressed increased confidence in communication skills; this was evidenced in the scores on the self-efficacy VAS, which were significant for all participants.

Rosenzweig et al. (2008) developed a communication simulation laboratory for 38 acute nurse practitioner students, which evaluated confidence and communication efficacy over the course of two years. The simulation consisted of groups of four to five students who were given four scenarios based on empathetic communication, expressing

bad news, angry patient, and motivational interviewing, each lasting 12 minutes.

Students participated in three evaluation questionnaires prior to simulation, immediately after simulation, and four months after simulation. The researcher found that confidence improved significantly immediately following simulation and four months after simulation.

Evidence-Based Practice and Simulation

Jalali-Nia, Salsali, Dehghan-Nayeri, and Ebadi (2011) completed a quasi-experimental study to examine the effects of evidence-based education on nursing students' knowledge and attitude. The study included 41 second year Iranian nursing students taking part in a medical-surgical course. Participants were divided into a control group and experimental group. The control group received course material through lecture and question and answer sessions. The experimental group utilized an evidence-based approach featuring learning activities such as critiques of research articles and developing summaries of findings. Questionnaires were employed to measure knowledge and attitudes of students in the both groups. Members of the experimental group demonstrated a significant difference in their level of knowledge with respect to evidence-based practice.

Aebersold (2011) described how simulation can assist in the use of evidence-based practice. The study consisted of 78 nurses participating in a 20 minute simulation scenario based on a critical care client in the early stages of urosepsis. Following debriefing nurses were asked if they were aware of evidence-based practices for a client experiencing urosepsis. Feedback following the simulation indicated a positive encounter; nurses were offered a structured tool to bring study results back to the nursing

units for further education of peers. The researcher stated the study “provides an example of how simulation can be used as a strategy to educate nurses and to reinforce practice through the engagement of the nurse in the scenario” (Aebersold, 2011, p. 303).

Literature Related to Theoretical Framework

Wilson and Hagler (2012) evaluated external validation of Jeffries National League for Nursing Simulation Framework. The study took place in a medium-sized academic medical center simulation environment with participants consisting of 27 new graduate nurses within the first three months of hire, three nursing education specialists, and the researcher who was also the instructional designer. Learning objectives centered on care and professional communication for a client exhibiting signs of confusion, poor pain control, and gastrointestinal bleeding with hypotension. Participants were asked to complete a researcher designed pretest and posttest on communication, the National League for Nursing’s Simulation Design Scale, and Student Satisfaction and Self-confidence in Learning Tool. “The model provided a strong framework for developing high fidelity simulations” (Wilson & Hagler, 2012, p. 440). A gain of knowledge of organizing communication to a provider based on client assessment was achieved.

Schlairet (2011) used a mixed-method approach to study evaluation and impact of simulation on 150 junior and senior students in a BSN program and 26 full time faculty. All students had previous exposure to simulation throughout the nursing program. Students completed the Education Practices in Simulation Scale, Simulation Design Scale, and Student Satisfaction and Self-confidence in Learning Tool. Faculty completed the Simulation Use Survey. Faculty noted a moderate improvement in skill performance,

critical thinking, and knowledge outcomes. Students reported improvements in critical thinking, learning, and skill performance as well.

Reese, Jeffries, and Engum (2010) examined the use of the National League for Nursing Simulation Framework measuring simulation design features, student satisfaction, and self-confidence. The study consisted of 15 third year medical students and 13 senior nursing students participating in a 20 minute scenario of a client with chest pain. Participants completed the Simulation Design Scale, Satisfaction and Self-Confidence Scale, and a collaboration scale. Satisfaction rating and collaborative simulation were high with no significant differences between nursing and medical students in self-confidence and satisfaction levels. Students reported collaborative simulation is supportive of learning to function in a real-world client care environment.

Strengths and Limitations of Literature

A review of the literature found there is conclusive evidence that simulation can increase student's perceptions of critical thinking, self-confidence, communication abilities, and utilization of evidence-based practice. The studies were limited in sample size and geographic area. While most of the researchers surveyed only one school of nursing, a broader research area is warranted to provide more conclusive results. Studies could be enhanced if participants in the control groups were given no simulation in order to create more compelling results.

Summary

The studies reviewed revealed that through simulation students can greatly increase levels of competency and critical thinking. Students reported an increase in their perception of self-confidence following simulation. The review of literature finds that by

allowing students to practice communication skills and collaboration with others in an environment in which immediate feedback is available, increased confidence is achieved. Study participants demonstrated an increase in level of knowledge following a simulation, using simulation to provide evidence-based practice validation. The Simulation Framework was found to be a suitable tool for guiding simulation design and student satisfaction.

CHAPTER III

Methodology

As nursing education evolves, the use of simulated client care experiences is an important method for educators to utilize. Simulation offers students the opportunity to replicate exposure to client scenarios, which can lead to the expansion of self-confidence, critical thinking skills, communication abilities, and the development of care founded on evidence based practice.

Research Design

This study used a quantitative, descriptive design to determine the effect of student's perceptions on self-confidence following participation in a high-fidelity simulation.

Setting

This study was conducted at a community college in the southeastern region of the United States. The college simulation laboratory included two separate simulation rooms with two way mirrors and wireless intercom system so that faculty could observe student interaction. The diabetes simulation scenario was conducted using SimMan 3G, which is a high-fidelity simulation manikin.

Sample

Participants in this study were 38 first year ADN students enrolled in a Health Illness Concepts course. Ninety-seven percent of students voluntarily participated in the study. Participants consisted of 95% females and 5% males with a mean age of 32 years old. Students had a mean of four years of previous health care experience.

Protection of Human Subjects

Permission to complete the study was obtained from the College's Institutional Review Board. Participants were given a copy of the informed consent (Appendix A) and notified that participation in this study was voluntary, as well as that the decision not to participate would in no way affect their grades in the nursing program. Demographic surveys were completed anonymously with no identifiers. Those students that choose not to participate were instructed to submit a blank form in order to protect anonymity.

Instruments

A researcher developed demographic form (Appendix B) was used to gather demographic information about the participants. In addition, students were asked to complete the National League of Nursing (NLN) Student Satisfaction and Self-Confidence in Learning Tool (Appendix C). This tool contains 13-items to measure student satisfaction with simulation and self-confidence in learning utilizing a five-point likert scale. The first five statements are related to satisfaction with simulation and the final eight statements rate self-confidence in learning.

Data Collection

Students were informed of the research study prior to beginning the diabetes simulation. The informed consent form was distributed and read aloud to students. Students were informed that participation was voluntary, and the decision not to participate would in no way affect their course grade. Demographic forms and the NLN Student Satisfaction and Self-Confidence in Learning Tool were distributed by researcher. Students were then taken to the simulation laboratory, where the simulation coordinator oriented the students to the laboratory and provided briefing on the diabetes

simulation. Students then randomly selected badges which identified their role in the simulation as charge nurse, primary nurse, secondary nurse, nursing assistant, family member, researcher, and observer. Faculty members played the role of facilitator and physician.

Students were then given shift report by the simulation coordinator who played the role of previous nurse to the client. Nursing students were given 10 minutes to review chart information and prepare for the simulation. The simulation consisted of providing care to a female diabetic client. Students were expected to provide care to the client, administer medications, implement physician's orders, identify signs and symptoms of hyperglycemia and hypoglycemia, and care for a diabetic foot ulcer. Students were expected to obtain additional orders as needed in order to stabilize the client's condition. Upon completion of the scenario, students were debriefed on the scenario by the simulation coordinator. Following debriefing, students completed the surveys and placed them in a labeled envelope located at the front of the classroom. Demographic forms and surveys were collected by the researcher following student participation in the diabetes simulation for analysis.

Data Analysis

Data was entered into Statistical Package for the Social Sciences (SPSS) software by researcher. Descriptive statistics were used to analyze the data.

Summary

The purpose of this research study was to explore the effect of simulation experience on student's perceptions of self-confidence. This study examined student perception of self-confidence in first year ADN students following a high-fidelity

simulation experience. Students were given informed consent, and voluntarily completed a demographic form and the NLN Student Satisfaction and Self-Confidence in Learning Tool following the simulation.

CHAPTER IV

Results

High-fidelity simulation offers students the opportunity to simulate real life client experiences in a safe environment, which can have a direct impact on the self-confidence and clinical skills of the nursing student. The purpose of this study was to determine the impact of high-fidelity simulation on first-year associate degree nursing student's level of self-confidence. This chapter presents results of statistical analysis for this study.

Sample Characteristics

As part of the course, students were required to participate in a diabetes simulation; however, completion of the survey following the simulation was voluntary. Ninety-five percent of the participants were female ($n = 36$) compared to male ($n = 2$, 5%). The average age of participants was 32 ($sd = 9.4$). The majority of participants held a high school diploma or GED ($n = 23$, 61%), compared to other participants that held an associate's degree ($n = 7$, 18%) or bachelor's degree ($n = 8$, 21%) in another field. On average participants had four years ($sd = 4.9$) of healthcare related experience such as certified nursing assistant, surgical technician, or licensed practical nurse. Results are displayed in Table 1.

Table 1

Participant Demographic Data (n = 38)

Demographic Variable	N	%
Gender		
Male	2	5
Female	36	95
Highest Level of Education		
High School/GED	23	61
Associate Degree	7	18
Bachelor's Degree	8	21

Major Findings

Descriptive statistics were used to determine the overall mean of student responses to each question on the NLN Student Satisfaction and Self-Confidence in Learning Tool. Questions 1, 4, 6, 8, and 12 were further examined using descriptive statistics as they focused on student perception of the learning experience from the diabetes simulation. Question 1: The teaching methods used in this simulation were helpful and effective. Students responses varied from 'strongly disagree' to 'strongly agree' with a mean score of 4.47 ($sd = .951$). Question 4: The simulation materials used in this simulation were motivating and helped me to learn. Student responses ranged from 4.53 ($sd = .862$). Question 6: I am confident that I am mastering the content of the simulation activity that my instructors presented to me. Students responses varied from 'strongly disagree' to 'strongly agree' with a mean score of 3.63 ($sd = 1.172$). Question 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. Student responses ranged from 'disagree' to 'strongly agree' with a mean score of 4.11 ($sd = 1.06$). Question 12: I

know how to use simulation activities to learn critical aspects of these skills. Student responses ranged from ‘undecided’ to ‘strongly agree’ with a mean score of 4.18 ($sd = .955$). Results are displayed in Table 2 and Figures 2 - 6.

Table 2

Mean and Standard Deviations from Student Responses

Question	M	SD
1- The teaching methods used in this simulation were helpful and effective.	4.47	.951
4- The simulation materials used in this simulation were motivating and helped me to learn.	4.53	.862
6- I am confident that I am mastering the content of the simulation activity that my instructors presented to me.	3.63	1.17
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	4.11	.106
12 - I know how to use simulation activities to learn critical aspects of these skills.	4.18	.955

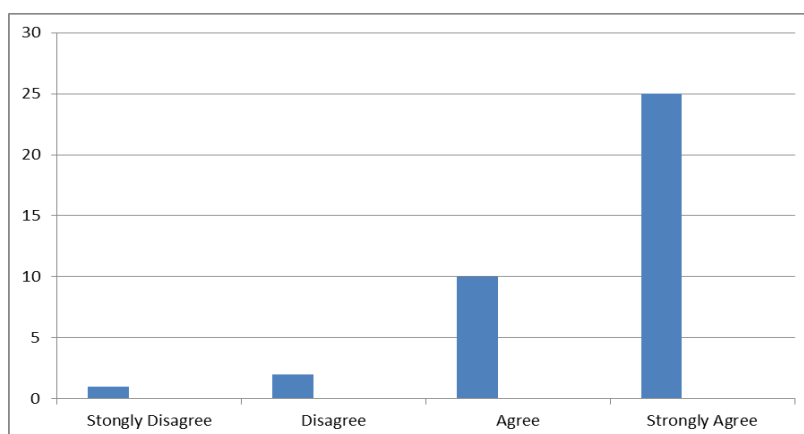


Figure 2. Student Responses to Question 1 to NLN Student Satisfaction and Self-Confidence in Learning Tool.

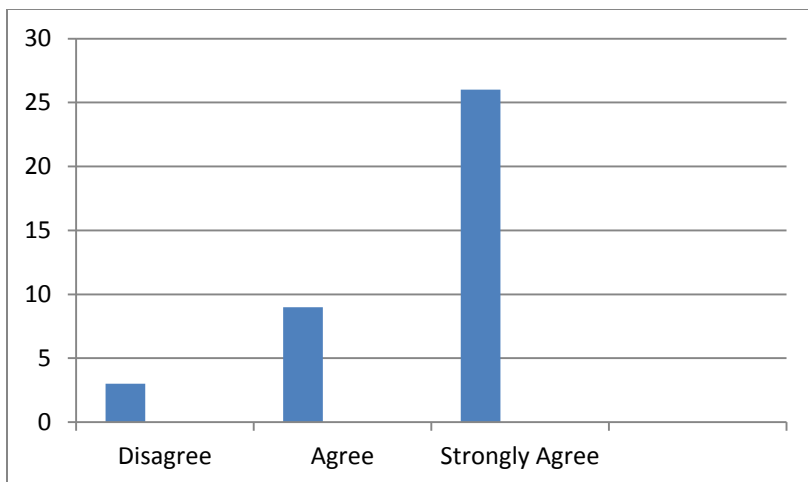


Figure 3. Student Responses to Question 4 NLN Student Satisfaction and Self-Confidence in Learning Tool.

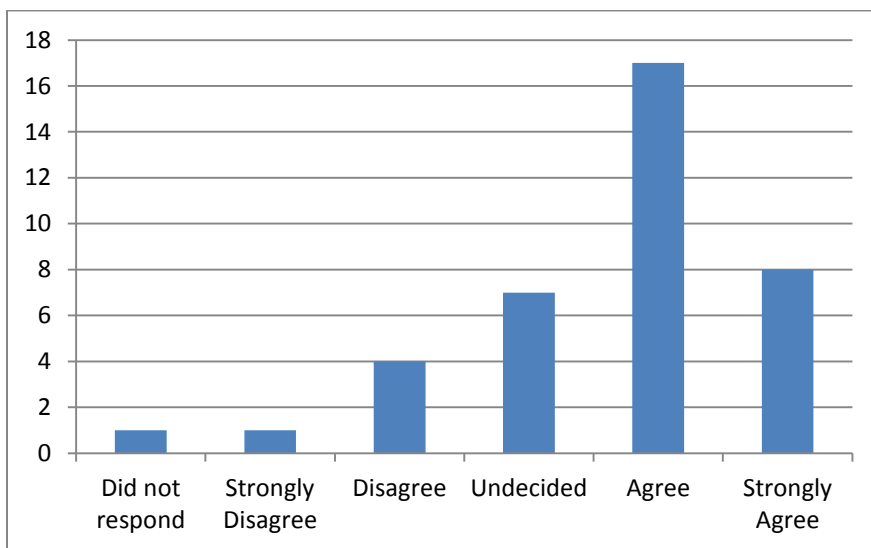


Figure 4. Student Responses to Question 6 NLN Student Satisfaction and Self-Confidence in Learning Tool.

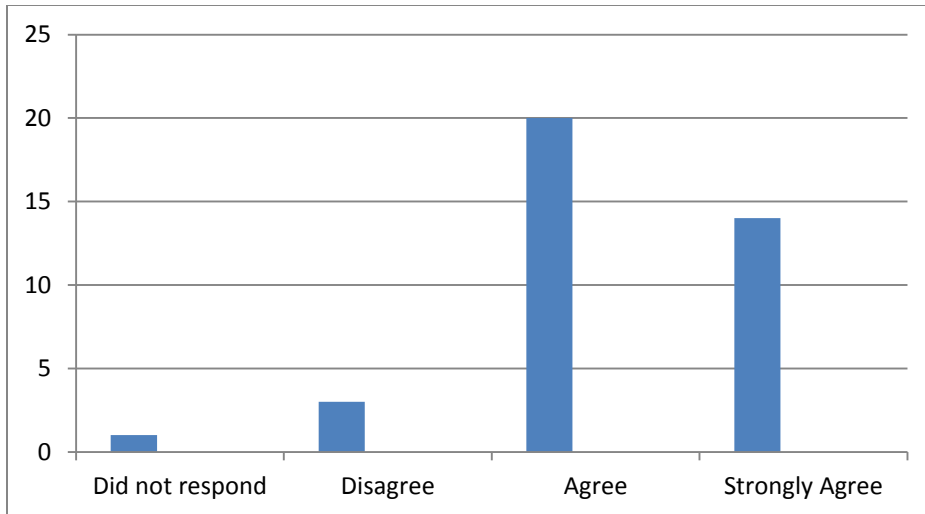


Figure 5. Student Responses to Question 8 NLN Student Satisfaction and Self-Confidence in Learning Tool.

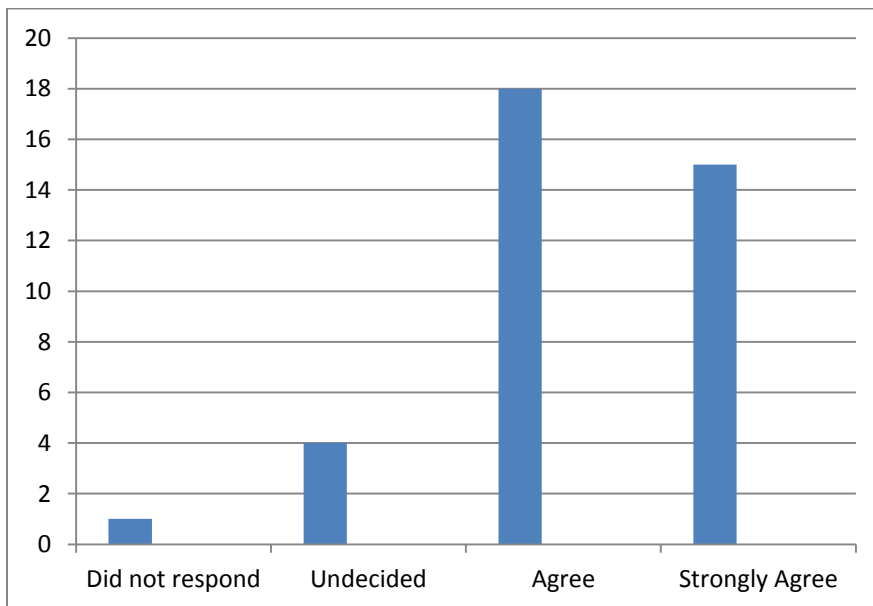


Figure 6. Student Responses to Question 12 NLN Student Satisfaction and Self-Confidence in Learning Tool.

CHAPTER V

Discussion

The development of high-fidelity simulation as a teaching method has increased awareness of how technology can be utilized to prepare student nurses for entry into practice. Student perception of the advantages and disadvantages of the simulation experience are crucial to the expansion of this approach to learning. This study explored the effect of student's perceptions of self-confidence following high-fidelity simulation.

Implication of Findings

Student's responses to the NLN Student Satisfaction and Self-Confidence in Learning Tool indicate the majority of participants agree that simulation as a teaching method was helpful and effective. This finding is consistent with Smith and Roehrs (2009) and Aebersold (2011) which suggest simulation is an effective approach to nursing education. Student responses also indicated that students agreed that the utilization of simulation as a teaching method was motivating and assisted with learning. Reising et al. (2011) supported this finding. Participant survey responses regarding confidence in mastery of content of the simulation activity suggests that the majority of students were undecided. Liaw et al. (2012) and Secomb et al. (2012) also found that self-confidence in the mastery of content following the simulation activity was inconclusive. A majority of students agreed confidence in the development and obtainment of the required knowledge from the simulation to perform necessary tasks in a clinical setting was achieved from the simulation. This is consistent with Jalali-Nai et al. (2011) who reported an increase in overall knowledge in students following

simulation. Student responses indicated that the majority of participants agreed they know how to use simulation in order to learn critical aspects of these skills.

Application to Theoretical/Conceptual Framework

Jefferies (2007) Nursing Education Simulation Framework provided a solid theoretical framework for this study. The concepts of simulation design characteristics and student factors are critical elements to consider when developing simulation activities. The concept of active engagement of the student is essential to meeting learning outcomes for nursing students. Simulation design characteristics, especially the student's ability to problem solve, achieve outcomes with critical thinking, knowledge attainment, and self-confidence were principal components to this study.

Limitations

This study was limited in size and only contained data from one nursing program. The simulation scenario was also the first experience the students and faculty had participated in, thus unfamiliarity with simulation scenarios and student roles in the simulation may have effected perception of self-confidence.

Implications for Nursing

Study findings concluded that student's perception of self-confidence following high- fidelity simulation is an effective method of teaching. The use of simulation allows nursing educators to facilitate clinical experiences when limited access to clinical sites exists. Simulation also allows the student to practice skills, communicate effectively with peers, and build critical thinking skills in a nonthreatening environment controlled by the simulation experience.

Recommendations

This study could be further explored by researching multiple schools of nursing in different geographical areas, in order to gain broader insight into student perceptions. The impact of simulation on communication within the healthcare team is an area where further research is indicated to determine if simulation can increase student competence in this skill. This study could also be expanded by evaluating student mastery of skills during the simulation in order to determine critical thinking ability. Replication of this study for future simulation experiences can also measure the effectiveness of self-confidence in students following repeated simulation experiences in comparison to the first simulation encounter.

Conclusion

Simulation is an innovative method of instruction in which the effects on student self-confidence are essential in successful entry into practice. This study found that students perceive simulation as a valuable tool in order to gain knowledge, skills, and self-confidence required to perform effective care in a clinical setting. Educators control the learning environment during simulation in order to focus on skill and knowledge attainment that cannot completely be achieved in a clinical location. Evidence supports high-fidelity simulation as a beneficial tool in nursing student success.

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APPENDIX A

Informed Consent Form

Effect of Simulation Experience on Student Perception of Self Confidence

You are being asked to participate in a research study conducted by Ginny N. Little, a Master of Science in Nursing student at Gardner Webb University (GWU).

PURPOSE: The purpose of this study is to determine if participation in a high fidelity simulation experience increases student levels of self-confidence.

PROCEDURE: If you agree to participate in this research study, you will be asked to complete a demographic tool and the Student Satisfaction and Self-Confidence in Learning tool. Once you have completed these surveys, you will have no further obligations to the study. The researcher will provide instructions on how to complete each of the surveys. Your participation should take approximately 10 minutes.

VOLUNTARY PARTICIPATION: Participation in this study is voluntary. Your decision to participate or not to participate will in no way affect your current or future relationship with GWU or its faculty, students, or staff or with other members of Caldwell Community College and Technical Institute. You have the right to withdraw from the research study at any time without penalty. You also have the right to refuse to answer any question(s) for any reason, without penalty.

CONFIDENTIALITY: The researcher is asking you to complete each survey anonymously. Please do not disclose any identifying information on the surveys. Once all surveys are collected, data will be analyzed as a group.

Surveys may be placed in the envelope located at the front of the class. All research data will be stored in the researcher's home office in a locked file cabinet. All electronic data will be stored on the researcher's personal computer which is password protected. After completion of the study, all surveys will be given to the GWU School of Nursing for storage. Surveys will be kept for 10 years in a secured location.

RISKS & BENEFITS: The Institutional Review Boards at GWU and Caldwell Community College and Technical Institute have determined that participation in this study poses minimal risk to participants. There are no direct benefits associated with participation in this study.

If you have questions, want more information or have suggestions, please contact Ginny N. Little, who may be reached at 828-495-3732 or at glittle@gardner-webb.edu. You may also contact the principal investigator, Dr. Tracy Arnold at 704-406-4359 or at tarnold@gardner-webb.edu.

If you have any concerns about your rights, how you are being treated, concerns or complaints about this study or benefits or risks associated with being in this study please contact the Institutional Review Board for Gardner-Webb University's School of Nursing

at 704-406-3255 or the Executive Review Board Caldwell Community College and Technical Institute at 828-726-2343.

CONSENT TO PARTICIPATE:

Please retain this copy of the consent form for your records.

I understand the above information and have asked all the questions I have about this research study and my participation at this time. I understand that I am voluntarily consenting to participate in this research study. I understand that by completing the surveys and submitting those surveys, I am giving my consent to participate in this study.

APPENDIX B
Demographic Form

Demographic Form

Please fill in the circle to indicate the following information. This information is used for research purposes only and will not be used to identify you in any way.

Gender:

Male
 Female

Age: _____

Highest level of education completed outside of the field of nursing:

High School/GED
 Associate Degree
 Bachelor's Degree
 Master's Degree or greater

Years of experience in healthcare profession- such as Nursing Assistant, Surgical Technician, or Licensed Practical Nurse: _____ years.

APPENDIX C

National League of Nursing (NLN) Student Satisfaction and Self-Confidence in Learning
Tool

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 beliefs. 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	SD	D	UN	A	SA
1. The teaching methods used in this simulation were helpful and effective.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
2. The simulation provided me with a variety of learning materials and activities to promote my learning the medical surgical curriculum.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
3. I enjoyed how my instructor taught the simulation.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
4. The teaching materials used in this simulation were motivating and helped me to learn.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
5. The way my instructor(s) taught the simulation was suitable to the way I learn.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Self-confidence in Learning	SD	D	UN	A	SA
6. I am confident that I am mastering the content of the simulation activity that my instructors presented to me.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
7. I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
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.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
9. My instructors used helpful resources to teach the simulation.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
10. It is my responsibility as the student to learn what I need to know from this simulation activity.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
11. I know how to get help when I do not understand the concepts covered in the simulation.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
12. I know how to use simulation activities to learn critical aspects of these skills.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
13. It is the instructor's responsibility to tell me what I need to learn of the simulation activity content during class time.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5