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Simulation-Based Learning in Nursing Management and Leadership Course: Quasi-Experimental Study on Knowledge, Effectiveness, And Satisfaction

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Simulation-Based Learning in Nursing Management and Leadership Course: Quasi-Experimental Study on Knowledge, Effectiveness, And Satisfaction

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Dedication

One should glorify Allah until glorification reaches its ultimate. This accomplishment is an important milestone in my educational and personal life journey, fueled by ambition, perseverance, and determination, and it has arrived at success. No words really express this moment as well as the words of the Almighty, when He says, "And the concluding of their call shall be, 'Praise to Allah, Lord of worlds.'" With family on my side, my parents, this success would not have been possible. To my father and mother, who dedicated all their lives to raising me with love, patience, and sacrifice, I am personally grateful. Their commitment and zeal helped me not to stop in any way in achieving my objectives. And so I am here today because of them, those who heard me say I would like to have a star and made me the offer of the moon instead. This success is only a slight reward for what they are actually entitled to. I also acknowledge my brothers, who have been the sanctuaries of my heart and walking partners along this path. With joint efforts, we have brought about realities out of joint aspirations, even though the journey has had its thorns. This success is also dedicated to them in hopes that this will mark not an end but a beginning full of bigger achievements to follow

Name: Mohammad Fares Abd Alqder

Declaration

This thesis was submitted in partial fulfillment of the requirements for a Master's degree in nursing management. I declare that the content of this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed.....

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First of all, I would like to thank God, my Creator, for the fullness of His grace, which allowed me to complete this work.

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Abstract

Introduction: Simulation-based learning is considered one of the most important teaching and learning methods that simulate real situations in a safe training environment. Simulation-based education also provides opportunities for interaction, cooperation, and teamwork, which then affects students' satisfaction levels, increases their self-confidence, and develops their critical thinking, problem-solving skills, and decision-making.

Purpose: This study aimed to evaluate simulation-based learning within the Management and Leadership course in nursing, focusing on its effect on students' knowledge, satisfaction, and effectiveness.

Methods: A quasi-experimental (pre- and post-training) design was employed among third-year nursing students (n=140). A questionnaire assessing knowledge acquisition, satisfaction, and effectiveness was used to collect data.

Results: The study found significant positive effects on the satisfaction post-simulation experience ($p = 0.001$) with mean scores (3.76 ± 0.66), while there were no significant differences in the knowledge level. It was noticed that the mean score in the pre-simulation experience was higher than the post-simulation experience (13.11 ± 4.53 ; 12.79 ± 4.88 , consequently). In addition, there is a significant effect of the design and environment of the simulation laboratory on students' knowledge and satisfaction. A significant influence was exerted by the demographic factors. The only demographic factor that had an impact was the P value (0.005) for computer skills with simulation effectiveness and satisfaction.

Recommendation: This study suggests that the educational institution should enhance its efforts to improve simulation laboratories and promote simulation-based education as a necessary complement to traditional education. Encouraging simulation laboratory trainers to create realistic scenarios through experiments and experiences, enhancing the pre-briefing stage, and conducting more studies that address this topic in various academic years and courses.

Conclusion: SBL is linked to improving students' satisfaction and effectiveness, skills, and administrative practice. This study is important for educational institutions because SBL promotes education in a safer and more effective environment.

Keywords: Simulation-based learning, Nursing education, Nursing students, Leadership and management in nursing education, knowledge, effectiveness, satisfaction.

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List Of Abbreviations

SBL: Simulation-Based Learning
GPA: Grade Point Average
SET: Simulation Effectiveness Tool
LSS: Learner Satisfaction Scale

SDS: Simulation DesignScale

SPSS: Statistical Package of Social Science
RN: Registered Nurse
ELT: Experiential Learning Theory
CE: Concrete Experience
RO: Reflective Observation
AC: Abstract Conceptualization
AE: Active Experimentation
SA: Simulation Attitude
SCOR: Simulation Culture Organizational Redenies
SBAR: Situation, Background, Assessment, Recommendation
LMCS: Leadership Management Course

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Chapter One

Introduction

1.1 Background

Nursing education refers to the educational aspect of nursing practice, where nurses acquire knowledge and skills to enhance their clinical practice and prepare for teaching roles. (Iwasiw & Goldenberg, 2014) Recently, nursing education has undergone significant transformation and development due to technology and its applications, which have greatly impacted universities and colleges; traditional education based on paper models is now insufficient, as digital technologies have become essential for meeting the requirements of the nursing profession. (Thorne, 2006)

As a result of this transformation, technologies such as artificial intelligence and simulation-based learning (SBL) have improved skills development for nursing students by providing practical experiences, presentations, debriefing sessions, and simulations that enhance both personal and clinical knowledge. (Ma et al., 2024)

Nursing leadership and management in nursing education are essential and urgent to develop future nurses and enable them to manage and lead in healthcare settings. Encourage a positive work climate, better resources, and quality care of patients. (Curtis et al., 2011)

The Nursing Leadership and Management course is significant and central to nursing education because it equips university nursing students with the skills needed to assume leadership responsibilities in their respective workplaces. It equips them with fundamental management skills like decision-making, team coordination, resource management, and problem-solving. It also helps improve the quality of patient care by promoting effective communication, critical thinking, and effective leadership. As a result, nurses become leaders and work to improve and ensure patient safety. (Joseph & Huber, 2021)

The use of simulated nursing education has become a new and increasingly popular method. It contributes to providing an opportunity for nursing students to practice clinical skills through various real-life experiences and improves nursing students' clinical decision-making skills. (Valsaraj et al., 2025)

Simulation-based learning (SBL) is defined as an educational approach based on goal-based role-playing with a simulated patient to replicate clinical nursing care, without posing any risks to the real patient. (Motola et al., 2013) SBL is an important component of nursing education, enabling students to practice clinical care in a risk-free environment. (Lalani, 2023) It also enhances nursing skills in all academic years and enables the student to apply their

theoretical knowledge and critical thinking and strengthen their basic decision-making skills while also engaging their emotions. (Kim et al., 2016)

1.2: Problem statement:

Transforming and developing nursing education is a challenging enterprise, involving the problems of working in the digital environment, gaps in the knowledge of competencies of nursing teachers, and the lack of opportunities to incorporate technology into school curricula. However, nursing education faces some challenges, the most prominent of which are lack of resources and the need to balance technology with real-world experience.(da Silva Tiago & Mitchell, 2024)

In Palestine, many universities offer nursing programs; however, the limited number of hospitals and health centers restricts the training opportunities for all nursing students in these institutions. Nurses are the daily managers who deliver quality healthcare in hospitals. Their performance greatly affects the quality of nursing care provided in hospitals and of care provided to patients by enhancing nurses' efforts to improve the quality and safety of healthcare services.(Alrobai, 2020)

1.3: Study Justification (significance of the study)

Nursing education plays a critical role in preparing future nurses to assume leadership and management responsibilities in increasingly complex healthcare environments. Traditional didactic teaching methods, while effective in conveying theoretical knowledge, often fall short in bridging the gap between theory and practice, particularly in courses related to management and leadership. (Alrobai, 2020)

Simulation-based learning has emerged as an innovative educational strategy that provides learners with safe, controlled, and realistic environments in which to apply theoretical concepts, practice decision-making, and develop leadership competencies. However, evidence regarding its effectiveness in nursing management and leadership courses remains limited, particularly in low-resource or developing country contexts. Therefore, it is essential to investigate whether integrating simulation-based learning into nursing management and leadership courses enhances undergraduate nursing students' knowledge, satisfaction, and effectiveness.

Simulation-based learning has the potential to improve nursing education by enhancing student outcomes and providing more professional educational resources for educators. (Hamilton, 2024). The challenges in Palestine are associated with inadequate development of clinical practice, constrained resources, very high student numbers, an absence of trainers, an absence of suitable training facilities, and the necessity to have better management training in the operations of nursing education. (Jallad, Natsheh, et al., 2024). However, there are gaps in understanding and meeting the training needs of nursing students to be effective in managerial roles, as well as in how teachers can integrate this technology into existing educational infrastructure (Costello et al., 2014). In addition, the absence of previous research indicates a lack of knowledge and understanding of its added value or otherwise in terms of communicating educational messages and supporting experiences.

Simulation plays an important and positive role in nursing education, as it bridges the gap between application and theory and works to enhance their self-confidence, decision-making, and communication skills to enhance efficiency and safety. (McCaughey & Traynor, 2010)

Simulation-based education contributes to improving the learning experience of nursing students by providing a dedicated learning environment that promotes the safe acquisition of

basic management skills.(Dicheva et al., 2023). This approach helps prepare students to face real professional challenges, especially in managerial roles, and contributes to overcoming traditional obstacles in education, such as a lack of training sites and teaching materials, thereby promoting academic and practical education in Palestine. (Khlaif & Farid, 2018)

Simulations also make the educators more empowered as they monitor the progress of learners and adapt education to their needs. (Xu & Engineering, 2024) Such a technology also helps to hone the leadership and management abilities of learners so that they can develop the ability to make proper decisions and make wise use of resources in sophisticated health care settings. The study aims to provide evidence-based recommendations to improve management training and improve the quality of health education under the complexity of health systems and increase the need for leadership roles in nursing, raising the standard of healthcare education in the area by examining the use of simulation-based learning in Palestinian nursing education.

1.4 Aim of the study:

To evaluate simulation-based learning in nursing management and leadership courses on undergraduate nursing knowledge, satisfaction, and effectiveness

1.5 Objectives of the study:

1. Identify the effect of students' sociodemographic factors on utilizing SBL in the nursing management course.
2. Examine how nursing simulation affects students' effectiveness, satisfaction, and level of knowledge.
3. Evaluate the effect of simulation design on students' knowledge and satisfaction.

1.6 Research question:

- a. Is there a relationship between sociodemographic factors and students' satisfaction, effectiveness, knowledge level, and simulation design?
- b. What is the effect of simulation-based learning on nursing students' satisfaction, effectiveness, and level of knowledge?
- c. Does the design of simulation-based learning affect students' knowledge and satisfaction?

1.7 Study hypothesis:

H0: There are no statistically significant differences between sociodemographic factors and students' satisfaction, effectiveness, knowledge level, and simulation design.

H0: There is no statistically significant effect of simulation-based learning on nursing students' satisfaction, effectiveness, and level of knowledge.

H0: The design of simulation-based learning has no statistically significant effect on students' knowledge and satisfaction.

1.8: Definition of terms:

• Simulation

Simulation is a model that simulates how a present or planned system functions and provides evidence for decision-making by allowing the testing of different scenarios or process modifications. The simulation can be used in conjunction with virtual reality technologies to provide a more captivating experience.(Jeffries, 2020)

- **Simulation-Based Learning (SBL)**

It is an experiential method of learning through simulated events that mimic the conditions of the real world so that the learners can apply the art of skills and decision-making under a safe and controlled situation. The approach is specifically effective when used in fields of service that need applied knowledge and thinking skills (e.g., healthcare professions, aviation, and social work). (Nestel, 2015)

- **Nursing education:**

Describes science and art in the field of nursing that involves theory and practice because nurses learn the knowledge and skills related to clinical practice and to teaching as well. (Iwasiw & Goldenberg, 2014)

- **Nursing management:**

It is defined as a process of planning, organizing, activating, and controlling the managerial function of nursing to determine and accomplish nursing care's objectives. (Patarru et al., 2019)

- **Nursing students**

A nursing student is an individual enrolled in a formal program of learning that is necessary to become a registered nurse (RN) or licensed practical nurse (LPN). They are in the process of learning and intensively acquiring the skills and knowledge required to exercise nursing practice, usually under the supervision of a clinical environment. (Black, 2022)

- **Knowledge**

It includes the perception and capacity to recall, apply, and comprehend knowledge acquired through learning, experience, or study. It consists of both theoretical concepts (including facts, principles, and frameworks) and practical understanding that helps people to make better decisions and act adequately in particular circumstances and contexts. (Bolisani & Bratianu, 2017)

- **Satisfaction:**

Satisfaction is normally the attainment of the needs, desires, or expectations of an individual. It is the enjoyment of achieving the unexpected. (Zhu, 2013)

- **Learning Effectiveness**

Learning effectiveness is an active process that focuses on students learning and lets them participate in a high-quality learning opportunity; it is one of the crucial factors for advancing knowledge, innovation, modifications of educators' techniques, and engagement. (Umar & Ko, 2022)

1.9: Summary:

This chapter handled the concepts of simulation-based learning in nursing education, with a focus on the leadership and management course. It also discussed the significance of SBL as an innovative teaching strategy in nursing education, as well as its role in the nursing management and leadership courses. In addition, it explained the study's primary variables, which included knowledge, satisfaction, and learning effectiveness. It determined the study's goal, which was to assess the impact of simulation-based learning (SBL) in the nursing management and leadership course on nursing students' knowledge, satisfaction, and learning effectiveness. Furthermore, it addressed the study's problem and the most important justification for utilizing SBL in nursing management and leadership courses, which is defined as SBL providing real, risk-free environments to bridge the gap between theory and practice, allowing nursing students to learn core competencies in leadership and management. Furthermore, this chapter addressed the challenges that nursing education faces in Palestine,

such as a lack of clinical experience opportunities for nursing students, a scarcity of resources, and the difficulty of incorporating modern technologies into the curriculum.

Chapter Two

Literature Review

2.1 Introduction:

This chapter offers a general view and a conceptual structure of what integrated simulations are and what prior literature has stated regarding the importance of simulation-based learning in nursing administration education. Additionally, there is a section that discusses Kolb's experiential learning theory in relation to simulation. It analyzes the possible advantages of simulations to ensure optimal achievement of students' learning outcomes. The proposed literature review aims to investigate how simulations can assist in developing basic management and leadership competencies in nursing students, how they influence the teaching methods used by educators, and how they gradually contribute to the advancement of healthcare education.

2.2: Search strategy:

A search strategy identifies a systematic association of keywords applied in the seeking of a database, which might be Google Scholar, PubMed, or EBSCO controlled vocabulary. The strategy combines the key concepts of the study search questions to retrieve accurate results.

Key Terms and Concepts:

- Simulation-based learning
- Nursing education
- Nursing students
- Leadership and management in nursing education
- knowledge
- Satisfaction
-
- Learning effectiveness.
-

Simulation based learning on Kolb's experiential learning theory

Kolb's experiential learning theory (ELT) (1984) is an educational theory based on the idea that humans learn best through experience. Kolb's theory consists of four stages: Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE) (Kolb, 1984). One of the advantages of ELT for the educator conducting the simulation is that it provides a safe learning environment, which does not pose

a danger to real patients, enhances the student's skills and confidence, facilitates practice, and guides the student in initiating a discussion. (Kolb, 2014))

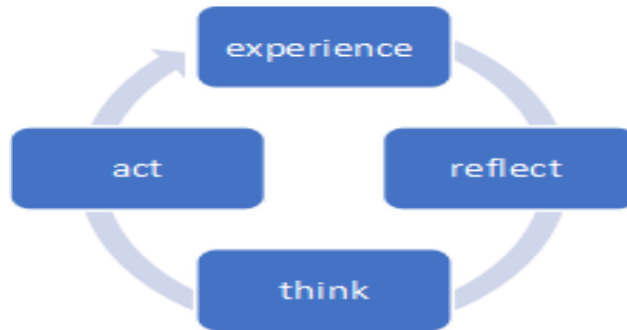


Figure 1.1. Kolb's experiential learning theory (ELT)

2.3: Previous studies

2.3.1: Simulation-Based Learning in Nursing Education:

➤ A study conducted in Cyprus, by Jallad (2019), that aimed at the future of nursing education: changing values, educational paradigm, and learner-educator profiles and roles, and showed nursing education and its environment face accelerating challenges that require radical changes due to the explosion of knowledge, technological development, and globalization. The study concluded that the basic step to preparing qualified nurses, technology must be integrated, and the academic structure must be reformed. (Isik et al., 2019)

➤ The role of simulation-based learning in nursing education is assessed in a systematic review study carried out in 2016, where the effect of the use of different simulation methods, including AI-powered ones, is considered. The review findings discuss the results regarding student performance and confidence levels; the findings were that simulation-based pedagogy is an efficient method of learning because, when used in nursing, it develops the required skill levels of students and confidence as well, and AI tools can support the development of personalized experiences in learning modes. (Cant & Cooper, 2010)

➤ A study was conducted in Brazil by Sebold, Böell, et al (2017), which examined the role of clinical simulation in enhancing relational competence and practical skills among 32 undergraduate nursing students enrolled in a nursing fundamentals course. It indicated that clinical simulation effectively boosted students' teamwork abilities and interpersonal skills, while also refining their proficiency in nursing tasks. Also, simulation is a powerful educational approach in nursing. (Sebold et al., 2017)

➤ A study conducted in Finland by Heinonen, Kääriäinen, Juntunen, & Mikkonen (2019) which examined nursing students' perspectives on the role of nurse teacher mentoring in clinical practice and evaluated the potential of digital technology as a complementary support tool among 15 students. The study findings emphasized the importance of nurse teacher

mentoring for effective learning assessment, integration of theory into practice, clarification of student responsibilities, and emotional support. Furthermore, the essential role of nurse teacher mentoring in clinical success, with digital tools serving to enrich, rather than replace, the mentoring experience.(Heinonen et al., 2019)

2.3.2: Simulation-based learning on nursing students' satisfaction

➤A study conducted in Saudi Arabia by Al Khasawneh et al. (2021), involved 370 undergraduate nursing students and aimed to assess the efficacy of simulation using the NLN/Jeffries Nursing Education Simulation Framework on satisfaction and self-confidence of undergraduate nursing students in a Middle-Eastern country and showed the use of simulation has effectively contributed to improving nurses' management skills, especially in the areas of leadership, decision-making, and communication. Simulation has enhanced their willingness to apply these skills in a real-life work environment. (Al Khasawneh et al., 2021)

➤A study conducted in the USA by Zapko, Ferranto, and Blasiman (2018) included 199 students and aimed to evaluating best educational practices, student satisfaction, and self-confidence in simulation and showed. The results showed a strong trend and support for adopting simulation as an effective educational tool. Students felt satisfied and confident while learning through simulation, and there were positive reactions from the students. It showed noticeable differences in general satisfaction according to academic years. . (Zapko et al., 2018)

➤ A study conducted in Palestine by Jallad(2025) included 112 students among first-year nurse students and aimed Effectiveness of Simulation-Based Education on Educational Practices of Communication Skills, Satisfaction, and Self-Confidence Among Undergraduate Nursing students and showed significant satisfaction with SBL experiences and a relationship between SBL and the level of self-confidence and critical thinking among nursing students. It also provides a risk-free environment.(Jallad, 2025)

2.3.3: Simulation-based learning on nursing students' knowledge

- A randomized controlled design study conducted in Jordan by Tawalbeh (2020) investigated the effects of simulation on nursing students' understanding and self-assurance in critical care abilities for patients with cardiac, respiratory, and neurological disorders in Jordan, involving 38 students in the experimental group who participated in 9 simulation scenarios, alongside theoretical lectures and clinical training. The control group, in contrast, solely attended the lectures and clinical training. The results indicated that the experimental group demonstrated greater knowledge and confidence than the control group and determined that while theoretical and clinical training are crucial, simulation offers a greater enhancement in critical care abilities and ought to be viewed as a vital educational resource, particularly considering the COVID-19 pandemic. (Tawalbeh, 2020)
- In a study conducted in Brazil by Campanati et al. (2021), which evaluated the knowledge improvement in nursing students after incorporating clinical simulation into a Nursing Fundamentals course. The 60 participants were split into two groups: one experienced only traditional teaching, while the other combined traditional methods with simulation-based learning. Results from pre-test and post-test evaluations indicated that, although both groups showed cognitive progress, the group using simulation showed higher knowledge gains ($p = 0.016$). This suggests that simulation-based teaching is an effective tool for boosting both technical and cognitive skills in nursing education, underscoring its value in foundational nursing training. (Campanati et al., 2021)

- A study was conducted in the USA by Kristen D. Zulkosky (2012) among fourth-semester associate of science in nursing students who participated in debriefing sessions after watching prerecorded high-fidelity simulations aimed at using simulation in the classroom. It showed higher scores of knowledge acquisition, satisfaction, and self-confidence after exposure to SBL (Zulkosky, 2012)
- A study conducted in Palestine by Jawabreh, Ayed, & Batran (2019) to investigate the impact of high-fidelity simulation on the knowledge among 102 nursing students in eight simulation scenarios in an adult nursing course, following a pretest-posttest design. The results revealed a significant improvement in students' knowledge after the simulation, indicating that simulation-based teaching effectively boosts their understanding of adult nursing topics. (Jawabreh et al., 2019)

2.3.4: Simulation based learning on nursing students learning effectiveness

- A study conducted in Norway by Hustad, Johannesen, Fossum, & Hovland (2019) involved 32 undergraduate nursing students from the second and third years. It aimed to study nursing students' transfer of learning outcomes from simulation-based training to clinical practice and showed their sense of self-confidence increased after simulation training, which made them enter clinical training with greater confidence and develop their clinical and decision-making skills. In addition, they became more aware of the importance of communication and teamwork. Furthermore, they effectively transferred what they learned in simulation to practical training in the hospital. (Hustad et al., 2019)
- A study conducted in Turkey by Uysal (2016) involved 605 second-year nursing students over 7 years, and aimed to Improvement of nursing students' learning outcomes through scenario-based skills training and showed After training, common mistakes among students, such as neglecting sterilization principles, gradually decreased after implementing scenario-based training, with the exception of 2009-2010, which witnessed a decline in performance due to students' lack of sufficient preparation. After training, students' grades in practical exams increased. Students felt highly satisfied and effective in understanding and linking concepts with theoretical skills and practical application. (Uysal, 2016)
- A study conducted in Poland by Magdalena Brodowicz-Król et al. (2025) among 306 nursing students, which aimed influence of socio-demographic characteristics on the evaluation of effectiveness of medical simulation and showed results indicated that the study found a general relationship between the influence of demographic factors (Brodowicz-Król et al.)

2.3.5: Simulation design environment

Within a simulation lab environment, design pertains to the structural, cultural, and procedural components that affect the efficiency of simulation-related education and training. These elements influence the effectiveness of the environment in fostering learning, skill development, and practical training for students and healthcare practitioners. These elements include the structure and resources of the lab, the expertise and support of the instructors, the technology and IT support, and the accessibility of the facility. (Riley, 2008)

- A study conducted in the USA by Robinson and Dearmon (2013) involved a nursing education program that aimed at the effective use of instructional design and simulated learning environments to enhance knowledge transfer in undergraduate nursing students.

Nursing education faces many obstacles, including a lack of trained personnel and available training facilities, which negatively impact students' readiness. An effective solution is to integrate simulation into nursing education in a safe learning environment. (Robinson & Dearmon, 2013)

- A study by Lee, Clarke, & Carson (2018) investigated nursing students' learning dynamics and influencing factors in clinical contexts, using constructivist grounded theory to explore their experiences throughout clinical education. By conducting interviews with fourth-year nursing students and registered nurses, the research created a dynamic learning framework that depicts the various factors impacting students' clinical training. The study revealed six essential factors that influence nursing students' learning: interpersonal, socio-cultural, instructional, environmental, emotional, and physical elements. Utilizing this model may improve teaching methods, which could lead to better clinical learning results for nursing students. (Lee et al., 2018)
- A study conducted in the Philippines by Rebueno, Vitug, and Macindo (2024) involved 245 nurse educators and aimed to examine the elements affecting Filipino clinical nurse educators' willingness to implement simulation in nursing education, concentrating on simulation culture organizational readiness (SCOR), simulation attitude (SA), and facilitator readiness (FR). The structural equation model indicated that SCOR, SA, and FR collectively accounted for 62.6% of the intention to adopt simulation, with SCOR exerting an indirect influence on adoption intention through SA and FR, whereas SA and FR demonstrated direct effects. These findings indicate that both organizational culture and educator preparedness are vital for effective simulation integration, highlighting the significance of policies and support systems that strengthen these elements to promote simulation-based education. (Rebueno et al., 2024)
- A study conducted in Korea by Cho & Kim (2023) explored the connections among nursing students' satisfaction, self-confidence in learning (SCLS), simulation design (SDS), and educational practices in simulation (EPSS) to determine the elements affecting SCLS in simulation learning among 71 fourth-year nursing students who enrolled in a medical-surgical nursing simulation course, emphasizing that improved simulation design and educational methods increase students' learning satisfaction and confidence. The results indicate that enhancing these elements is crucial for bettering nursing students' experiences in simulation learning. (Cho & Kim, 2023)
- A study conducted in Korea by Bae & Shin (2024) investigated the obstacles to learning that nursing students encounter at various phases of simulation training, pinpointing critical areas for enhancement. In the prebriefing phase, it was necessary to enhance the link between theoretical concepts and practical usage, focusing on advanced communication abilities and equipping students to perceive simulators as actual patients. The scenario phase uncovered difficulties in clinical reasoning, exacerbated by psychological stress, emphasizing the necessity for stress management and communication training to enhance performance in high-pressure situations. The debriefing phase emphasized the value of reflective thought and the necessity for organized feedback to improve learning. In general, the research advocates for specific strategies to address these obstacles, boost student readiness for clinical practice, and improve patient care and safety. (Bae & Shin, 2024)

2.4: Summary:

This chapter summarized the previous literature review that examined the effect of SBL on nursing students' knowledge, satisfaction, and effectiveness across various fields of nursing

education at local, national, and international levels. It also highlighted the importance of SBL in clinical practice and nursing by helping students strengthen their knowledge and enhance critical thinking, teamwork, decision-making, and confidence. Whether using high-resolution simulations or scenario-based training. The environment, designs, and structure of simulation play a positive and effective role in education and provide for the integration of simulation into nursing curricula.

2.5: Conceptual framework:

A conceptual framework shows how the variables are expected to be related. The correlation between pairs of variables can be positive or negative. The conceptual framework focuses on describing the concepts or variables and how the variables relate. The conceptual framework also explains the expected relationship between pairs of variables. The description of the concept or variable clarifies how the variables relate to each other. It establishes the objective of the research process and looks forward to how they are all going to complement each other and reach sound conclusions. The theoretical framework highlighted the significance of simulation-based education in nursing management and leadership for enhancing nursing students' knowledge, satisfaction, and learning effectiveness.

The independent variable.

Simulation-Based Learning (SBL) is an educational approach that uses realistic scenarios, environments, or technologies to mimic real-life situations to help learners develop knowledge, skills, and attitudes in a safe and controlled setting. It contains simulation design, fidelity, objectives, realism, structured learning experiences, feedback, decision-making scenarios, and teamwork activities.

The dependent variable.

Emphasis is on quantitative enhancement in simulation practice, clinical management, critical thinking, and problem solving. The outcomes of these efforts include knowledge tests, satisfaction surveys, and tools for measuring simulation effectiveness. The hypothesis is that simulations can affect nursing students' knowledge, satisfaction, and effectiveness in learning

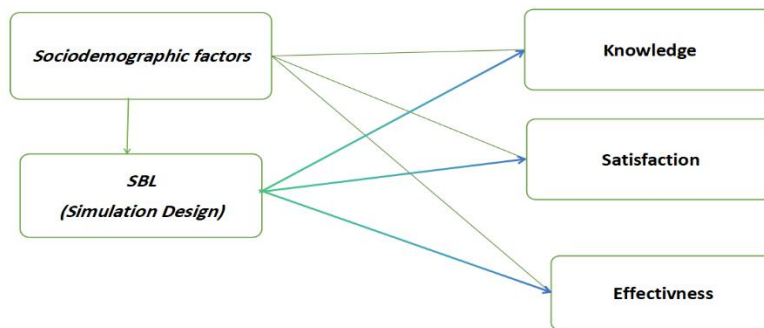


Figure 2.1. Framework of study

2.6: Operational definition:

In research, operational definition refers to the precise way in which a variable is measured or manipulated in a study. It translates abstract concepts into measurable terms, allowing researchers to clearly define how they will assess or quantify variables within the context of their specific research. This ensures that the variables can be consistently observed, measured, and compared, making the research process more transparent and reproducible. (Slife, et al. 2016)

The operational definitions of crucial variables can be outlined as follows:

1. Simulation design

This refers to the objectives, resources, institutional support, problem-solving strategies, realism, and feedback mechanisms necessary for effectively implementing simulation training, integrating SBL into nursing education, and ensuring that the organization is ready to adapt to SBL learning approaches. These factors can be assessed through the simulation design scale.

2. Knowledge

Knowledge indicates nursing students' understanding of the concepts of the theoretical and practical nursing management and leadership course. In this study, the researcher assessed students' knowledge by using multiple-choice questions that focused on theoretical concepts in various nursing management scenarios.

3. Satisfaction

Student satisfaction is defined in practice as the measurable level of satisfaction or positive perception that students have regarding their educational experiences, services, and institutional environment. Methods of measuring it include surveys, questionnaires, or interviews that evaluate factors such as the quality of teaching, interactions between students and faculty, and the availability of resources. In this study, the students' satisfaction level was measured using the Learner Satisfaction Scale, which is based on a Likert scale (e.g., 1 = strongly disagree to 5 = strongly agree).

4. Learning effectiveness

Effectiveness is an ongoing learning process that examines the improvement of students' skills and discussion and enhances their critical thinking and decision-making. Also, it is an active process that improves students' confidence in their learning and encourages their communication skills. In this study, the researcher used simulation effectiveness tools to examine the students' learning effectiveness during simulation experiences based on disagree (0), somewhat agree (1), and strongly agree (2).

2.7: Conceptual definition:

Conceptual research is defined as a methodology wherein research is conducted by observing and analyzing already present information on a given topic. Conceptual research doesn't involve conducting any practical experiments. It is related to abstract concepts or ideas. Philosophers have long used conceptual research to develop new theories or interpret existing theories in a different light.(Shikalepo, 2020)

Simulation design:

The components of the simulation design are structural, cultural, and pertaining to resources in the educational institutes that impact the inclusion and quality of SBL. This will include the extent to which the organization is ready to adopt new technology, the availability of financial and technical resources, the support of leadership, and the commitment of the institution to the

advancement of new instructional delivery methods. These aspects are critical to determining the effective implementation and maintenance of SBL in nursing education programs

Student Satisfaction

Student satisfaction represents the degree to which nursing students feel satisfied with their educational experiences, in simulation-based learning, enjoying simulation, and giving positive feedback and perception to the learning process

Chapter Three

Methodology

3.1 Introduction

This chapter describes the study design, study population, the study instrument and its validity and reliability, data collection process, tools, and the data analysis used to achieve the study's primary purpose and answer the study questions.

3.2 Research design

A quasi-experimental research design (pre-posttest, one group) was applied during this research; it is broadly applicable when either randomization is not ethically or practically possible or when there is no readily available control group. Researchers can use this design to assess an intervention's effect on a set of results using pre- and post-results without random assignment. This design combines two aspects of experimental research: the ability to manipulate variables and the observational study, which provides a convenient solution for assessing cause-and-effect relationships in real-world situations. This type of design can be widely employed when assessing simulation-based learning (SBL) studies every time it is desired to assess the initial learning effectiveness, knowledge, and satisfaction within a simulated environment; to possibly implement an intervention program, such as training; and to evaluate the acquired changes.

3.3 Study population:

The study population comprised 210 nursing students enrolled in the nursing leadership and management course during their third year, specifically in the spring semester of the 2024-2025 academic year at Al-Quds University, Palestine.

3.4: Study setting

The study was conducted at the simulation nursing center in the Faculty of Health at Al-Quds University.

3.5 Sample size and selection method

210 of the nursing students who registered for the simulation training in nursing management were divided into twelve groups, each with 15–20 students. The sample size was calculated via G*power. We used an alpha level of 0.05, a medium effect size, and a margin of error of 5% with a 95% confidence interval (Faul et al., 2009). This calculation yielded a required sample size of 137 undergraduate nursing students. In this study, while 45 of the students took simulation training, the researcher was still in the preparation and design stage of the study. While 165 students participated in the study, 25 of them were excluded by the researcher because they did

not complete their pre-post experience responses. Thus, the completed sample consisted of 140 students.

3.6: Eligibility criteria

3.6.1: Inclusion criteria

It is features that subjects must possess to be able to be included in a research study. In a research study. (Patino & Ferreira, 2018)

- Students must be enrolled in the nursing management and leadership course in the Nursing department.
- Active participants in a simulation-based educational program during their studies.
- willing to take part in this study.

3.6.2: Exclusion criteria

It is used to indicate things that make the participation of an individual in a research study invalid. (Patino & Ferreira, 2018)

- Students not enrolled in the nursing management and leadership course in the Nursing department.
- Students not participating in simulation-based studies.
- Students unwilling to participate in the study
- students who trained in the simulation before the study's implementation.
- Students did not meet the data collection criteria (i.e., they participated in data collection before training without participating after training or vice versa)

3.7: Instruments (Questionnaire)

Part One: Socio-demographic information

The researcher designed these tools depending on previous literature (Jallad et al., 2024). It included socio-demographic nursing students, such as gender, age, economic status, academic achievement, and place of residence. Additionally, it inquired about prior exposure to SBE in previous courses, computer skills, as well as participation in leadership and management training courses within a hospital setting.

Part Two: Divide into three sections, and each section contains a set of questions

Section I: Simulation Effectiveness Tool

This Tool was developed by Cordi et al. (2012). The instrument consists of 13 items, each on a scale of disagree (0), somewhat agree (1), and strongly agree (2). Higher scores indicate higher levels of simulation effectiveness. Cronbach's alpha was 0.93 when the scale was developed. (Cordi et al., 2012). The Cronbach's alpha for this study was 0.88.

Section II: Learner Satisfaction Scale

This scale was developed by Lim et al., (2022). LSQ is a 14-item instrument that can be readily deployed on a broad scale to evaluate learner satisfaction toward usability, and easy of using SBL content, and learning progress (Lim et al., 2022). Learner Satisfaction based on five-point Likert scale: 1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree), with Cronbach's alpha .97-.99.(Lim et al., 2022). This study's Cronbach's alpha was 0.94

Section III: Simulation Design Scale

This scale was developed by Jeffries & Rizzolo. (2005). The Simulation Design Scale (student version), a 20-item instrument using a five-point scale, was designed to evaluate the five design

features of the instructor-developed simulations used in the NLN/Laerdal study. The five design features include: 1) objectives/information; 2) support; 3) problem solving; 4) feedback; 5) fidelity. 5-point Likert scale: (1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree). The instrument's reliability was tested using Cronbach's alpha, which was found to be 0.92 for the presence of features and 0.96 for the importance of features (Jeffries et al., 2005). This study's Cronbach's alpha was 0.96

Part Three: Knowledge Test

The researcher developed this questionnaire related to the Leadership and Management Nursing Course Book (8th Edition). It consists of 20 multiple-choice questions related to leadership style and power scenarios.(Yoder-Wise & Sportsman, 2022)

Validity of instruments

All of the study instruments were validated by three experts consisting of the coordinator of the nursing management and leadership practice course, the coordinator of the leadership theory and simulation training course, and the simulation nursing management instructor. The validity involved content that checks whether the instruments covered all relevant aspects of the theoretical concept of the nursing leadership style and power as topics in the nursing management course. Also, construct validity determines if the instrument truly measures the theoretical construct. As well as the internal validity among experts that determined if the instruments are consistent across their items and measure the concept without bias. There was editing that took place in the simulation effectiveness tool and multiple choice questions that measure knowledge level that consisted of the management course and the aim of the study.

Reliability

The internal consistency of the study variables was assessed using Cronbach's alpha. All measures have acceptable to excellent reliability. **Table 1.** The internal consistency of the study variables was assessed using Cronbach's alpha. All measures have acceptable to excellent reliability. The reliability statistics are shown in Table 1.

Table 1.3 Reliability coefficients of the study’s main and sub-scales.

ITEMS	CRONBACH ALPHA (PRE)	CRONBACH ALPHA (POST)	N OF ITEMS
SET	0.888	0.896	13
LSS	0.947	0.905	14
SDS_TOTAL	0.962	0.965	20
OBJECTIVES	0.883	0.891	5
SUPPORT	0.848	0.873	4
PROBLEM_SOLVING	0.883	0.901	5
FEEDBACK	0.896	0.878	4
FIDELITY	0.883	0.887	2

3.8: Data collection procedure

- After obtaining the IRB(RESC/2025-47) ethical approval from the Ethics Committee of Al-Quds University and after the approval of the direct official in charge of the Simulation Center, the leadership and management simulation instructors were informed of the importance of attending the simulation session with them and distributing the survey among students during their training. Informed consent was taken from students, and they were told the objectives and significance of this study. Then, the questionnaire was given to them before beginning the simulation session, which involved three stages (pre-briefing, simulation, and debriefing). At the end of the session, the same survey was distributed. Collecting data from each specific group was done on the same day, which consisted of 15-20 students. In this study, students practiced SBL through role play to gain knowledge, act out real leadership and management scenarios, and subsequently analyze and debrief important leadership and management concepts in nursing by performing simulation stages.
- **Pre-briefing phase:** Pre-briefing is a practice that entails preparation and briefing. Pre-briefing makes sure that simulation learners are ready to engage in learning and are also aware of the rules and expectations of the simulation-based experience they are about to enter. (El Hussein et al., 2021) This stage typically involves 4 to 6 students.

- **Simulation phase:**

In this study, standard patient simulation was used to enhance students’ collaboration and awareness of educational practice simulation. Based on the participants’ level, scenarios were designed and prepared in the simulation experience. Then, they were distributed in different roles based on a scenario using the Situation, Background, Assessment, recommendation (SBAR) technique through a role-play (primary nurse, secondary nurse, physician, member of the health-care team, and member of the family) (Dalwood et al., 2020)

- **Debriefing phase:**

The instructor/facilitator gathers, analyzes, and summarizes the discussion during this phase. Regarding the SBL group, the debriefing sessions took the form of video-assisted debriefings after the post-test and the retention test. During such a process, students were allowed to watch videos of the performances made by them and other groups. The discussion was organized with reference to the various parts of the video, and the instructor encouraged the students to ponder diverse issues, including communication skills, teamwork, and leadership skills.

3.9 Data analysis (Statistical Analysis)

Data were analyzed using IBM SPSS Statistics (Version 27). Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to describe the study variables. Internal consistency of the study instruments was assessed using Cronbach's alpha coefficients. Values above 0.70 are considered satisfactory measures of reliability. The Kolmogorov–Smirnov and Shapiro–Wilk tests were used to confirm the normality assumptions of the outcome variables. All the tested variables showed statistically significant deviations from a normal distribution ($p < .05$). The non-parametric Wilcoxon signed-rank test, an alternative to the paired samples t-test, was, therefore, used.

Effectiveness of the intervention was assessed based on pre-, post-, and post-changes in self-reported Simulation Effectiveness, Learner Satisfaction, Simulation Design scale total score, and its subscales (objectives, support, problem-solving, feedback, and fidelity), as well as knowledge scores. Multiple linear regression analyses were conducted to predict the post values of the simulation effectiveness scale (SET_POST), learner satisfaction scale (LSS_POST), and knowledge scores (Knowledge_Post) from the independent variables: gender, academic performance (GPA), computer skills, previous simulation-based education (SBE), and completion of a leadership and management course (LMCS). For the regression predicting Knowledge_Post, baseline knowledge scores (Knowledge_Pre) were also entered as a co-variate to control for prior knowledge. A significance level of $\alpha = 0.05$ was used for all inferential analyses.

3. 10 Ethical Considerations

Approval has been obtained from the Research Ethics Subcommittee of Faculty Health Professions (RESC/2025-47). This study took into account all research ethical requirements; privacy and confidentiality were fully protected, as no personal identifiers or information, such as participants' names or identities, were collected or retained. The Committee of Nursing Graduate Studies at the Faculty of Health Professions/Al-Quds University approved the proposal.

This chapter provides a detailed discussion of the study methodology, including clarification of the study sample, preparation of the study, and identification of participants based on the study objective. Also, discusses the study and data collection process, as well as ethical considerations for research to protect participants' privacy and confidentiality.

Chapter four

Result and discussion

Introduction:

4.1: Sociodemographic Characteristics:

Table 2 presents the demographic characteristics of the sample, which included 140 participants, the majority of whom (77.1%) were females. Most participants (86.4%) were of a moderate economic status, with only 7.1% of a low economic status and 6.4% of a high economic status. Regarding academic performance, 68.6% had an average score between 80 and 100, while 31.4% scored below 80. Most participants were from urban areas (65.7%), while 34.3% lived in rural areas. Concerning computer skills, 55.0% rated their skills as good, 35.0% as basic, and 10.0% as advanced. The majority (81.4%) reported having previous simulation training, while only 18.6% did not. About 77.1% completed a previous leadership and management course, while a minority, 22.9%, did not.

Table 1.4 : The demographic variables, N = 140

Variables	Frequency (N)	Percent (%)
Gender		
Male	32	22.9
Female	108	77.1
Economic status		
Low	10	7.1
Moderate	121	86.4
High	9	6.4
GPA		
< 80	44	31.4
80 – 100	96	68.6
Residence		
City	92	65.7
Village	48	34.3
Computer skills		
Basic	49	35.0
Good	77	55.0
Advanced	14	10.0
Previous Simulation training		
Yes	114	81.4
No	26	18.6
Previous leadership & Management course		
Yes	108	77.1
No	32	22.9
Total	140	100.0

Table 2 shows the means and standard deviations for the pre- and post-knowledge. After the intervention, participants reported the knowledge score changed slightly from 13.11 (SD = 4.53) to 12.79 (SD = 4.88).

Table 2.4: Means and SDs for the knowledge pre- and post-assessment.

	Mean	Std. Dev.
Knowledge -Pré	13.11	4.53
Knowledge -Post	12.79	4.88

Table 3.4 shows the means and standard deviations for the pre- and post-simulation effectiveness. After the intervention, participants reported improvements in SET from a mean of 2.18 (SD = 0.38) at pre-test to 2.42 (SD = 0.37) at post-test.

Table 3.4.: Means and SDs for the SET pre- and post-assessment

	Mean	Std. Dev.
SET_PRE	2.18	0.38
SET_POST	2.42	0.37

Table 4 shows the means and standard deviations for the pre- and post learner satisfaction. The learner satisfaction (LSS) increased from 3.36 (SD = 0.73) to 3.76 (SD = 0.66)

Table 4.4: Means and SDs for the LSS pre- and post-assessment. 114 participants have previous SBL experience

	Mean	Std. Dev.
LSS_PRE	3.36	0.73
LSS_POST	3.76	0.66

Table 5 shows the means and standard deviations for the pre- and post-simulation design. Simulation Design Scale (SDS) score also improved from 3.58 (SD = 0.72) to 3.79 (SD = 0.69). Each of the five SDS subscales—objectives, support, problem-solving, feedback, and fidelity improved after the training.

Table 5.4 Means and SDs for the SDS pre- and post-assessment

Items (SDS)	Pre Mean ±SD	Post Mean± SD
Objectives	3.59± 0.79	3.75± 0.74
Support	3.64± 0.76	3.82± 0.76
Problem solving	3.55 ±0.75	3.77± 0.73
Feedback	3.58 ±0.81	3.80 ±0.77
Fedility (realisim)	3.53± 0.97	3.82± 0.88
Total SDS	3.58± 0.72	3.79± 0.69

Table 6 Normality tests showed that all variables had significant departures from normality. Therefore, the Wilcoxon signed-rank test, which is the non-parametric alternative to the paired samples t-test, was used.

Table 6.4 Tests of Normality

	Statistic	Df	Sig.	Statistic	Df
Knowledge_Pre	0.103	140	0.001	0.945	140
Knowledge_Post	0.107	140	0.000	0.949	140
SET_PRE	0.121	140	0.000	0.969	140
SET_POST	0.094	140	0.004	0.965	140
LSS_PRE	0.088	140	0.010	0.975	140
LSS_POST	0.077	140	0.043	0.975	140
SDS_Total_Pre	0.112	140	0.000	0.956	140
SDS_Total_Post	0.087	140	0.012	0.958	140
Objectives_PRE	0.157	140	0.000	0.952	140
Objectives_POST	0.115	140	0.000	0.950	140
Support_PRE	0.127	140	0.000	0.956	140
Support_POST	0.128	140	0.000	0.944	140
Problem_Solvi_PRE	0.116	140	0.000	0.951	140
Problem_Solv_POST	0.132	140	0.000	0.961	140
Feedback_PRE	0.160	140	0.000	0.941	140
Feedback_POST	0.123	140	0.000	0.947	140
Fidelity_PRE	0.203	140	0.000	0.919	140
Fidelity_POST	0.239	140	0.000	0.898	140

The results of the Wilcoxon signed-rank tests are presented in Table 7. All outcomes (SET, LSS, and SDS) improved significantly except knowledge. The change in knowledge scores was not statistically significant, $Z = -1.05$, $p = .294$. On the other hand, a significant increase was observed in the Simulation Effectiveness Tool (SET) post-simulation, $Z = -6.62$, $p < .001$. The post-simulation scores. They were also significantly higher for the Learner Satisfaction Scale (LSS) compared to pre-simulation levels, $Z = -7.01$, $p < .001$. The scores also increased significantly post-intervention on the total SDS score, $Z=3.73$, $p < .001$, and all of its subscales (see Table 8).

Table 7: These results indicate statistically significant improvements across all outcomes except for knowledge, which did not show a significant change.

Table 7.4 Results from the Wilcoxon signed-rank tests

Items (Pre _Post)	Z	Asymp. Sig. (2-tailed)
Knowledge	-1.050 ^b	0.294
SET	-6.617 ^c	0.001*
LSS	-7.012 ^c	0.001*
SDS Total	-3.736 ^c	0.001*
Objectives	-2.391 ^c	0.017*
Support	-2.673 ^c	0.008*
Problem solving	-3.209 ^c	0.001*
Feedback	-3.280 ^c	0.001*
Fidelity	-3.674 ^c	0.001*

*p value >0.05 a. Wilcoxon Signed Ranks Test, b. Based on positive ranks, c. Based on negative ranks

Table 8 shows the results from multiple linear regression to examine the effect of computer skills, GPA, gender, and training background on simulation effectiveness scores (SET, LSS, knowledge, and SDS). Advanced computer skills significantly predicted higher SET_POST scores ($B = 0.33$, $p = .005$, 95% CI [0.10, 0.56]). None of the other predictors—including gender, GPA, or training in SBE or LMCS—were statistically significant ($p > .05$).

Only computer skills had an effect, with advanced computer skills significantly predicting higher LSS scores compared to basic skills, $B = 0.5$, $p = .013$, 95% CI [0.11, 0.91]. Students with advanced computer skills earned 0.5 points higher scores than students with basic computer skills, controlling for potential confounders. Knowledge post-intervention did not vary by demographic variables. The only highly significant predictor of scores on the posttest was the test results at baseline. However, computer skills had a slightly significant effect even after adjusting for baseline knowledge.

Table 8.4 Multiple linear regression of SET, LSS, Knowledge, SDS against predictors

Variable	SET					LSS					Knowledge				
	B.	t	P value	[95% CI]		B.	t	P value	[95% CI]		Coef.	t	P>t	[95% CI]	
Demographic factors															
Computer skills															
Good	0.03	0.35	0.725	-0.12	0.17	0.01	0.04	0.964	-0.24	0.26	1.34	2.10	0.038	0.08	2.60
Advanced	0.33	2.85	0.005*	0.10	0.56	0.51	2.51	0.013*	0.11	0.91	1.02	0.99	0.322	-1.01	3.06
GPA															
80 – 100	0.00	0.05	0.961	-0.14	0.15	0.12	0.89	0.374	-0.14	0.37	-0.45	-0.70	0.482	-1.73	0.82
Gender															
Female	0.10	1.2	0.233	-0.06	0.26	0.23	1.59	0.113	-0.05	0.51	0.20	0.27	0.790	-1.25	1.64
Trained_SBE															
No	-0.02	-0.18	0.856	-0.19	0.16	-0.07	-0.45	0.653	-0.37	0.24	0.28	0.36	0.720	-1.24	1.80
Trained_LMCS															

p-value>0.05

The results of multiple linear regression, which examine the effects of computer skills, GPA, gender, and training background on the simulation design total score, are presented in Table 9. Only advanced computer skills significantly predicted the SDS scores. None of the other predictors—including gender, GPA, or training in SBE or LMCS—were statistically significant ($p > .05$).

Table 9.4 Multiple linear regression of SDS_POST against predictors

SDS_Total_Post	B	T	P>t	95% CI	
Computer skills					
Good	0.09	0.67	0.504	-0.17	0.35
Advanced	0.51	2.4	0.018*	0.09	0.92
GPA					
80 – 100	0.01	0.04	0.969	-0.26	0.27
Gender					
	0.29	1.98	0.05*	0.00*	0.59
Trained_SBE					
No	-0.11	-0.71	0.482	-0.43	0.20
Trained_LMCS					
No	0.06	0.45	0.656	-0.21	0.33

Table 10 The correlations between the four outcome variables are presented in Table 10 and Figure 1, which show moderate to strong and statistically significant correlations except for the

relationships between Knowledge Post and the other variables. A strong correlation was observed between LSS_POST and SDS_Total_Post, ($r = .840$, $p < .001$). This indicates that satisfaction with the simulation may be related to its design.

Table 10. 4 Correlation coefficients between the study's 4 outcome variables

Correlations, N = 140		Knownled ge	SET	LSS	SDS
Knowledge	Pearson	1	0.119	0.135	.171*
	Correlation Sig. (2-tailed)		0.163	0.113	0.043*
SET	Pearson	0.119	1	.519**	.539**
	Correlation Sig. (2-tailed)	0.163		0.001 *	0.001*
LSS	Pearson	0.135	.519**	1	.840**
	Correlation Sig. (2-tailed)	0.113	0.001*		0.001*
SDS	Pearson	.171*	.539**	.840**	1
	Correlation Sig. (2-tailed)	0.043*	0.001*	0.001 *	

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

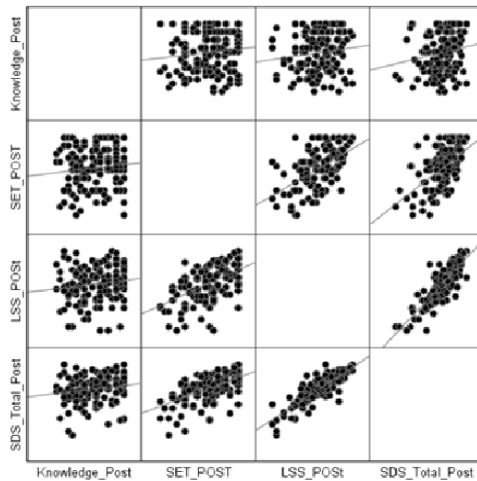


Figure 3. Scatter plots between the study's 4 outcome variables

4.2 Discussion

This chapter reviews and discusses the results obtained through the research. Then recommendations are formulated from these findings. Where the data and conclusion reached are interpreted, and practical guidance is provided for future policies and practices in the field studied. The discussion of the results revolves around analyzing the data and understanding what information was created, including clarification of relationships, trends, and inconsistencies that were discovered. In addition, the importance of the results in the context of the study and the factors that may have influenced it will be discussed.

Practical recommendations will then be formulated to guide future policies and practices. These suggestions are based on the research's actual results, with an explanation of how to apply them and their potential benefits.

Is there a relationship between sociodemographic factors and students' satisfaction, knowledge level, and simulation design?

Part of the outcome was the partial correlation of the relationship between the socio-demographic variables and the learning outcome. In particular, the higher the level of computer skills, the greater the results were on those scales, the Simulation Effectiveness Tool (SET) and the Learner Satisfaction Scale (LSS). This implies that knowledge and computer practice can improve the level of student interest in simulation-based computer-based learning tasks. On the contrary, other demographic variables like gender, GPA, location, and simulator or leadership training had no significant association with the knowledge, performance, and satisfaction scores of students, as indicated by the results mentioned above (other demographic variables). The results of this study are consistent with the study by Mulyadi (2021), which points out that students interact better with technological means because of their knowledge of them and they have become part of their daily lives (Mulyadi et al., 2021).

The findings of the study are similar to those of Borowicz-Kr et al. (2025) in that most demographic variables (including gender, academic average, and previous experience with simulation) do not correlate with learning outcomes with statistical significance, neither in the effectiveness nor in the satisfaction nor in the closure of knowledge variable. This agreement on the effectiveness of educational simulation as a tool with all classes of students, irrespective of their demographic groups, is reflected in this consensus, because Gen Z students are more adaptive to interactive technology. However, there is a partial difference between the two studies in this aspect because the present study has shown a significant correlation between computer skills and a greater magnitude of satisfaction levels and their learning effectiveness by students, which means that the higher the level of computer usage, the greater the resulting benefit the students are likely to have through a simulated learning experience. In contrast, the Brodowicz-Król study did not address computer skills as an independent variable but rather indicated that some other factors, such as place of residence and age, slightly influenced students' assessment of simulation effectiveness, which was not shown in our study. (Brodowicz-Król et al.)

This study showed consistency with a study conducted by researchers Cho & Kim (2023), which showed that student satisfaction and learning effectiveness are related to the quality of simulation design and educational practices and not to demographic factors. The study indicated that nursing students in this era are from the "digital generation" and are naturally inclined to use technology. Therefore, adopting technological simulation is in line with their preferences and increases their engagement and self-motivation. (Cho et al., 2023)

What is the effect of simulation-based learning on nursing students' satisfaction, effectiveness, and level of knowledge?

The results of this study indicate that simulation-based learning has a positive effect on satisfaction and learning effectiveness, not a knowledge effect. The outcome showed that both LSS and SET scores had a significant improvement following the intervention, and hence the students and their involvement did better when the training method was simulation-based. This fact correlates with the evidence worked out in the literature to confirm the importance of the simulation in improving the practical skills of nurses and their emotional participation in the educational process. The improvement in knowledge test scores indicated a statistically insignificant change following simulation. This implies that students can be more confident and tend to perform better when subjected to real-life simulation, but they might have to be briefed or guided about meditation or readings to recall or retain the theoretical material. This is an echo to the previous work that brings articulate experimental advantages of simulation but is obscure on the cognitive advantages of simulation without the basis of blended learning support. This study was consistent with a study by Sebold et al., (2017), who pointed out that clinical simulation effectively enhanced students' teamwork abilities and interpersonal skills, while improving their efficiency in nursing tasks. Simulation is also a powerful educational approach in nursing. This is because the study relied on the qualitative approach and documents. Data was collected from students' (portfolios) files and analyzed because the results resulted from an in-depth analysis of the students' documented experiences.(Sebold et al., 2017), Which agrees with the finding of Lee et al. (2013). The study's results indicate that simulation is a significant and motivating teaching strategy for student learning, and further research is necessary to understand its impact on clinical practice. This is because a comparison was used between two groups, a simulation group and a traditional education group, and the study used Kolb's experiential learning theory (ELT), which emphasizes learner-centered learning, justifying why simulation was used in this study. (Lee et al., 2019)This study was consistent with a study conducted by Zakari et al. (2017). He emphasizes that simulation-based education improves and enhances clinical skills and self-confidence because SBL provides and allows students to think and that debriefing sessions have helped in this. (Zakari et al., 2017) As well as, the study was consistent with a study conducted by Jawabreh et al. (2019). The researcher showed that there was an improvement in the accuracy of skills and an increase in self-confidence resulting from SBL due to matters including "debriefing" sessions, error analysis, and also safe repetition. (Jawabreh et al., 2019)

Regarding learning effectiveness, the results of this study showed an improvement in learning effectiveness and teamwork without a significant change in knowledge because simulation allowed the practice of integrated skills (evaluation, communication, safety, etc.) in a safe environment. Debriefing also played a key role in enhancing student confidence, which is consistent with those of a study conducted by (Lee et al., 2019).Also, this study was also consistent with a study conducted by Zapko et al. (2018), which indicated an increase in student satisfaction and effectiveness after using SBL, and no focus was placed on the level of knowledge among students. and this supports the results of this study, which justified this by saying that repeating scenarios provides an opportunity to practice skills. Designing scenarios according to the students' level makes the experience appropriate to their abilities. (Zapko et al., 2018)

This study also showed that student satisfaction and learning effectiveness are related to simulation design and not to cognitive outcomes, which are based on the quality of feedback (debriefing) and teacher support. Also, the difficulties of the first stage of simulation (prebriefing) were what affected the linking of theoretical information to practical application, and this explains the lack of

improvement in knowledge despite an improvement in effectiveness, which is consistent with the results of the studies of (Bae & Shin, 2024; Cho & Kim, 2023)

While the results contradict the studies conducted by Mulyadi (2021), Roh et al. (2020), and Tawalbeh (2020), which outlined that SBL improved the level of knowledge due to repetition and feedback, and the more accurate the simulation, the more students feel immersed in the scenario, and the scenarios are designed within specific objectives. In addition, there is an individual's readiness before classroom and group discussions, associated with the integration between simulation, practice, and application in a semi-realistic environment (Mulyadi et al., 2021; Roh et al., 2020; Tawalbeh, 2020).

Does the design of simulation-based learning affect students' knowledge and satisfaction?

The results of this study indicate that simulation design plays a crucial role in shaping students' satisfaction, knowledge, and learning effectiveness. There was a significant improvement in Simulation Design Scale (SDS) scores across all subdomains—including learning objectives, support, problem solving, feedback, and fidelity—after the intervention. It has also been shown that there is a positive and strong correlation between satisfaction (LSS) and simulation design quality. This supports the idea that well-organized, realistic, and supportive simulation environments enhance student engagement and satisfaction.

Simulation design has also been significantly associated with simulation effectiveness (SET), further reinforcing that the better a simulation is planned and executed, the more likely it is to produce meaningful performance results. These results are consistent with the Jeffries' simulation framework, which emphasizes the importance of design features in achieving learning objectives in simulation-based education. This study was consistent with a study conducted by Robinson and Dearmon (2013), which pointed out in its results that simulation design plays a role in improving students' performance, reducing errors, and increasing their self-esteem, which is transformed into a realistic environment, accurate analysis of students' needs, and the presence of effective supervision (Robinson & Dearmon, 2013). Furthermore, simulation-based learning design impacts student outcomes, mitigating existing challenges and reducing anxiety through realistic scenarios, feedback, and teamwork and learning in a risk-free environment. Furthermore, the design of simulation-based education enhances and develops students' competence and improves their skills. As well, improvement and development in simulation design is directly reflected in the quality of education, which these findings agree studies by (Al Khasawneh et al., 2021; Cho & Kim, 2023; Isik et al., 2019; Lee et al., 2018; Lin & Care, 2016; Roh et al., 2020; Zakari et al., 2017).

In the correlation analysis, the variables of this study demonstrated statistically significant correlations with one another. Here is a strong correlation between learning environment quality (LSS POST) and training effectiveness (SETPOST). This confirms that students' experience in simulation is primarily affected by the educational environment, its quality, and their awareness of the effectiveness of the simulation training program. There was a weak relationship between knowledge and satisfaction. The results showed that cognitive achievement (Knowledge _ Post) had a weak and statistically significant association with overall satisfaction. This result indicates that the factors influencing cognitive achievement may differ from those influencing overall satisfaction, which calls for the development of more comprehensive explanatory models that take both aspects into account. This study indicated that there is a relationship between environmental quality and training effectiveness and a strong link between them. Because improving the educational environment enhances the effectiveness of training, and vice versa. This outcome supports investment in improving educational infrastructure as an input to improving the quality of training programs.

Chapter five

Conclusion and recommendations

5.1: Conclusions

This study concluded that simulation-based learning had a positive impact on students' satisfaction and effectiveness, while it did not have a significant and noticeable impact on the level of theoretical knowledge. Simulation-based education is a strategy and an essential method of preparation for students for a successful transition into clinical practice; it helps improve communication skills, satisfaction and confidence, efficiency, and critical thinking. Teaching using simulated conditions leads to a focus on experience. Interfering in the teaching and learning process through the use of different simulation scenarios integrated into the core nursing curriculum by including suggestions for improving clinical practice

5.2: Recommendations

- Recommendations for health institutions :
- SBL is to be incorporated in health institutes' clinical training programs to increase the practical application skills of learners.
- The clinical training sites with advanced simulation laboratories should be established as a way to close the knowledge gap between the theoretical topics and real practice.
- Active professional development should be offered to the clinical instructors in order to reinforce their skills of employing SBL strategies in real-life situations in the healthcare setting.
- It is necessary to provide equitable access to simulation for students who uphold different socio-economic standings, and in this way, introduce equity and inclusion into the clinical skills acquisition process.
- Recommendations for educational institutions:
- Encourage and increase efforts and work to promote improvements in simulation laboratories and adopt and encourage simulation-based learning as a necessary complement to traditional education.

- Encouraging simulation laboratory trainers to create realistic scenarios through experiments and experiences, enhancing the pre-briefing stage, and conducting more studies that address this topic in various academic years and courses.
- strengthening the theoretical component to enhance learners' knowledge acquisition'.
- The intervention period should be extended, with pre-tests performed on the first day of training and subsequent tests performed on the last day, rather than during the same session.
- The enhancement of the debriefing stage and making the review process more focused on the aspect of communication and interpersonal skills development needs to be pointed out since it helps to enhance the level of student satisfaction and self-confidence, promote teamwork, and encourage critical thinking.
- The researcher recommends that future studies focus more on assessing the level of knowledge, ensuring that it is evaluated across multiple scenarios rather than being limited to just a few.

5.3 Limitation

In this study, there are a number of limitations, including that traditional education remains necessary for theoretical understanding and that simulation alone does not sufficiently enhance it. Limiting the generalization of results to broader categories due to the small sample size, the study duration is short without assessing the retention of knowledge and skills acquired through simulation in the long term. Students may need more time to adapt to this teaching method.

5.4 Implications of the study on nursing education

This study will contribute to the development of nursing education alongside traditional education by developing and advancing educational methods such as simulation-based education and working to create and improve a learning environment to meet students' requirements to teach skills and abilities. This study aims to foster future qualitative and quantitative research on simulation-based education and its experiences, with the goal of narrowing the gap between theoretical education and practical practice. Students should also be involved in developing and designing scenarios.

References

- Al Khasawneh, E., Arulappan, J., Natarajan, J. R., Raman, S., & Isac, C. J. S. o. n. (2021). Efficacy of simulation using NLN/Jeffries nursing education simulation framework on satisfaction and self-confidence of undergraduate nursing students in a Middle-Eastern country. 7, 23779608211011316.
- Al Khasawneh, E., Arulappan, J., Natarajan, J. R., Raman, S., & Isac, C. J. S. o. n. (2021). Efficacy of simulation using NLN/Jeffries nursing education simulation framework on satisfaction and self-confidence of undergraduate nursing students in a Middle-Eastern country. 7, 23779608211011316.
- Alrobai, T. (2020). The impact of nurse leaders/managers leadership style on job satisfaction and burnout among qualified nurses: A systematic. Review IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN, 2320-1959.
- Alrobai, T. J. R. I. J. o. N., & e-ISSN, H. S. (2020). The Impact of Nurse Leaders/Managers Leadership Style on Job Satisfaction and Burnout among Qualified Nurses: A Systematic. 2320-1959.
- Bae, M.-J., & Shin, N.-M. (2024). Factors Impeding Learning at Various Stages of Simulation Training as Experienced by Nursing Students. Paper presented at the Nursing Forum.
- Bae, M.-J., & Shin, N.-M. (2024). Factors Impeding Learning at Various Stages of Simulation Training as Experienced by Nursing Students. Nursing Forum,
- Black, B. (2022). Professional nursing-e-book: concepts & challenges: Elsevier Health Sciences.
- Black, B. (2022). Professional nursing-e-book: concepts & challenges. Elsevier Health Sciences.
- Bolisani, E., & Bratianu, C. (2017). The elusive definition of knowledge. In Emergent knowledge strategies: Strategic thinking in knowledge management (pp. 1-22): Springer.
- Bolisani, E., & Bratianu, C. (2017). The elusive definition of knowledge. In Emergent knowledge strategies: Strategic thinking in knowledge management (pp. 1-22). Springer.
- Brodowicz-Król, M., Kaczor-Szkodny, P. M., & Więch, P. J. A. Influence of socio-demographic characteristics on the evaluation of effectiveness of medical simulation. 30(8.12), 30.30.
- Brodowicz-Król, M., Kaczor-Szkodny, P. M., & Więch, P. J. A. Influence of socio-demographic characteristics on the evaluation of effectiveness of medical simulation. 30(8.12), 30.30.

- Campanati, F. L. d. S., Ribeiro, L. M., Silva, I. C. R. d., Hermann, P. R. d. S., Brasil, G. d. C., Carneiro, K. K. G., & Funghetto, S. S. J. R. B. d. E. (2021). Clinical simulation as a Nursing Fundamentals teaching method: a quasi-experimental study. *75(02)*, e20201155.
- Campanati, F. L. d. S., Ribeiro, L. M., Silva, I. C. R. d., Hermann, P. R. d. S., Brasil, G. d. C., Carneiro, K. K. G., & Funghetto, S. S. J. R. B. d. E. (2021). Clinical simulation as a Nursing Fundamentals teaching method: a quasi-experimental study. *75(02)*, e20201155.
- Cant, R. P., & Cooper, S. J. J. J. o. a. n. (2010). Simulation-based learning in nurse education: systematic review. *66(1)*, 3-15.
- Cant, R. P., & Cooper, S. J. J. J. o. a. n. (2010). Simulation-based learning in nurse education: systematic review. *66(1)*, 3-15.
- Cho, M.-K., & Kim, M. Y. (2023). Factors associated with student satisfaction and self-confidence in simulation learning among nursing students in Korea. Paper presented at the Healthcare.
- Cho, M.-K., & Kim, M. Y. (2023). Factors Associated with Student Satisfaction and Self-Confidence in Simulation Learning among Nursing Students in Korea. *Healthcare*,
- Cho, S.-H., Lee, I., Min, J., & Kim, K. (2023). TRIPS Simulation Program: Evaluating for the Efficiency of Transit Route Adjustment Strategies. Paper presented at the 2023 IEEE 26th International Conference on Intelligent Transportation Systems (ITSC).
- Cho, S.-H., Lee, I., Min, J., & Kim, K. (2023). TRIPS Simulation Program: Evaluating for the Efficiency of Transit Route Adjustment Strategies. *2023 IEEE 26th International Conference on Intelligent Transportation Systems (ITSC)*,
- Cordi, V. L. E., Leighton, K., Ryan-Wenger, N., Doyle, T. J., & Ravert, P. J. C. S. i. N. (2012). History and development of the simulation effectiveness tool (SET). *8(6)*, e199-e210.
- Cordi, V. L. E., Leighton, K., Ryan-Wenger, N., Doyle, T. J., & Ravert, P. J. C. S. i. N. (2012). History and development of the simulation effectiveness tool (SET). *8(6)*, e199-e210.
- Costello, E., Corcoran, M. A., Barnett, J. S., Birkmeier, M. C., Cohn, R., Ekmekci, O., Falk, N. L., Harrod, T., Herrmann, D., & Robinson, S. (2014). Information and communication technology to facilitate learning for students in the health professions: Current uses, gaps, and future directions. *Online learning: Official Journal of the Online Learning Consortium*, 18.
- Curtis, E. A., de Vries, J., & Sheerin, F. K. J. B. J. o. N. (2011). Developing leadership in nursing: exploring core factors. *20(5)*, 306-309.
- Curtis, E. A., Sheerin, F. K., & de Vries, J. (2011). Developing leadership in nursing: the impact of education and training. *British Journal of Nursing*, *20(6)*, 344-352.

- da Silva Tiago, R., & Mitchell, A. (2024). Integrating Digital Transformation in nursing education: best practices and challenges in Curriculum Development. In Digital transformation in higher education, Part B (pp. 57-101). Emerald Publishing Limited.
- da Silva Tiago, R., & Mitchell, A. (2024). Integrating Digital Transformation in nursing education: best practices and challenges in Curriculum Development. In Digital transformation in higher education, Part B (pp. 57-101). Emerald Publishing Limited.
- Dalwood, N., Bowles, K. A., Williams, C., Morgan, P., Pritchard, S., & Blackstock, F. J. M. e. (2020). Students as patients: A systematic review of peer simulation in health care professional education. 54(5), 387-399.
- Dalwood, N., Bowles, K. A., Williams, C., Morgan, P., Pritchard, S., & Blackstock, F. (2020). Students as patients: A systematic review of peer simulation in health care professional education. Medical education, 54(5), 387-399. <https://doi.org/10.1111/medu.14058>
- Dicheva, N. K., Rehman, I. U., Anwar, A., Nasralla, M. M., Husamaldin, L., & Aleshaiker, S. J. I. A. (2023). Digital Transformation in Nursing Education: A Systematic Review on Computer-Aided Nursing Education Pedagogies, Recent Advancements and Outlook on the Post-COVID-19 Era.
- Dicheva, N. K., Rehman, I. U., Anwar, A., Nasralla, M. M., Husamaldin, L., & Aleshaiker, S. J. I. A. (2023). Digital Transformation in Nursing Education: A Systematic Review on Computer-Aided Nursing Education Pedagogies, Recent Advancements and Outlook on the Post-COVID-19 Era.
- El Hussein, M., Harvey, G., & Kilfoil, L. (2021). Pre-brief in simulation-based experiences: A scoping review of the literature. Clinical Simulation in Nursing, 61, 86-95.
- El Hussein, M., Harvey, G., & Kilfoil, L. J. C. S. i. N. (2021). Pre-brief in simulation-based experiences: A scoping review of the literature. 61, 86-95.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. Behavior research methods, 41(4), 1149-1160.
- Ghalem, A., Okar, C., Chroqui, R., & Semma, E. J. L. (2016). Performance: A concept to define! La performance: Un concept à définir!
- Heinonen, A.-T., Kääriäinen, M., Juntunen, J., & Mikkonen, K. J. N. e. i. p. (2019). Nursing students' experiences of nurse teacher mentoring and beneficial digital technologies in a clinical practice setting. 40, 102631.
- Heinonen, A.-T., Kääriäinen, M., Juntunen, J., & Mikkonen, K. J. N. e. i. p. (2019). Nursing students' experiences of nurse teacher mentoring and beneficial digital technologies in a clinical practice setting. 40, 102631.
- Hustad, J., Johannesen, B., Fossum, M., & Hovland, O. J. J. B. n. (2019). Nursing students' transfer of learning outcomes from simulation-based training to clinical practice: a focus-group study. 18(1), 53.

- Hustad, J., Johannesen, B., Fossum, M., & Hovland, O. J. J. B. n. (2019). Nursing students' transfer of learning outcomes from simulation-based training to clinical practice: a focus-group study. 18(1), 53.
- Isik, B., Jallad, S. T. J. N. T., Humanities, I. P. o., & Sciences, S. (2019). Future of nursing education: changing values, educational paradigm and learner-educator profiles and roles. 6(1), 165-174.
- Isik, B., Jallad, S. T. J. N. T., Humanities, I. P. o., & Sciences, S. (2019). Future of nursing education: changing values, educational paradigm and learner-educator profiles and roles. 6(1), 165-174.
- Iwasiw, C. L., & Goldenberg, D. (2014). Curriculum development in nursing education: Jones & Bartlett Publishers.
- Iwasiw, C. L., & Goldenberg, D. (2014). Curriculum development in nursing education. Jones & Bartlett Publishers.
- Jallad, S. T. J. C. N. (2025). Effectiveness of simulation-based education on educational practices of communication skills, satisfaction, and self-confidence among undergraduate nursing students. 31(2), 135-143.
- Jallad, S. T. J. C. N. (2025). Effectiveness of simulation-based education on educational practices of communication skills, satisfaction, and self-confidence among undergraduate nursing students. 31(2), 135-143.
- Jallad, S. T., Natsheh, I., Helo, L. A., Ibdah, D. M., Salah, A., Muhsen, R., . . . Froukh, N. J. B. n. (2024). Nursing student's perceptions, satisfaction, and knowledge toward utilizing immersive virtual reality application in human anatomy course: quasi-experimental. 23(1), 601.
- Jawabreh, N., Ayed, A., & Batran, A. J. O. J. o. N. (2019). Effect of high fidelity simulation on nursing students' knowledge in Palestine. 9(04), 364.
- Jawabreh, N., Ayed, A., & Batran, A. J. O. J. o. N. (2019). Effect of high fidelity simulation on nursing students' knowledge in Palestine. 9(04), 364.
- Jeffries, P. (2020). Simulation in nursing education: From conceptualization to evaluation: Lippincott Williams & Wilkins.
- Jeffries, P. (2020). Simulation in nursing education: From conceptualization to evaluation. Lippincott Williams & Wilkins.
- Jeffries, P., Rizzolo, M. J. T., & Instruments. (2005). Simulation Design Scale (Student Version).
- Jeffries, P., Rizzolo, M. J. T., & Instruments. (2005). Simulation Design Scale (Student Version).
- Joseph, M. L., & Huber, D. (2021). Leadership and Nursing Care Management-E-Book: Leadership and Nursing Care Management-E-Book: Elsevier Health Sciences.

- Joseph, M. L., & Huber, D. (2021). Leadership and Nursing Care Management-E-Book: Leadership and Nursing Care Management-E-Book. Elsevier Health Sciences.
- Khlaif, Z. N., & Farid, S. J. S. L. E. (2018). Transforming learning for the smart learning paradigm: Lessons learned from the Palestinian initiative. 5, 1-21.
- Khlaif, Z. N., & Farid, S. J. S. L. E. (2018). Transforming learning for the smart learning paradigm: Lessons learned from the Palestinian initiative. 5, 1-21.
- Kim, J., Park, J.-H., & Shin, S. (2016). Effectiveness of simulation-based nursing education depending on fidelity: a meta-analysis. BMC medical education, 16(1), 152.
- Kim, J., Park, J.-H., & Shin, S. J. B. m. e. (2016). Effectiveness of simulation-based nursing education depending on fidelity: a meta-analysis. 16(1), 152.
- knowledge and confidence in performing critical care skills: A randomized controlled trial. 13, 100242.
- Kolb, D. A. (2014). Experiential learning: Experience as the source of learning and development: FT press.
- Kolb, D. A. (2014). Experiential learning: Experience as the source of learning and development. FT press.
- Lalani, S. (2023). Effectiveness of simulation in nursing education-A narrative review of literature. Liaquat Medical Research Journal, 5(03).
- Lalani, S. M. A. (2023). Nursing faculty perspective on simulation based education: A qualitative exploratory study at public and private nursing schools in Karachi, Pakistan.
- Lee, B.-O., Liang, H.-F., Chu, T.-P., & Hung, C.-C. J. N. e. i. p. (2019). Effects of simulation-based learning on nursing student competences and clinical performance. 41, 102646.
- Lee, B.-O., Liang, H.-F., Chu, T.-P., & Hung, C.-C. J. N. e. i. p. (2019). Effects of simulation-based learning on nursing student competences and clinical performance. 41, 102646.
- Lee, J. J., Clarke, C. L., & Carson, M. N. J. N. e. i. p. (2018). Nursing students' learning dynamics and influencing factors in clinical contexts. 29, 103-109.
- Lee, J. J., Clarke, C. L., & Carson, M. N. J. N. e. i. p. (2018). Nursing students' learning dynamics and influencing factors in clinical contexts. 29, 103-109.
- Lim, L., Lim, S. H., & Lim, R. W. Y. J. B. S. (2022). Measuring learner satisfaction with an adaptive learning system. 12(8), 264.
- Lim, L., Lim, S. H., & Lim, R. W. Y. J. B. S. (2022). Measuring learner satisfaction of an adaptive learning system. 12(8), 264.
- Lin, H.-H. J. T., & Care, H. (2016). Effectiveness of simulation-based learning on student nurses' self-efficacy and performance while learning fundamental nursing skills. 24(1_suppl), S369-S375.

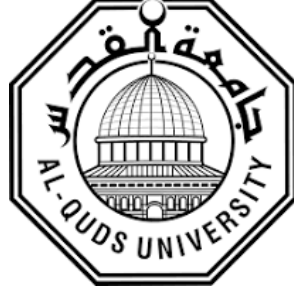
- Lin, H.-H. J. T., & Care, H. (2016a). Effectiveness of simulation-based learning on student nurses' self-efficacy and performance while learning fundamental nursing skills. 24(s1), S369-S375.
- Lin, H.-H. J. T., & Care, H. (2016b). Effectiveness of simulation-based learning on student nurses' self-efficacy and performance while learning fundamental nursing skills. 24(1_suppl), S369-S375.
- Ma, L., Yan, R., Wang, X., Gao, X., Fan, N., Liu, L., & Kang, H. (2024). Enhancing surgical nursing student performance: comparative study of simulation-based learning and problem-based learning. *Journal of multidisciplinary healthcare*, 991-1005.
- Ma, L., Yan, R., Wang, X., Gao, X., Fan, N., Liu, L., & Kang, H. (2024). Enhancing surgical nursing student performance: comparative study of simulation-based learning and problem-based learning. *Journal of multidisciplinary healthcare*, 991-1005.
- McCaughey, C. S., & Traynor, M. K. J. N. e. t. (2010). The role of simulation in nurse education. 30(8), 827-832.
- McCaughey, C. S., & Traynor, M. K. J. N. e. t. (2010). The role of simulation in nurse education. 30(8), 827-832.
- Motola, I., Devine, L. A., Chung, H. S., Sullivan, J. E., & Issenberg, S. B. J. M. t. (2013). Simulation in healthcare education: a best evidence practical guide. *AMEE Guide No. 82*. 35(10), e1511-e1530.
- Motola, I., Devine, L. A., Chung, H. S., Sullivan, J. E., & Issenberg, S. B. (2013). Simulation in healthcare education: a best evidence practical guide. *AMEE Guide No. 82*. *Medical teacher*, 35(10), e1511-e1530.
- Mulyadi, M., Tonapa, S. I., Rompas, S. S. J., Wang, R.-H., & Lee, B.-O. J. N. e. t. (2021). Effects of simulation technology-based learning on nursing students' learning outcomes: A systematic review and meta-analysis of experimental studies. 107, 105127.
- Mulyadi, M., Tonapa, S. I., Rompas, S. S. J., Wang, R.-H., & Lee, B.-O. J. N. e. t. (2021). Effects of simulation technology-based learning on nursing students' learning outcomes: A systematic review and meta-analysis of experimental studies. 107, 105127.
- Nestel, D., & Bearman, M. J. C. S. i. N. (2015). Theory and simulation-based education: definitions, worldviews, and applications. 11(8), 349-354.
- Patarru, F., Yosepfus Weu, B., Secsaria Handini, F., & Heryyanoor, H. (2019). The role of the nurse unit manager function on nursing work performance: a systematic review.
- Patarru, F., Yosepfus Weu, B., Secsaria Handini, F., & Heryyanoor, H. (2019). The role of the nurse unit manager function on nursing work performance: a systematic review.
- Patino, C. M., & Ferreira, J. C. J. J. B. d. P. (2018). Inclusion and exclusion criteria in research studies: definitions and why they matter. 44, 84-84.
- Patino, C. M., & Ferreira, J. C. J. J. B. d. P. (2018). Inclusion and exclusion criteria in research studies: definitions and why they matter. 44, 84-84.

- Prøitz, T. S. J. E. a., evaluation, & accountability. (2010). Learning outcomes: What are they? Who defines them? When and where are they defined? , 22(2), 119-137.
- Rebueno, M. C. D., Vitug, P. Z., Macindo, J. R. B. J. T., & Nursing, L. I. (2024). Organizational and facilitator-related factors of intention to adopt simulation among Filipino nurse educators: a structural equation modeling. 19(4), e678-e686.
- Rebueno, M. C. D., Vitug, P. Z., Macindo, J. R. B. J. T., & Nursing, L. i. (2024). Organizational-and facilitator-related factors of intention to adopt simulation among filipino nurse educators: a structural equation modeling. 19(4), e678-e686.
- Rebueno, M. C. D., Vitug, P. Z., Macindo, J. R. B. J. T., & Nursing, L. i. (2024). Organizational-and facilitator-related factors of intention to adopt simulation among filipino nurse educators: a structural equation modeling. 19(4), e678-e686.
- Riley, R. H. (2008). Manual of simulation in healthcare. Oxford University Press, USA.
- Riley, R. H. (2008). Manual of simulation in healthcare: Oxford University Press, USA.
- Robinson, B. K., & Dearmon, V. J. J. o. p. n. (2013). Evidence-based nursing education: Effective use of instructional design and simulated learning environments to enhance knowledge transfer in undergraduate nursing students. 29(4), 203-209.
- Robinson, B. K., & Dearmon, V. J. J. o. p. n. (2013). Evidence-based nursing education: Effective use of instructional design and simulated learning environments to enhance knowledge transfer in undergraduate nursing students. 29(4), 203-209.
- Roh, Y. S., Kim, S. S., Park, S., & Ahn, J.-W. J. C. C., Informatics, Nursing. (2020). Effects of a simulation with team-based learning on knowledge, team performance, and teamwork for nursing students. 38(7), 367-372.
- Roh, Y. S., Kim, S. S., Park, S., & Ahn, J.-W. J. C. C., Informatics, Nursing. (2020). Effects of a simulation with team-based learning on knowledge, team performance, and teamwork for nursing students. 38(7), 367-372.
- Sebold, L. F., Böell, J. E. W., Girondi, J. B. R., & dos Santos, J. L. G. J. J. o. N. U. R. d. E. U. (2017). Clinical Simulation: Development Of Relational Competence And Practical Skills In Nursing Fundamentals. 11(10).
- Sebold, L. F., Böell, J. E. W., Girondi, J. B. R., & dos Santos, J. L. G. J. J. o. N. U. R. d. E. U. (2017). CLINICAL SIMULATION: DEVELOPMENT OF RELATIONAL COMPETENCE AND PRACTICAL SKILLS IN NURSING FUNDAMENTALS. 11(10).
- Shikalepo, E. E. (2020). Defining a conceptual framework in educational research. Namibia University of Science and Technology 7p.
- Shikalepo, E. E. J. N. U. o. S., & 7p, T. (2020). Defining a conceptual framework in educational research.
- Slife, B. D., Wright, C. D., Yanchar, S. C. J. T. J. o. M., & Behavior. (2016). Using operational definitions in research: A best-practices approach. 119-139.
- Tawalbeh, L. I. J. I. J. o. A. n. s. (2020). Effect of simulation modules on Jordanian nursing student

- Tawalbeh, L. I. J. I. j. o. A. n. s. (2020). Effect of simulation modules on Jordanian nursing student knowledge and confidence in performing critical care skills: A randomized controlled trial. 13, 100242.
- Thorne, S. E. (2006). Nursing education: Key issues for the 21st century. *Nurse Education Today*, 26(8), 614-621.
- Thorne, S. E. (2006). Nursing education: Key issues for the 21st century. *Nurse Education Today*, 26(8), 614-621.
- Umar, M., & Ko, I. (2022). E-learning: Direct effect of student learning effectiveness and engagement through project-based learning, team cohesion, and flipped learning during the COVID-19 pandemic. *Sustainability*, 14(3), 1724.
- Uysal, N. J. R. I.-a. d. e. (2016). Improvement of nursing students' learning outcomes through scenario-based skills training. 24, e2790.
- Uysal, N. J. R. I.-a. d. e. (2016). Improvement of nursing students' learning outcomes through scenario-based skills training. 24, e2790.
- Uysal, N. J. R. I.-a. d. e. (2016). Improvement of nursing students' learning outcomes through scenario-based skills training. 24, e2790.
- Valsaraj, B. P., Raman, S., Kuzhivilayil Yesodharan, D., & Qutishat, M. (2025). Students' Satisfaction, Confidence, and Experience With Mental Health Simulation in a Middle Eastern Nursing College: A Mixed-Methods Study. *Nursing Forum*,
- Valsaraj, B. P., Raman, S., Kuzhivilayil Yesodharan, D., & Qutishat, M. (2025). Students' Satisfaction, Confidence, and Experience With Mental Health Simulation in a Middle Eastern Nursing College: A Mixed-Methods Study. *Nursing Forum*,
- Xu, Z. J. A., & Engineering, C. (2024). AI in education: Enhancing learning experiences and student outcomes. 51(1), 104-111.
- Xu, Z. J. A., & Engineering, C. (2024). AI in education: Enhancing learning experiences and student outcomes. 51(1), 104-111.
- Xu, Z. J. A., & Engineering, C. (2024). AI in education: Enhancing learning experiences and student outcomes. 51(1), 104-111.
- Yoder-Wise, P. S., & Sportsman, S. (2022). *Leading and Managing in Nursing E-Book: Leading and Managing in Nursing E-Book: Elsevier Health Sciences.*
- Yoder-Wise, P. S., & Sportsman, S. (2022). *Leading and Managing in Nursing E-Book: Leading and Managing in Nursing E-Book. Elsevier Health Sciences.*
- Yoder-Wise, P. S., & Sportsman, S. (2022). *Leading and Managing in Nursing E-Book: Leading and Managing in Nursing E-Book. Elsevier Health Sciences.*
- Zakari, N., Hamadi, H. Y., Audi, G. R., & Hamadi, W. J. I. J. o. N. E. (2017). Impact of simulation on nursing students' competence: a qualitative perspective study in Saudi Arabia. 9(2), 75-80.

- Zakari, N., Hamadi, H. Y., Audi, G. R., & Hamadi, W. J. I. J. o. N. E. (2017). Impact of simulation on nursing students' competence: a perspective qualitative study in Saudi Arabia. 9(2), 75-80.
- Zakari, N., Hamadi, H. Y., Audi, G. R., & Hamadi, W. J. I. J. o. N. E. (2017). Impact of simulation on nursing students' competence: a perspective qualitative study in Saudi Arabia. 9(2), 75-80.
- Zapko, K. A., Ferranto, M. L. G., Blasiman, R., & Shelestak, D. J. N. e. t. (2018). Evaluating best educational practices, student satisfaction, and self-confidence in simulation: A descriptive study. 60, 28-34.
- Zapko, K. A., Ferranto, M. L. G., Blasiman, R., & Shelestak, D. J. N. e. t. (2018). Evaluating best educational practices, student satisfaction, and self-confidence in simulation: A descriptive study. 60, 28-34.
- Zapko, K. A., Ferranto, M. L. G., Blasiman, R., & Shelestak, D. J. N. e. t. (2018). Evaluating best educational practices, student satisfaction, and self-confidence in simulation: A descriptive study. 60, 28-34.
- Zhu, Y. J. A. S. S. (2013). A review of job satisfaction. 9(1), 293.
- Zhu, Y. J. A. S. S. (2013). A review of job satisfaction. 9(1), 293.
- Zhu, Y. J. A. S. S. (2013). A review of job satisfaction. 9(1), 293.
- Zulkosky, K. D. J. C. s. i. n. (2012). Simulation use in the classroom: Impact on knowledge acquisition, satisfaction, and self-confidence. 8(1), e25-e33.
- Zulkosky, K. D. J. C. s. i. n. (2012). Simulation use in the classroom: Impact on knowledge acquisition, satisfaction, and self-confidence. 8(1), e25-e33.

The Questionnaire
جامعة القدس - أبو ديس -
أخي الطالب (هـ)



تحية طيبة:

السلام عليكم ورحمة الله وبركاته
يسعدني ان اضع بين ايديكم هذا الاستبيان الذي يدخل في اطار استكمال الرسالة الحصول على درجة الماجستير في الادارة في التمريض بعنوان (التعلم القائم على المحاكاة في مقرر ادارته وقيادته التمريض : دراسة شبه تجريبية على المعرفة و الفعالية والرضا) ونظرا لأهمية رأيكم في هذا المجال نامل منكم التكرم بالإجابة على أسئلة الاستبيان بدقة حيث ان صحة النتائج تعتمد بدرجة كبيرة على صحة اجابتم فمشاركتكم ضرورية ورأيكم عامل أساسي من عوامل نجاحها علما ان جميع اجاباتكم لن تستخدم الا في أغراض البحث العلمي فقط
مع العلم ان المشاركة في البحث اختياريه
مدة تعبئه 10 دقائق

وتقبلو فائق الاحترام

Part One: Socio-Demographic Data

1. Gender: () Male () Female
2. Age (years): () < 20 () 20 to 24 () 25 to 29 () > 29
3. Economic status: () low () moderate () high
4. Average: () 90-100 () 80-89% () 70-79% () < 60
5. Place of Residence: () City () Village () Camp
() Other: _____
6. Computer skills: () basic () very good () advanced
7. Have you used simulation-based education before?
() Yes () No
8. Have you trained in a leadership and management course at a clinical site (hospital)?
() Yes () No

Simulation Effectiveness Tool (SET)

Scale: (0 = Disagree, 1 = Agree, 2 = Strongly Agree)

	Items	disagree	Agree	Strongly agree
1.	My assessment skills improved	0	1	2
2.	Debriefing and group discussion were valuable	0	1	2
3.	Completing the SCE helped me understand classroom information better	0	1	2
4.	The instructors' questions helped me to think critically	0	1	2
5.	I was challenged in my thinking and decision-making skills	0	1	2
6.	I learned as much from observing my peers as I did when I was actively when I was actively involved in simulated management case	0	1	2
7.	I feel better prepared to manage real management conditions	0	1	2
8.	I feel more confident in my decision-making skills	0	1	2
9.	I am more confident in determining what to tell the health care provider	0	1	2
10.	I developed a better understanding of the management case scenario of the condition in the SCE	0	1	2
11.	I feel more confident that I will be able to recognize changes in my real management condition.	0	1	2
12.	I can able to better predict what changes may occur with in real management conditions	0	1	2
13.	I developed a better understood of the role play as team work that was in the SCE and teamwork in the SCE	0	1	2

Learner Satisfaction Scale(LSS)

1. Strongly Disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly Agree

	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	SBL is easy to use	1	2	3	4	5
2.	SBL is user-friendly	1	2	3	4	5
3.	The operation of the SBL is stable	1	2	3	4	5
4.	SBL makes it easy for me to find the content I need	1	2	3	4	5
5.	SBL provides up-to-date content	1	2	3	4	5
6.	SBL provides content that exactly fits my needs	1	2	3	4	5
7.	SBL provides sufficient content	1	2	3	4	5
8.	SBL provides useful content	1	2	3	4	5
9.	SBL enables me to learn the content I need	1	2	3	4	5
10.	SBL enables me to choose what I want to learn	1	2	3	4	5
11.	SBL enables me to control my learning progress	1	2	3	4	5
12.	SBL records my learning progress and performance	1	2	3	4	5
13.	SBL supports my learning	1	2	3	4	5
14.	SBL recommends that it reflect my learning progress	1	2	3	4	5

Simulation Design Scale (SDS)

1. Strongly Disagree 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly Agree

	Item	Strongly Disagree	Disagree	Neutral	A g r e e	Stron gly Agree
Objective and information						
1.	There was enough information provided at the beginning of the simulation to provide direction and encouragement	1	2	3	4	5
2.	I clearly understood the purpose and objective of the simulation	1	2	3	4	5
3.	The operation of the system is stable	1	2	3	4	5
4.	There was enough information provided to me during the simulation	1	2	3	4	5
5.	The cues were appropriate and geared to promote my understanding	1	2	3	4	5
Support						
6.	Support was offered promptly	1	2	3	4	5
7.	My need for help was recognized	1	2	3	4	5
8.	I felt supported by the teacher assistance during the simulation	1	2	3	4	5
9.	I was supported in the learning process	1	2	3	4	5
Problem solving						
10.	Independent problem-solving was facilitated	1	2	3	4	5
11.	Was encouraged to explore all possibilities of the simulation	1	2	3	4	5
12.	The simulation was designed for my specific level of knowledge and skills level	1	2	3	4	5
13.	The simulation allowed me the opportunity to prioritize nursing assessments and care	1	2	3	4	5

14.	The simulation provided me with an opportunity to goal for management concepts	1	2	3	4	5
Feedback						
15.	Feedback provided was constructive	1	2	3	4	5
16.	Feedback was provided promptly	1	2	3	4	5
17.	The simulation allowed me to analyze my behavior and actions	1	2	3	4	5
18.	There was an opportunity after the simulation to obtain guidance/feedback from the teacher to build knowledge to another level	1	2	3	4	5
Fidelity						
19.	The scenario resembled a real-life situation	1	2	3	4	5
20.	Real-life factors, situations, and variables were built in the simulation	1	2	3	4	5

Conceptual Knowledge test

Choose the correct answer

1. All the following are power types except?

- A) Referent Power
- B) Expert Power
- C) trans formal
- D) Reward power

2. Which type of power is based on an individual's knowledge, skills, or expertise?

- A) Coercive Power
- B) Legitimate Power
- C) Referent Power
- D) Expert Power

3. Which type of power is most likely to create a positive and inspiring atmosphere?

- A) Coercive Power
- B) Legitimate Power
- C) Referent Power
- D) Expert Power

4. Which type of power is most effective in emergencies or crises?

- A) Referent Power
- B) Coercive Power

- C) Expert Power
- D) Reward Power

5. Which type of power is most likely to create competition among employees?

- A) Coercive Power
- B) **Reward Power**
- C) Legitimate Power
- D) Expert Power

6. What is a key disadvantage of reward power?

- A) It builds trust and loyalty
- B) **It can create tension among employees**
- C) It encourages personal growth
- D) It is always fair

7. Coercive power is effective in the long term because it creates a sustainable environment of compliance through fear and punishment.

a) true (T/F)

8. Reward power can lead to dissatisfaction if rewards are not given fairly. (T/F)

9. True or False: Legitimate power can lead to blind obedience. (T/F)

10. Expert power is based on admiration and respect rather than knowledge.

And skills. (T/F)

11. All the following are leadership styles except?

- A. Democratic
- B. **Reward**
- C. Laissez-faire
- D. Transformational

12. In which leadership style does the leader provide minimal direction?

- A. Democratic
- B. Autocratic
- C. **Laissez-faire**
- D. Transactional

13. Which leadership style is effective in situations requiring quick decisions?

- A. Democratic
- B. **Autocratic**
- C. Laissez-faire
- D. Transactional

14. What is a potential drawback of democratic leadership?

- A. Reduced creativity
- B. **Slower decision-making**
- C. Low team morale
- D. Lack of control

15. Which leadership style focuses on structure and specific tasks?

- a. Transformational
- b. **Transactional**
- c. Democratic
- d. Laissez-faire

16. Which leadership style may lead to a lack of direction and accountability if not managed properly?

- a. Democratic
- b. Autocratic
- c. Laissez-faire
- d. Transactional

17. Autocratic leadership always leads to low team morale. (T/F)

18. Laissez-faire leadership is highly effective in all situations. (T/F)

19. Understanding leadership styles is important for adapting to different situations. (T/F)

20. Leadership has no impact on organizational success. (T/F)

IRB Approval

Al Quds University
Faculty of Health Professions
Jerusalem – Abu Dis



جامعة القدس
كلية المهن الصحية
القدس – أبو ديس

Research Ethics Subcommittee of Faculty of Health Professions
Letter of approval

21/3/2025
Ref. No.: RESC/2025-47

Dear Applicants, (Dr. Samar Jallad, Mr. Mohammad Abd alqder)

Program: MSc Nursing Department

The Research Ethics subcommittee of the Faculty of Health Professions has recently reviewed your proposal entitled (**The Impact of integrating simulation based learning in nursing management and leadership course on undergraduate nursing knowledge, satisfaction, and performance: Quasi-experimental Study**) submitted by (Dr. Samar Jallad). Your proposal is deemed to meet the requirements of research ethics at Al-Quds University, but further assessment is required by the Central Research Ethics Committee of Al-Quds University. We wish you all best for the conduct of the project.

Hussein ALMasri, PhD

Hussein ALMasri

Associate Professor of Medical Imaging
Research Ethics Subcommittee Chair
Faculty of Health Professions

Satisfaction, Effectiveness, and Design Simulation Scale Frequencies (Pre-Post)

Learner satisfaction scale, frequencies		Pre					Post				
		Strongly disagree	Disagree	Undecided	Agree	Strogly agree	Strongly disagree	Disagree	Undecided	Agree	Strogly agree
1	Simulation Based Learning is easy to use	5.00	17.86	37.86	35.71	3.57	4.90	7.70	25.20	52.40	7.70
2	SBL is user-friendly	5.00	15.00	35.70	37.90	6.40	1.40	9.80	25.20	46.20	15.40
3	The operation of the SBL is stable	3.57	12.86	35.00	39.29	9.29	1.40	9.09	16.08	56.64	14.69
4	SBL makes it easy for me to find the content I need	2.14	15.71	33.57	40.71	7.86	0.70	7.69	24.48	48.25	16.08
5	SBL provides up-to-date content	3.57	7.86	40.00	37.14	11.43	2.10	6.29	20.28	50.35	18.88
6	SBL provides content that exactly fits my needs 1 2	4.29	15.71	30.71	42.14	7.14	2.10	11.19	25.17	40.56	18.88
7	SBL provides sufficient content	3.57	8.57	37.14	42.86	7.86	2.10	6.29	27.27	40.56	21.68
8	SBL provides useful content	4.29	16.43	24.29	47.14	7.86	0.00	5.59	23.08	47.55	21.68
9	SBL enables me to learn the content I need	4.29	13.57	35.71	40.00	6.43	0.00	10.49	29.37	40.56	17.48
10	SBL enables me to choose what I want to learn	4.29	15.00	27.86	44.29	8.57	0.70	6.99	27.97	45.45	16.78
11	SBL enables me to control my learning progress	2.14	16.43	32.86	38.57	10.00	0.70	6.99	20.98	46.15	22.38
12	SBL records my learning progress and performance	5.00	10.00	35.71	43.57	5.71	0.00	6.29	26.57	40.56	24.48
13	SBL supports my learning	4.29	11.43	26.43	42.86	15.00	0.70	7.69	18.18	48.25	23.08
14	SBL recommends topics that reflects my learning progress	5.71	10.71	27.86	47.14	8.57	2.80	6.29	16.08	49.65	23.08
Simulation design scale											
1	There was enough information provided at the beginning of the simulation to provide direction and encouragement.	3.57	10.00	25.00	45.00	16.43	2.10	6.99	27.97	46.85	13.29
2	I clearly understood the purpose and objectives of the simulation	2.86	10.00	22.86	55.00	9.29	1.40	9.09	18.88	48.25	20.28
3	The operation of the system is stable	4.29	9.29	25.71	50.00	10.71	0.70	8.39	27.27	46.15	15.38
4	There was enough information provided to me during the simulation.	2.86	10.71	23.57	47.86	15.00	1.40	3.50	26.57	44.06	22.38
5	The cues were appropriate and geared to promote my understanding.	1.43	8.57	32.86	42.86	14.29	2.10	6.99	20.28	50.35	18.18
6	Support was offered in a timely manner.	2.86	8.57	30.71	48.57	9.29	2.10	6.29	27.97	41.26	19.58
7	My need for help was recognized	2.86	5.71	33.57	47.14	10.71	1.40	5.59	21.68	48.25	20.98
8	I felt supported by the teacher's assistance during the simulation	1.43	10.00	23.57	46.43	18.57	0.70	6.99	18.18	47.55	24.48
9	I was supported in the learning process.	2.14	6.43	25.00	47.14	19.29	2.80	2.80	23.78	47.55	20.98
10	independent problem-solving was facilitated	2.14	9.29	32.86	42.86	12.86	0.00	5.59	34.27	41.26	16.78
11	I was encouraged to explore all possibilities of the simulation	2.86	6.43	31.43	49.29	10.00	0.70	4.90	26.57	47.55	18.18
12	The simulation was designed for my specific level of knowledge and skills.	5.00	9.29	25.71	45.00	15.00	2.10	8.39	20.28	48.95	18.18
13	The simulation allowed me the opportunity to prioritize nursing assessments and	3.57	5.71	32.14	47.86	10.71	1.40	6.29	24.48	46.85	18.88
14	The simulation provided me an opportunity to goal set for management concept	4.29	7.86	30.00	48.57	9.29	0.00	6.99	23.08	47.55	20.28
15	My Feedback provided was constructive.	2.14	8.57	27.14	48.57	13.57	0.70	7.69	25.87	41.26	22.38
16	My Feedback was provided in a timely manner.	2.14	10.00	29.29	48.57	10.00	2.10	5.59	22.38	46.15	21.68
17	The simulation allowed me to analyze my own behavior and actions.	4.29	7.86	29.29	45.00	13.57	1.40	6.29	20.28	50.35	19.58
18	There was an opportunity after the simulation to obtain guidance/feedback from the teacher in order to build knowledge to another level.	3.57	7.86	28.57	45.00	15.00	1.40	5.59	23.78	48.25	18.88
19	The scenario resembled a real-life situation	5.00	12.86	23.57	43.57	15.00	1.40	8.39	16.78	51.05	20.28
20	Real life factors, situations, and variables were built into the	6.43	7.14	26.43	45.71	14.29	2.10	7.69	19.58	45.45	23.08

		Pre			Post		
Simulation Effectiveness Tool		Disagree	Agree	Strongly agree	Disagree	Agree	Strongly agree
1	My assessment skills improved	7.14	69.29	23.57	2.10	59.44	36.36
2	Debriefing and group discussion were valuable	5.71	75.71	18.57	2.80	46.15	48.25
3	Completing the simulation clinical experience (SCE) helped me understand	6.40	62.90	30.70	4.20	50.35	43.36
4	The instructors questions helped me to think critically	6.43	47.14	46.43	3.50	41.26	53.15
5	I was challenged in my thinking and decision-making skills	12.14	57.14	30.71	2.80	57.34	37.76
6	I learned as much from observing my peers as I did when I was actively involved in simulated management case	10.00	65.00	25.00	6.29	48.95	42.66
7	I feel better prepared to manage for real management	12.14	58.57	29.29	2.10	50.35	45.45
8	I feel more confident in my decision- making skills	11.43	63.57	25.00	7.69	44.06	45.45
9	I am more confident in determining what to tell the health care provider	12.14	60.00	27.86	2.80	50.35	44.76
10	I developed a better understanding of the management case scenario of the condition in the SCE	10.71	67.86	21.43	4.20	48.25	45.45
11	I feel more confident that I will be able to recognize changes in my real management condition	9.29	65.71	25.00	4.90	46.85	46.15
12	I am able to better predict what changes may occur with my real managementcondition	11.43	65.00	23.57	3.50	44.76	49.65
13	I developed a better understanding of the role play as teamwoek that were in the SCE	10.00	63.57	26.43	2.80	43.36	46.85

التعلم القائم على المحاكاة في مساق الدارة و القيادة في التمريض: دراسة شبه

تجريبية على المعرفة و الفعالية و الرضا

اسم الطالب :محمد فارس عبد القادر

المشرف .د. سمر جلا

الملخص

المقدمة: تُعدّ التعلّم القائم على المحاكاة أحد أهم أساليب التعليم والتعلّم التي تحاكي المواقف الواقعية في بيئة تدريبية آمنة. كما يوفّر التعليم القائم على المحاكاة فرصًا للتفاعل والتعاون والعمل الجماعي، مما ينعكس إيجابًا على مستوى رضا الطلبة، ويزيد من ثقتهم بأنفسهم، وينمّي لديهم مهارات التفكير النقدي، وحل المشكلات، واتخاذ القرار

الهدف:هدفت هذه الدراسة إلى تقييم التعلّم القائم على المحاكاة ضمن مساق الإدارة والقيادة في التمريض، مع التركيز على تأثيره في معرفة الطلبة، ورضاهم، ومدى فاعليتهم

المنهجية: تم اعتماد تصميم شبه تجريبي (قبل التدريب وبعده) على عينة من طلبة السنة الثالثة في كلية التمريض (عددهم = 140). وقد استُخدم استبيان لقياس اكتساب المعرفة، ومستوى الرضا، والفاعلية لجمع البيانات

النتائج: أظهرت الدراسة وجود تأثيرات إيجابية ذات دلالة إحصائية على مستوى رضا الطلبة بعد تجربة المحاكاة ($p = 0.001$) بمتوسط درجات (0.66 ± 3.76) ، في حين لم تُسجّل فروق ذات دلالة في مستوى المعرفة. ولوحظ أن متوسط الدرجات قبل تجربة المحاكاة كان أعلى منه بعد التجربة (4.53 ± 13.11 مقابل 4.88 ± 12.79 على التوالي). إضافةً إلى ذلك، تبين وجود تأثير معنوي لتصميم بيئة مختبر المحاكاة على معرفة الطلبة ورضاهم. كما وُجد تأثير للعوامل الديموغرافية، وكان العامل الوحيد ذو الدلالة هو مهارات استخدام الحاسوب في علاقتها مع فاعلية المحاكاة ورضا الطلبة ($P = 0.005$)

التوصيات: تشير هذه الدراسة إلى ضرورة تعزيز جهود المؤسسة التعليمية في تطوير مختبرات المحاكاة وتفعيل التعليم القائم عليها كجزء أساسي مكمل للتعليم التقليدي. كما يُوصى بتشجيع مدربي مختبرات المحاكاة على تصميم سيناريوهات واقعية من خلال التجارب والخبرات العملية،

وتعزيز مرحلة الإحاطة المسبقة (Pre-briefing) وإجراء المزيد من الدراسات التي تتناول هذا الموضوع في مستويات أكاديمية مختلفة ومساقات متعددة.

الخلاصة: يرتبط التعليم القائم على المحاكاة بتحسين رضا الطلبة وفاعليتهم ومهاراتهم وممارساتهم الإدارية. وتكتسب هذه الدراسة أهمية خاصة للمؤسسات التعليمية، إذ إن التعليم القائم على المحاكاة يسهم في توفير بيئة تعليمية أكثر أمانًا وكفاءة.

الكلمات المفتاحية: التعلّم القائم على المحاكاة، التعليم التمريضي، طلبة التمريض، القيادة والإدارة في التعليم التمريضي، المعرفة، الفعالية، الرضا.