IMPLEMENTING INACSL STANDARDIZED SIMULATION TO IMPROVE NCLEX SCORES

by

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of

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DEFINITIONS

To understand the impact of INACSL standards-based simulation on NCLEX pass rates, clarity of terminology is essential. This project will utilize the following terms.

- Clinical Judgment Measurement Model: This model framework developed by NCSBN provides a valid measurement of clinical judgment and decision-making processes paralleling nursing theory models for utilization in standardized, high-stakes exams (NCSBN, 2019).
- Debriefing: Represents a dialogue between two or more people; its goals are to discuss the actions and thought processes involved in a particular patient care situation, encourage reflection on those actions and thought processes, and incorporate improvement into future performance (AHRQ, 2019).
- Facilitator: Simulation educators who ensure simulation experiences provide rich learning through realistic simulation and evidence-based debriefing techniques (Jeffries et al., 2015).
- Fidelity: The measure of perceived realism within simulation events. Physical, cognitive, and psychological fidelity assist realistic immersion by participants (Gore, 2017).
- Participant: Simulation learners who enter simulation events with identified attributes including fear, confidence, and knowledge (Jeffries et al., 2015).
- Simulation: A pedagogical method that allows learners to live realistic clinical scenarios in a safe and controlled environment (Jeffries, 2005).

ABSTRACT

The current nursing shortage further worsens every time a new nurse fails the National Council Licensure Examination (NCLEX-RN) exam. Simulation education presents a possible solution to better prepare nursing students for licensure and professional practice. This project aims to demonstrate how nursing schools can improve NCLEX-RN first attempt pass rates by adhering to INACSL simulation standards and improving clinical judgment. Seminal research by the National Council of State Boards of Nursing (NCSBN) found no statistical difference when nursing schools substituted 50% of bedside clinical time with simulation experiences. The International Nursing Association of Clinical and Simulation Learning (INACSL) created standards of simulation which were adhered to for the previous study. While no specific causal research proves INACSL standards-based simulation training improves NCLEX-RN pass rates, adjacent literature demonstrates simulation learning engages students and improves clinical judgment. The first methodology step in this project proposal establishes a foundation of understanding amongst all nursing education faculty regarding the nine INACSL standards for simulation by conducting a brief webinar. Further training focuses on a tiered approach for educators, explicitly teaching clinical, skills, and simulation. This next tier of faculty would attend a one-day Gateway Debriefing Workshop which briefly trains enhanced simulation debriefing skills. The highest level of simulation-specific instructors will complete a five-day Healthcare Simulation Essentials Course that provides intensive training in simulation theory and debriefing skills for simulation educators. The Debriefing Assessment for Simulation in Healthcare (DASH) tools facilitate the evaluation of project influenced changes and enhance debriefing excellence by utilizing the DASH rater tool. The results of this project proposal are pending execution. Outcomes expected include increased DASH rater evaluations of simulation faculty and improved NCLEX-RN first attempt pass rates up to 100%. Conclusions derived from investigations of this project proposal support INACSL simulation standards adherence enhances simulation outcomes and leads to improved NCLEX-RN first attempt pass rates.

CHAPTER ONE

INTRODUCTION

The COVID-19 pandemic significantly challenges an already strained healthcare system. Among the most significant contributing factors to the strain on patient care is the current nursing shortage. American healthcare employers struggle to hire enough nurses for today's healthcare demands. The current nursing shortage requires 194,500 newly licensed nurses to meet the demand of our current healthcare system (Bureau of Labor Statistics, 2021). This nursing shortage is further impacted when new graduate nurses fail the licensure examination. Approximately 26,841 (16.25%) of 2021 nursing graduates were unable to enter into professional nursing due to first attempt failures on the National Council Licensure Examination (NCLEX)(NCSBN, 2021). Graduate nurses must sit for and pass the NCLEX exam to enter professional nursing practice. Every first attempt NCLEX failure causes delay into practice and worsens the nursing shortage. Sadly, some graduate nurses never enter professional nursing practice after failing the NCLEX licensure exam.

The NCLEX exam requires candidates to apply nursing knowledge and clinical thinking commonly taught during bedside clinical learning. Decreasing clinical site access challenges American nursing schools to provide adequate bedside learning experiences for student nurses (NCSBN, 2014). Clinical simulation education presents a reasonable substitute for the bedside clinical preparation of nursing students (NCSBN, 2014). The NLN Jefferies simulation theory (2005) integrates simulation best practices and offers the educational foundation for next-generation NCLEX clinical judgment questions (NCSBN, 2019). Simulation standards established by the International Nursing Association of Clinical and Simulation Learning

(INACSL) guide educators in providing realistic simulation experiences in place of clinical time that will support the preparation of professional nurses (INACSL, 2021). This project examines failure to achieve nursing licensure, a problem that simulation can reasonably solve.

Importance

This project has two main areas of importance. First, nursing shortages affect the quality of healthcare. Adequate nurse staffing directly relates to patient outcomes and staff retention (Gensimore et al., 2020). Decreased nurse staffing causes reduced access to healthcare. Fewer appointments force patients to prolong unhealthy conditions or seek care in the emergency room at great expense. Unfortunately, society across America suffers from nursing shortages worsened by failures to achieve licensure. Consequences of the nursing shortage include decreased quality of care, reduced access, and increased medical error rates (NCSBN, 2014). Second, failure to achieve nursing licensure costs the potential nurse time and money to retake the exam and lost income. Lastly, hospitals often hire graduated nurses before licensure and rely on this nursing staff supply to meet their healthcare staffing needs.

Current State

The National Council of State Boards of Nursing (NCSBN) creates and maintains the NCLEX exam for nursing licensure. This exam is updated every three years with a new test plan to meet the needs of the healthcare industry. The NCSBN (2014) sponsored research that determined no statistically significant effect when 50% simulation-based clinical experience is substituted for bedside clinical time during prelicensure education. As a result, 89% of nursing education programs across America adjusted curriculums to include simulation, and 61% of

programs substitute simulation for bedside clinical time (Smiley, 2019). The ability to increase clinical education through simulation in 2014 virtually saved the nursing education industry challenged by decreasing clinical site availability. Simulation education of nursing students became especially critical during the COVID-19 pandemic, which forced some programs to utilize 100% clinical simulation with state boards of nursing approval (Mazinga, 2021). The seminal NCSBN (2014) work declared that every participating nursing program in the study adhered to INACSL developed and updated simulation standards for nursing education programs. Today, several regulatory boards of nursing mandate that nursing education programs maintain INACSL standards to achieve similar results (INACSL, 2021).

Research Questions

Scarce research comparing simulation learning outcomes to traditional bedside clinical learning outcomes exists. Many simulation learning success stories represent anecdotal evidence. Linking INACSL standards-based simulation learning to NCLEX success requires the extrapolation of adjacent research. Exploring simulation learning outcomes in nursing education benefits this project. Evaluating INACSL standards and why these standards achieve gold standard recognition and alternatives to INACSL standards deserve investigation. The Next Generation NCLEX Clinical Judgment Measurement Model exam questions mandate nursing educators to re-evaluate professional nurse preparation. Lastly, simulation variations to achieve clinical judgment must be examined and compared for effectiveness.

Project Plan

This project aims to develop training toward 100% INACSL simulation standards compliance by implementing simulation standards workshops for faculty who prepare students for Next Generation NCLEX success. The project plans to implement the eleven INACSL standards for nursing education simulation, which are not native to most nursing educators (INACSL, 2021). Project implementation includes creating and delivering INACSL standards faculty workshops to improve simulation curriculum design and performance. A more refined project goal focuses on one specifically meaningful element of INACSL standards involves simulation debriefing by trained faculty knowledgeable about debriefing techniques for more meaningful learning (INACSL, 2021). Schools of nursing must train faculty regarding evidence-based simulation standards to exceed the demands of the NCLEX examination. Ideally, simulation experiences augment rare, hard-to-obtain, but necessary clinical experiences in preparation for licensure and practice. This College of Nursing is committed to refreshing the Fall 2022 undergraduate nursing curriculum and plans to include nursing simulation as a required course for every nursing student every semester. The simulation curriculum design will mimic concurrent didactic and clinical coursework to synthesize and amplify learning while closing learning gaps not provided in clinical experiences. This College of Nursing's faculty and students endeavor to navigate new frontiers of simulation learning. Naturally, most nursing colleges desire 100% NCLEX passing rate results. Providing INACSL standards-based simulation education to prepare for the challenge of Next Generation NCLEX clinical judgment question supports nursing students and attends to the nursing shortage.

CHAPTER TWO

LITERATURE REVIEW

Overview

The current nursing shortage impacts all aspects of healthcare and worsens by NCLEX-RN first attempt failures. Failing NCLEX-RN licensure scores impact professional nursing candidates, organizations, and patient outcomes. Nursing simulation facilitates experiential learning and readiness for practice while addressing gaps in learning not experienced during bedside clinical. Application of a theoretical framework for design, facilitation, and improvement of nursing education simulation requires understanding. Nursing simulation experiences provide consistent and equitable learning opportunities for each student. This project investigates how the International Nursing Association of Clinical and Simulation Learning (INACSL) simulation standards affect pre-licensure nursing education and National Council Licensure Examination Registered Nurse (NCLEX-RN) first attempt pass rates. Definitions of simulation and nursing terminology will be explained. Literature review search methods, research discovered, and key seminal articles will be synthesized for clarity. Lastly, this project will summarize the current state of research, identify gaps, and propose specific research questions.

Theoretical Framework

The National League for Nurses (NLN) Jeffries Simulation Framework guides this project. Jeffries (2005) published the NLN Jeffries Simulation Framework to guide the development and assessment of simulation processes and outcomes in collaboration with the

National League for Nurses and Laerdal Corporation. They identified the need for simulation training guidance due to nursing faculty shortage, decreased clinical site access, and increased demands of nursing employers for ready-to-work graduate nurses. Ultimately, this simulation framework became accepted as a simulation theory (Figure 2). Initially, the Jeffries simulation framework involved five components, teacher, student, educational practices, simulation design, and outcomes (Figure 1, 2005). After continued testing, the framework evolved to identify a dynamic relationship between facilitator and participant, formerly titled teacher and student. The framework recognizes how facilitators, participants, and educational practices affect outcomes. Eventually, the transition from Jefferies Simulation Framework to Simulation Theory evolved simulation outcomes to understand and include participant, patient, and system outcomes. These outcomes are now hierarchal, starting with participant outcomes followed by patient and system outcomes. Lastly, Jeffries identified best practice elements of simulation design to include objectives, fidelity, complexity, cues, and debriefing (2005). The following figures visualize the original simulation framework and subsequent theory.

Figure 1 represents Jefferies' initial simulation framework and how teacher, student, educational practices, and design characteristics lead to outcomes of learning.

Figure 1
NLN Jefferies Simulation Framework

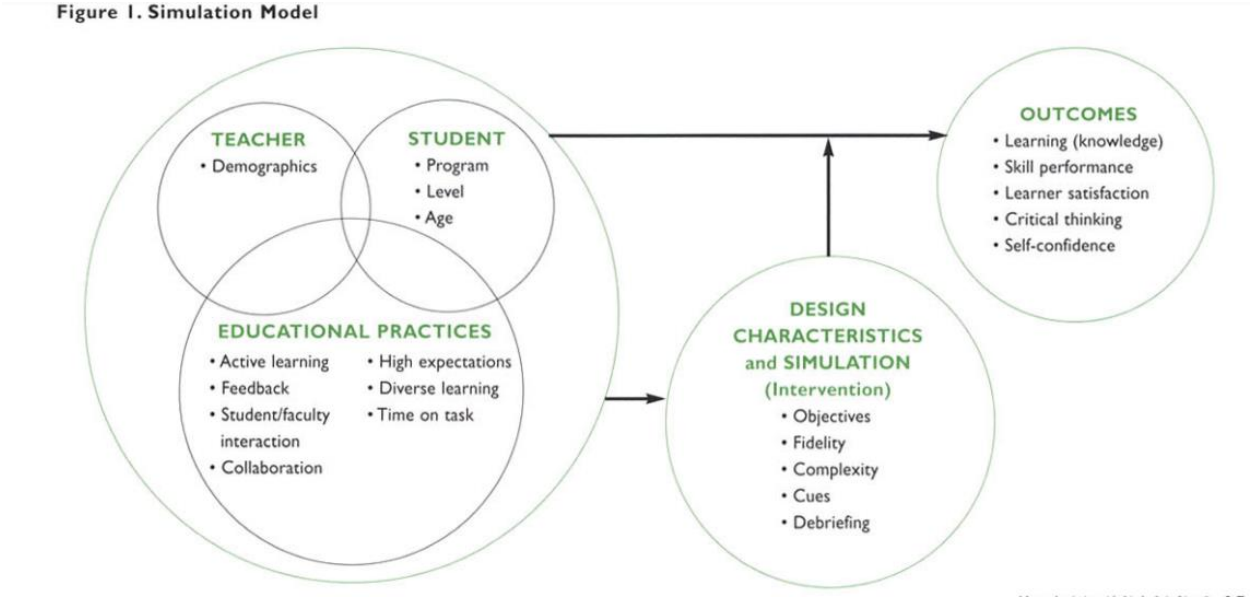
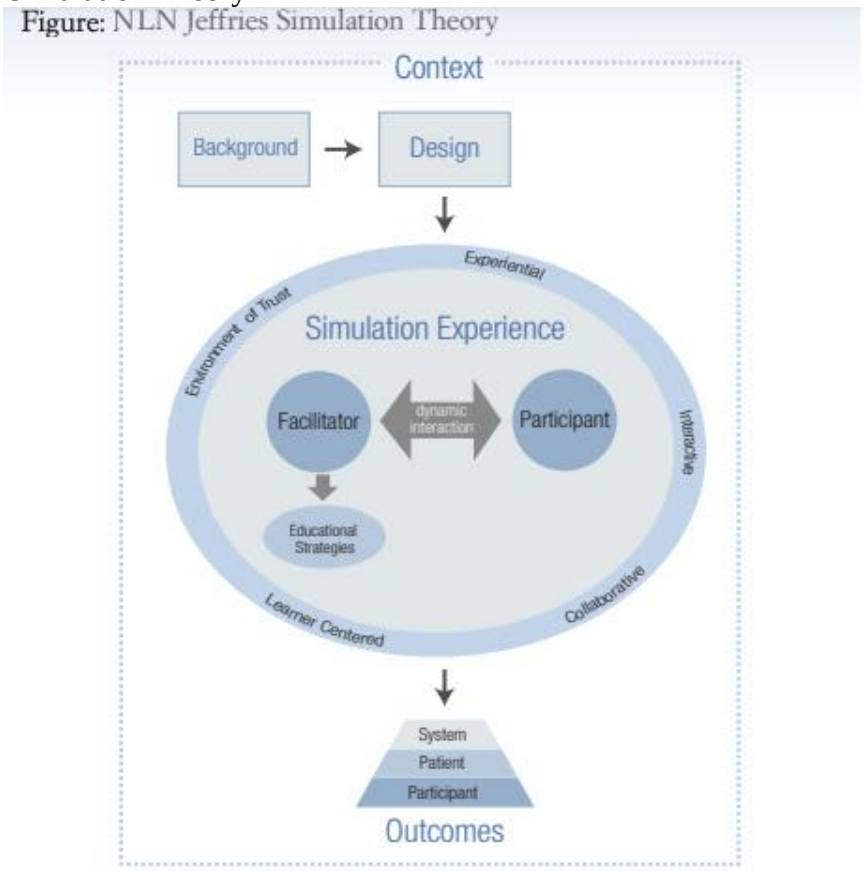


Figure 2 of Jefferies simulation theory includes the facilitator and participant with educational strategies in the middle of the movement from context to outcomes.

Figure 2
NLN Jefferies Simulation Theory



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Research Strategy

There is a dearth of research regarding INACSL standards-based simulation activities improving NCLEX pass rate outcomes. An extensive review of the literature was conducted to determine the effect of INACSL standards-based simulations on pre-licensure nursing program NCLEX scores. The databases utilized included CINAHL, Cochrane, Web of Science, PubMed, and Google Scholar. Search terms included: simulation, NCLEX, INACSL, simulation and NCLEX, simulation and NCLEX and INACSL, and NCLEX and INACSL. A similar search criterion utilized within each database included peer-reviewed articles published within the last five years and printed in English. Inclusion criteria for empirical articles needed content about INACSL, simulation, and NCLEX scores in baccalaureate nursing (BSN) programs. Exclusion criteria removed articles about non-nursing students, associate degree nursing programs, graduate programs, continuing professional education, and unrelated articles. After applying exclusion and inclusion criteria, CINAHL searches found five articles, Cochrane found no related articles, Web of Science found three articles, and Google Scholar found an additional five articles. Hand-searching the bibliography and subsequent citations of an NCSBN seminal study (Hayden et al., 2014) regarding clinical substitution with simulation, producing no effect on NCLEX performance, revealed 412 sources. Applying the same inclusion and exclusion criteria to the 412 hand search results yielded eight relevant articles. The final number of articles reviewed for literature review totaled 21 articles.

Clinical Judgement

Nursing simulation learning provides situational opportunities for nursing students to enhance clinical judgment and perform better on NCLEX exams. The NCLEX licensure examination refreshes every three years (NCSBN, 2019), and the Next Generation NCLEX (NGN) will include clinical judgment measurement model (CJMM) based questions as early as 2023. Clinical judgment questions assess the exam candidate's ability to apply nursing knowledge to complex clinical situations. Several articles recommend nursing program improvements to prepare students for this examination update, including simulation learning (Hensel & Billings, 2020; Riebe et al., 2019; Sherill, 2019). Cueing students for clinical judgment with one-sentence cues, lists of cues, short scenarios, and clinical cases facilitates applying foundational knowledge to clinical judgment (Sherill, 2019). The NLN/Jeffries simulation theory (Jeffries et al., 2015) also utilizes similar cues in simulation design, creating clinical judgment learning opportunities in simulation. Hensel and Billings (2020) discuss teaching NGN clinical judgment using case studies, scenarios, and simulations. Students can think through all the prompts of clinical judgment to safe solutions. The prompts of clinical judgment list in order: recognize cues, analyze cues, generate hypotheses, generate solutions, take action, and evaluate outcomes. These prompts can be designed into every simulation to ensure consistent learning outcomes for each learner. Hensel and Billings' approach is valuable because NGN clinical judgment questions related to case studies rehearsed within simulation enhance student success potential on the NCLEX. Hensel and Billings are not only proponents of the simulation model but also offer a practical way forward to implement it. While the previous study utilized prompts or cues to encourage clinical judgment in a way that was teachable and

accessible, this following study demonstrated how the utilization of INACSL best practices for simulation enhanced student outcomes. Riebe et al. (2019) demonstrated the use of simulation to promote clinical judgment related to diabetic ketoacidosis (DKA). This emergent condition simulation allows learners to practice in a safe environment and learn about an illness not regularly observed in routine clinicals. Utilizing INACSL best practices standards of simulation while developing clinical judgment, this DKA simulation allowed the faculty to address an assessed gap of clinical judgment with excellent outcomes. This article furthers the argument that INACSL best practices make a difference in student outcomes.

NCSBN Seminal Study

History

Simulation utilization by nursing educators increased dramatically in the early 2000s out of necessity to supplement in-person clinical learning. (Hayden et al., 2014). The increasing number of nursing programs created clinical site competition and increased demand for access to limited clinical sites, while safety initiatives decreased clinical access to sensitive areas. Nursing faculty shortages reduced the number of available clinical instructors at clinical sites. As a result, boards of nursing needed guidance on the utilization of simulation in nursing education to determine the value of simulation as a substitute for in-person clinical. Healthcare simulation provides focused, consistent, realistic learning experiences for every student with no risk to living patients and minimizes learning disparities. The National Council of State Boards of Nursing (NCSBN) sponsored seminal research to answer how healthcare simulation could substitute for in-person clinical.

Initial Findings

The NCSBN sponsored seminal research involved a longitudinal, randomized, and controlled national study replacing clinical hours with simulation hours in pre-licensure nursing education (Hayden et al., 2014). This research of 666 nursing students demonstrated that simulation could replace up to 50% of the clinical time without any long-term effect on the student performance, including NCLEX results and productivity in the first years of the nursing profession. Nursing students at ten nursing programs in the United States were randomized into three cohorts, with the control groups utilizing simulation less than 10% of clinical time. The two study groups substituted simulation 25% and 50% of clinical time, respectively, with no statistically significant change in learner outcome. The simulations in this study followed INACSL guidance for simulation standards. Therefore, any future substitution of clinical hours with simulation must follow INACSL standards to expect the same results. Nursing schools across America have increased the utilization of simulation to replace clinical time due to this evidence. One key caveat to these findings for nursing schools is the INACSL standard requiring nursing programs to train faculty to facilitate simulation and debriefing formally. However, only 60% of programs report INACSL faculty training compliance leaving simulation outcomes variable (Smiley, 2019). Interestingly, the NCSBN study has not been repeated or further explored in the last seven years. There are no research articles regarding simulation substitution for in-person clinical of this magnitude or significance to compare to at this time.

Associated Studies

A meta-narrative review published five years after the NCSBN seminal study narrowed relevant literature to 12 articles involving simulation substitution for clinical hours (Roberts et

al., 2019). The study clarified existing challenges to comparative research due to inconsistent definitions and measurement tools. Roberts et al. (2019) identified wide variability in simulation replacement of clinical hours in the United States, United Kingdom, and Australia due to differing clinical hours requirements. For example, fifty percent of 500 student clinical hours differs from 50% of 1000 hours. The total amount of clinical hours appears to have no significant impact on NCLEX results according to research by Potter et al. (2021), found no correlation between clinical hours and NCLEX success after surveying 119 responding nursing programs. This analysis of clinical hours does not specify the quality of hours in clinical or simulation. As a result of early simulation research results demonstrating inconsistencies, several simulation organizations aligned to create national simulation guidelines.

The National Council for State Boards of Nursing (NCSBN) national simulation guidelines evolved from an expert panel including representatives from INACSL, AACN, NLN, SSH, NCSBN, and boards of nursing (Alexander et al., 2015). These guidelines assist nursing programs and state boards of nursing to support best practices in simulation for the 50% concept to maintain quality. The International Nursing Association of Clinical and Simulation Learning (INACSL) standards align with simulation policy, process, and faculty development in this guideline. Utilization of the INACSL simulation standards ensured the consistent application of the NCSBN seminal study and guidelines. The hypothesis that INACSL simulation best practices utilized in the NCSBN seminal study positively affect NCLEX scores while supporting increased use of simulation substitution in place of bedside clinical must be further tested.

Simulation and Fidelity Types

Types of Simulation

High-fidelity simulation presents various forms and alternatives, making universal simulation application difficult. High fidelity or high realism simulation utilizes realistic robotic manikins, equipment, and environments to achieve the most immersive realism for the student. The standardized patient simulation incorporates an embedded live simulated patient actor instead of robotic manikin patients. Virtual simulation engages the student learner with a computerized avatar or patient representation. Diaz et al. (2021) demonstrated that INACSL standards-based clinical simulation outcomes show no statistical difference between high fidelity, standardized patient, and virtual simulation when INACSL standards apply. These results encourage the utilization of various simulation modalities as long as the simulations are INACSL standards-based.

Dosage of Simulation

A literature review by Hanshaw and Dickerson (2020) evaluated 20 studies of high-fidelity simulation use in nursing education to discover that increased dose frequency and length provided more learning for 1787 students supporting the use of simulation. While this study appreciates increased time and frequency of simulation increases learning, there is no conclusion of the optimal dosage of simulation. Locally the Montana Board of Nursing has reviewed and documented support for 50% clinical replacement by simulation (MBON, 2019). Interestingly, the Montana Board of Nursing also requires demonstration that simulation activities connect to programmatic outcomes, including success on the NCLEX exam. A survey of all nursing programs in the United States regarding simulation use in prelicensure programs demonstrated

significant increases in simulation education from 2010 to 2017 (Smiley, 2019). Survey responses (n=902) reveal that 80% of nursing programs know of the NCSBN study and increased the use of simulation for clinical time (78%), especially in medical, surgical, pediatric, and obstetrical nursing education. Determining the optimal dosage of simulation hours is further complicated due to controversy regarding replacing clinical time with simulation time, where one hour of simulation time is equal to one or more hours of clinical time. While there is a paucity of research concerning the appropriate hour ratio for simulation, the acceptable ratio has normalized as 1:2 (Zyniewicz, 2019).

Further research regarding simulation to clinical time ratio testing must be investigated. When nursing programs count each simulation hour worth two times the clinical hour and replace 50% of clinical time with simulation, the result increases the throughput of nursing students each semester. Therefore, more nursing students graduating each semester mitigates the current nursing shortage. In other words, a hypothetical nursing program previously limited by clinical site access for 20 students per semester can increase to 40 students and have the same number of students at the clinical site while substituting the remainder of hours in simulation. After investigating 878 students studying in six different nursing programs, Zyniewicz (2019) found no significant difference in measures outcomes in 1:1 or 1:2 ratios. Many nursing programs now count high fidelity simulation time involving skills, knowledge, and critical thinking as 1:2 hours activities even though extensive research studies do not exist. This dissertation study by Zyniewicz (2019) stands alone considering 1:1 or 1:2 simulation hours replacement of clinical time without additional evidence studies.

Levels of Fidelity

Various levels of fidelity in simulation evaluation by Hanshaw and Dickerson (2020) discovered mixed results supporting high fidelity simulation promoted more significant learning while there was little difference in learning between high and mid-level fidelity. Additional research is needed to translate the dose and fidelity of simulation studies into a working model. Gore (2017) explored BSN students' perceived learning effectiveness for different levels of fidelity and traditional clinical experiences. First-semester nursing students (n=103) and fifth-semester students (n=155) participated in this study. Utilizing INACSL standards for all simulations evaluated the strength of these standards. The study supported INACSL standards-based simulation for clearly defined simulation objectives and matched levels of fidelity for student learning effectiveness. As a result, students preferred traditional clinical experiences with real patients for communication skills learning. This research encourages using INACSL standards for simulation best practices yet reveals that some learning is perceived better in traditional clinical settings.

Clinical Simulation

Clinical simulation designed to supplement bedside clinical learning gaps presents faculty with better opportunities to prepare students for NCLEX success and professional practice. Experiencing nursing theory application within simulation offers alternatives to traditional didactic and bedside clinical applications, with students reporting increased confidence due to simulation and debriefing (Singleterry, 2019). Sarasnick et al. (2017) combined high fidelity simulation and computerized case studies to improve knowledge as measured by the Health Education Systems Incorporated (HESI) assessment tests. Based on the seminal NCSBN study

replacing up to 50% of clinical time with simulation, this program designed simulations synthesized with computerized case studies to meet the learning objectives of the clinical course. This study demonstrates how simulation integrates well with didactic, clinical, and technology adjuncts. Bristol (2018) researched how NCLEX-RN *Client Needs* integration into every skills lab or simulation event benefits nursing students toward NCLEX success. The NCLEX exam encompasses eight client needs that students must be aware of throughout their nursing education, and the Bristol research suggests integration of client needs enhances NCLEX readiness. Clinical simulation activities designed to fill gaps unobtained in clinical experience complete student preparation for entering the nursing profession.

Summary

This project aims to develop training toward 100% INACSL simulation standards compliance by implementing simulation design faculty workshops to better prepare students for Next Generation NCLEX success. We know INACSL created and updated nursing education simulation standards as the gold standard for pre-licensure nursing simulation. The NCSBN seminal study demonstrates that up to 50% of clinical time replacement with simulation succeeds with INACSL standards adherence. Simulation types and fidelity comparisons reveal that all are effective, and learning objectives significantly drive the choice of modality and fidelity level. A significant research gap exists in the seven years since publishing the NCSBN (2014) seminal study, demonstrating no significant change for students when substituting 50% of clinical. No validation of INACSL best-practice standards exists in the literature. The NCSBN and NLN support INACSL standards, but no evidence of learner outcomes exists. With the emergence of the clinical judgment model in the next generation NCLEX-RN (NGN) exams, simulation-

enhanced clinical judgment practice and learning will be essential. Further simulation as a supplement to clinical hours must integrate with clinical gaps to address current and ongoing clinical practice excellence.

CHAPTER THREE

METHODS

Introduction

Addressing the current nursing shortage by increasing first attempt success on the NCLEX exam through enhanced simulation preparation requires implementing INACSL standards and best practices. The purpose of this project aims to improve clinical judgment derived from simulation learning experiences utilizing INACSL standards to improve NCLEX exam proficiency on clinical judgment test items. The design of this project employs a quality improvement process to train nursing education faculty on the best simulation practices consistent with INACSL standards. This College of Nursing setting for this project proposal involves five separate campuses facilitating similar prelicensure curriculums. Project planning guidelines involve INACSL standards, NCLEX measures, QSEN methods, and CNL competencies. Mentors, preceptors, and simulation curriculum committees represent appropriate persons for project planning inclusion. Lastly, the sample population affected by this project includes the nursing education faculty who directly educate student nurses preparing for licensure and professional nursing. Choosing one of the eleven INACSL simulation standards focuses the implementation of this project on debriefing quality improvement. Post-testing of faculty debriefing competency utilizing the Debriefing Assessment for Simulation in Healthcare (DASH) tool allows for objective data collection (Simon, 2018). One academic year represents the intended timeline. Budget considerations include labor for training, data collection, and quality monitoring of the simulation program.

Design

The design of this quality improvement project proposal focuses educationally for the greatest impact. This College of Nursing aspires to incorporate more simulation training for meaningful learning and to augment clinical experiences not consistently available in bedside clinical experiences. Implementing INACSL standards training provides foundational knowledge for faculty to better prepare students. Naturally, basic knowledge of INACSL and debriefing best practices precedes future qualitative or quantitative studies of simulation practice. The Quality and Safety Education for Nurses (QSEN) Institute created a clinical project worksheet to guide this process (QSEN, n.d.). There are nine Certified Nurse Leader (CNL) competencies as defined by the American Association of Colleges of Nursing (AACN) and this project employs the following essentials: organizational and systems leadership (II), quality improvement and safety (III), and translating and integrating scholarship into practice (IV)(AACN, 2013).

Setting

This College of Nursing project proposal involves five geographically separate campuses with simulation coordinators, clinical faculty, and didactic instructors. Resolving the challenge of consistency in simulation standards across campuses with unique histories and cultures requires a college-wide quality improvement educational approach. While this convenience setting appears unique, this quality improvement could apply to any nursing college supplying future professional nurses to the healthcare industry.

Planning

Planning quality improvement through education must enlist the help of persons closest to the problem. This College of Nursing enjoys the contributions of several educated simulation facilitators. The first planning contributor is a doctorly prepared graduate educator and mentor who identified inconsistencies of simulation debriefing and then obtained grant funding to provide a Healthcare Simulation Essentials: Design and Debriefing (HSE) course last summer by the Center for Medical Simulation (CMS, n.d.). Two facilitators from each campus, including myself and appropriate community members, attended the virtual HSE course. All curriculum revision committee members for future nursing simulation courses attended the HSE course. The graduate educator and sponsor for the HSE course is a mentor and collaborator on this quality improvement project. The simulation curriculum committee represents the second contributor group for a potential planning partnership on this project.

Needs assessments obtained for this project consist of direct observations from observed simulation activities, HSE course observations, and simulation committee conversations. Early observational assessments discovered widely disparate consistency of simulation knowledge and application. Future planned needs assessment activities include INACSL standards (2021) knowledge inventories and Debriefing Assessment for Simulation in Healthcare (DASH) debriefer rater evaluations to achieve more objective data (Simon, 2018). Resources needed for planning this project include administrative, financial, and cultural support. Simulation education relies on emotional learning facilitated by debriefing, representing a shift in culture from traditional didactic lectures. Marketing this project to faculty and administration as part of a master business plan helps generate administrative support when course outcomes

link to financial budgets. When aligned with a financial growth plan, simulation education benefits organizational goals versus being perceived as a necessary expense. Comprehensive planning for this project must consider possible challenges and mitigations in advance. Previously held frames or notions of simulation best practices, old habits, and simulation culture pose the most significant challenge to this project. Simulation debriefing strives to unfreeze previously held frames and then conceptualize and refreeze new frames to achieve meaningful learning (Rudolph, 2006). This unfreezing-refreezing strategy promises benefit to this project planning.

Sample

The sample population most affected by this quality improvement project proposal includes simulation coordinators, clinical instructors, and skills lab faculty. College administration, support staff, and didactic faculty deserve inclusion consideration for complete college buy-in. Distribution of this project planning and implementation benefits from a tiered approach to develop project champions. Beginning the project with simulation coordinators then distributing it to clinical instructors and skills lab faculty implements improvement to those working in simulation education from most impacted to least.

Ethical Approaches

Ethical considerations for this project are few due to no experimental participants. Faculty consent for participation in quality improvement makes logical sense and enhances cooperation. While students ultimately benefit from quality improvement, they are not the direct

recipient of this quality improvement. This project proposal is exempt from needing institutional review board approval.

Implementation

Implementation of this quality improvement project to improve NCLEX proficiency due to INACSL standards-based simulation experiences begins with creating an educational packet. The first module of this packet presents to all faculty a pre-learning webinar with a condensed overview of all 11 INACSL standards to explain why these standards matter and how this program can improve (INACSL, 2021). The second and more focused module hosts a one-day Gateway Debriefing Course created by the Center for Medical Simulation at Harvard University for all nursing college faculty (CMS, n.d.). The second module would apply to clinical faculty, including simulation, skills lab, and clinical instructors. Pre and post-testing of clinical faculty utilizing the DASH rater evaluation tool allow for validated objective testing of debriefers' competency (CMS, n.d.). The final module involves clinical simulation faculty participation in the five-day HSE course with pre and post-DASH testing. Interrater reliability of DASH evaluators must be evaluated continuously through the project to establish the trustworthiness of comparative data. Data analysis conducted by constant comparison of debriefing facilitators DASH evaluations allows for campus comparison and individual improvement evaluation. Repeating the process must occur for new faculty to achieve consistency. Ultimately, the analysis of NCLEX scores from all five campuses before and after implementing INACSL standards-based simulation learning supports the project's aim.

Limitations

Limitations for this project begin with acknowledging how NCLEX results are multifactorial after a long educational preparation process. This project proposes that simulations performed within INACSL standards present an opportunity for improvement but recognizes INACSL standardized simulations are not the only causal factor of NCLEX success. Each College of Nursing campus has unique resources, culture, and challenges for simulation learning contributing to inconsistent standards.

Timeline

The timeline for this project proposal begins with training in the Spring and Summer semesters of 2022 with implementation and follow-up evaluation in the Fall Semester 2022. Total time in project is less than one year.

Budget

The estimated budget to complete this project proposal eludes this planner at this time. Gateway debriefing and HSE courses by the Center for Medical Simulation are grant funded at this time. Travel to all five campus locations incurs mileage, lodging and meals costs. Time and expense of DASH rater evaluators requires further investigation. The sustainability of this project must be considered from the beginning, including additional estimated revenue generation due to enlarged student cohorts related to simulation learning augmentation beyond limited clinical site allocations. Maintenance of simulation programs incurs payroll expenses, equipment repairs and updates, and structural building costs. Initial capital purchases of

simulation equipment currently under investigation seek to standardize equipment across all five campuses. Simulation manikins cost between $50,000 and $100,000 requiring procurement procedures and most manikins must be replaced on average every five years.

Summary

In summary, this project proposal to enhance nursing student simulation learning with INACSL standards for improved NCLEX success rates requires planning to enlist resources. Implementation of this project proposal represents an incredible opportunity for campus-to-campus consistency and application of INACSL evidence-based simulation standards for all students. Further growth of consistency and best practices enhance opportunities for full accreditation by the Society for Simulation in Healthcare as an accredited simulation center. Clinical nurse leaders within the simulation program can fulfill simulation center accreditation requirements through mastery of competencies.

REFERENCES CITED

Alexander, M., Durham, C. F., Hooper, J. I., Jeffries, P. R., Goldman, N., Kardong-Edgren, S., Kesten, K. S., Spector, N., Tagliareni, E., Radtke, B., & Tillman, C. (2015). NCSBN simulation guidelines for prelicensure nursing programs. *Journal of Nursing Regulation*, *6*(3), 39-42. DOI: https://doi.org/10.1016/S2155-8256(15)30783-3

American Association of Colleges of Nursing. (2013). Competencies and curricular expectations for clinical nurse leader education and practice. https://www.aacnnursing.org/Portals/42/AcademicNursing/CurriculumGuidelines/CNL-Competencies-October-2013.pdf

Bristol, T. J. (2018). NCLEX-RN® in every laboratory and simulation: Technology can help. *Teaching and Learning in Nursing*, *13*(4), 268-270. DOI: https://doi.org/10.1016/j.teln.2018.06.006

Bureau of Labor Statistics. (2021). Registered nurses: Occupational outlook handbook. https://www.bls.gov/ooh/healthcare/registered-nurses.htm#tab-6

Díaz, D. A., Anderson, M., Hill, P. P., Quelly, S. B., Clark, K., & Lynn, M. (2021). Comparison of clinical options: High-fidelity manikin-based and virtual simulation. *Nurse Educator*, *46*(3), 149-153. DOI: https://doi.org/10.1097/NNE.0000000000000906

Center for Medical Simulation. (n.d.). Gateway debriefing skills workshop. https://harvardmedsim.org/course/gateway-debriefing-skills-workshop/

Center for Medical Simulation. (n.d.). Healthcare simulation essentials: Design and debriefing. https://harvardmedsim.org/course/healthcare-simulation-essentials-design-and-debriefing/

Gore, T. (2017). The relationship between levels of fidelity in simulation, traditional clinical experiences and objectives. *International journal of nursing education scholarship*, *14*(1). DOI: https://doi.org/10.1515/ijnes-2017-0012

Gensimore, M. M., Maduro, R. S., Morgan, M. K., McGee, G. W., & Zimbro, K. S. (2020). The effect of nurse practice environment on retention and quality of care via burnout, work characteristics, and resilience: A moderated mediation model. *JONA: The Journal of Nursing Administration*, *50*(10), 546-553. DOI: https://doi.org/10.1097/NNA.0000000000000932

Hanshaw, S. L., & Dickerson, S. S. (2020). High fidelity simulation evaluation studies in nursing education: A review of the literature. *Nurse Education in Practice*, *46*, 102818. DOI: https://doi.org/10.1016/j.nepr.2020.102818

Hayden, J. K., Smiley, R. A., Alexander, M., Kardong-Edgren, S., & Jeffries, P. R. (2014). The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. *Journal of Nursing Regulation*, *5*(2), S3-S40. DOI: https://doi.org/10.1016/S2155-8256(15)30062-4

Hensel, D., & Billings, D. M. (2020). Strategies to teach the National Council of State Boards of Nursing clinical judgment model. *Nurse educator*, *45*(3), 128-132. DOI: https://doi.org/10.1097/NNE.0000000000000773

International Nursing Association for Clinical Simulation and Learning [INACSL]. (2021). Healthcare simulation standards of best practice. https://www.inacsl.org/healthcare-simulation-standards

Jeffries, P. R. (2005). A framework for designing, implementing, and evaluating: Simulations used as teaching strategies in nursing. *Nursing education perspectives*, *26*(2), 96-103. https://journals.lww.com/neponline/Abstract/2005/03000/A_FRAMEWORK_for_Designing,_Implementing,_and.9.aspx

Jeffries, P. R., Rodgers, B., & Adamson, K. (2015). NLN Jeffries simulation theory: Brief narrative description. *Nursing education perspectives*, *36*(5), 292-293. https://www.proquest.com/scholarly-journals/nln-jeffries-simulation-theory-brief-narrative/docview/1713175752/se-2?accountid=28148

Mazinga, G. (2021). NLN biennial survey of schools of nursing academic year 2019–2020: Executive summary. *Nursing Education Perspectives*, *42* (5), 333-334. doi: 10.1097/01.NEP.0000000000000881.

Montana Board of Nursing. (2019) Public hearing on proposed amendment 6/7/2019. http://rules.mt.gov/gateway/ShowNoticeFile.asp?TID=9153

National Council of State Boards of Nursing. (2019). NCLEX-RN examination: Test plan for the national council licensure examination for registered nurses. https://www.ncsbn.org/2019_RN_TestPlan-English.pdf

National Council of State Boards of Nursing. (2021). NCLEX Pass Rates. https://www.ncsbn.org/Table_of_Pass_Rates_2021_Q3.pdf

Patient Safety Network. (2019). Debriefing for clinical learning. https://psnet.ahrq.gov/primer/debriefing-clinical-learning

Potter, K., Hussey, L., & Ojeda, M. (2021). Clinical hours and program types effects on NCLEX pass rates. *Teaching and Learning in Nursing*, *16*(2), 131-134. DOI: https://doi.org/10.1016/j.teln.2021.01.004

Reibel, M., Cason, M., & Screws, S. (2019). Creating a simulation experience to promote clinical judgment. *Teaching and Learning in Nursing, 14*(4), 298-302. DOI: https://doi.org/10.1016/j.teln.2019.07.001

Roberts, E., Kaak, V., & Rolley, J. (2019). Simulation to replace clinical hours in nursing: A meta-narrative review. *Clinical Simulation in Nursing*, *37*, 5-13. https://doi.org/10.1016/j.ecns.2019.07.003

Rudolph, J. W., Simon, R., Dufresne, R. L., & Raemer, D. B. (2006). There's no such thing as "nonjudgmental" debriefing: a theory and method for debriefing with good judgment. *Simulation in healthcare*, *1*(1), 49-55.

Quality and Safety Education for Nurses. (n.d.) Clinical project worksheet. Quality Improvement. https://drive.google.com/file/d/0B5YGF5c2vqn5SEZJWklaMGVGTWs/view?resourcekey=0-QlvIv0LYtC1j-XTC4KDsjQ

Sarasnick, J. A., Pyo, K. A., & Draper, J. (2017). Using simulation and case studies combined to improve student knowledge: A retrospective study. *Nursing Education Perspectives*, *38*(3), 126-130. DOI: https://doi.org/10.1097/01.NEP.0000000000000139

Sherrill, K. (2020). Clinical judgement and next generation NCLEX® – A positive direction for nursing education. *Teaching and Learning in Nursing*, *15*(1), 82-85. DOI: https://doi.org/10.1016/j.teln.2019.08.009

Simon R, Raemer DB, Rudolph JW. (2018). Debriefing assessment for simulation in healthcare (DASH)© – rater version, long form. Center for Medical Simulation, Boston, Massachusetts. https://harvardmedsim.org/dash-rv-long-scoresheet-en-2018/

Singleterry, L. (2020). Intentional application of nursing theory in simulated practice. *Nursing education perspectives*, *41*(1), 41-42. DOI: https://doi.org/10.1097/01.NEP.0000000000000446

Smiley, R. A. (2019). Survey of simulation use in prelicensure nursing programs: Changes and advancements, 2010–2017. *Journal of Nursing Regulation*, *9*(4), 48-61. https://doi.org/10.1016/S2155-8256(19)30016-X

Zyniewicz, T. L. (2019). *Simulation as replacement for traditional clinical in pre-licensure nursing education: Outcomes of different ratios of replacement time for traditional clinical with simulation* (Doctoral dissertation, The University of Southern Mississippi). https://www.proquest.com/openview/cfa18dd23771c8bf408d47f9e3f22dcb/1?pq-origsite=gscholar&cbl=18750&diss=y