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Students Competency, Confidence, and Proficiency in Simulation-Based Training at AMCC School of Nursing

A Thesis
Presented in Partial Fulfillment. of the Requirements for the Degree
Bachelor of Science in Nursing

by
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APPROVAL SHEET

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DEDICATION

This research is dedicated to all nursing students who strive for excellence in both their education and profession. To the educators and mentors who work relentlessly to assist and encourage these youngsters as they grow and develop.

Correcting error and helping us polish our research paper. To our family, for their unconditional love, support and sacrifices for paving the way for us to reach this achievement. To our friends for their constant support and belief in our abilities. Extending their knowledge for us to understand more and explain the things that we have difficulties on. To the healthcare workers who inspire us via their commitment to patient care and ongoing education. Lastly to the participants who has played a big part in this research study, participants that willingly to extend their time and efforts to achieve the success that we have now.

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ABSTRACT

- ***Background and Aim:***

Simulation-based training is a new approach to nursing education, significantly enhancing student performance compared to the traditional style of teaching and learning. This study aimed to understand the proficiency, competence, and confidence of nursing students at Adventist Medical Center College, Iligan Inc.

- ***Methods:***

This research used a descriptive approach to the effectiveness of simulation-based training (SBT) for 40 Level 2 nursing students, assessing their skill proficiency, attitudes toward SBT, and perceived confidence and competence. The data collected will be analyzed to determine the impact of SBT on their clinical skills and confidence levels.

- ***Results:***

Students showed better skills in IV termination, priming, and regulating after the training, had positive views on simulation-based training, and found it helpful. In terms of their confidence level, they felt more confident in their clinical skills after the training. At the same time, the students became more competent and prepared to perform IV-related tasks in a clinical setting.

- ***Conclusion:***

This research highlights that simulation-based training boosts competence and confidence among students by replicating real-life scenarios in a safe environment. To maximize the benefits, institutions should integrate simulation into the curriculum, allocate necessary resources, and offer continuous faculty development.

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CHAPTER ONE
INTRODUCTION

Studies show that, in comparison with traditional didactic instruction, simulation-based training is an innovative approach to nursing education, as it significantly enhances student performance. Albarracin and Santiago, 2016, evaluated 85% of students who utilized SBT to enhance their skills against the traditional lecturing method, which had 65%. Issenberg et al. 2005 also developed a 70-90% enhancement using a high-fidelity simulator. Rosario, 2018, discovered that in simulated scenarios, 78% of students performed with enhanced critical thinking and cooperation in contrast to 55% trained through traditional techniques. In 2019, Bautista and Lopez noted that despite the low price of setting up simulation labs it resulted in a reduction of 40% in clinical errors and 50% savings in training time within five years. In fact, the Higher Education Commission of the Philippines highlighted the SBT in nursing programs in 2020, leading to a 30% rise in the number of Filipino nursing graduates working abroad.

Providing nurses with the right environment to practice their skills, enhances their training and clinical competence and equips them to tackle life's challenges. SBT improves safety in patient care by allowing students to learn without any risk involved. SBT is critical to managing crisis resources and enhancing critical decision-making, collaboration, and communication skills. Immediate feedback encourages continuous learning and improvement. Although it has some initial costs, SBT is cost-effective in the long run due to reduced usage of physical training materials and a minimized occurrence of potential errors. Not least importantly, SBT standardizes education and guarantees teaching of high quality and comparable quality at different institutions.

Literature in the Philippines on simulation-based training emphasizes its role in enhancing competence and confidence among nursing students. In the findings by Albarracin and Santiago, students from the University of the Philippines Manila who had undergone SBT exhibited better clinical skills and decision-making compared with those instructed through lectures, corresponding to global findings on the worth of practice with fast feedback. Rosario (2018) showed improved critical thinking skills and teamwork for students at the University of Santo Tomas in simulated emergencies relevant to care in the Philippines with high patient-to-nurse ratios. Bautista and Lopez, 2019 demonstrated at Ateneo de Manila University some of the economic benefits of SBT—reduced training time and clinical errors that offset the initial investments. CHED, 2020 Support SBT for Improved Global Competitiveness of Filipino Health Workers.

According to Sawyer, Gray, and Umoren, 2022, healthcare simulation is a technique replicating real healthcare events for practice purposes, and learning and evaluation. This allows for experiential learning that professionals could not gain during actual patient care. This work goes on to associate simulation with better knowledge, skills, clinical care, and patient outcomes.

Krishnan, Keloth, and Ubedulla defined it in 2017 as the creation of artificial conditions to study or experience real-life possibilities. The term is derived from the Latin word "simulare," which means "to copy." It is illustrated that the use of methods that are internationally taught skills and techniques can achieve educational goals by using hands-on learning and simulation-based training that uses real-life scenarios in a realistic environment. This will be a reflection of an actual setting that might happen in reality this will also actively ask for feedback from students and immersive learning without the risk of real-life threats.

Further research is needed to determine the regional relevance of the long-term impact of SBT on clinical practice and patient outcomes in the Philippines, although it is a useful tool for nursing education. Studies by Albarracin and Santiago and Isenberg et al. What is available now shows short-term gains in knowledge and skills and explains how these gains are sustained over time.

Rosario et al. and Munshi et al. report short-term benefits for critical thinking and teamwork, although there is very little evidence of translation into clinical practice with time. Also, most studies focus on high-fidelity simulations whereas low-fidelity simulations have cost and feasibility advantages in resource-limited settings.

- *Purpose and Research Questions*

This study aimed to evaluate how realistic and evidence-based simulation training on clinical skills impacts nursing students' competence and confidence.

The effects and experiences of nursing students at Adventist Medical Center College. This paper sought to answer the specific questions:

- What is the skill proficiency level of nursing students in IV termination, priming, and regulating, as a realistic and evidence-based simulation training on clinical skills?
- What is the student's attitude towards the simulation?
- What is the perceived confidence level of students in their participation in IV termination, priming, and regulating simulation training?
- What is the perceived competence level of students after participating in IV termination, priming, and regulating simulation training?

➢ *Hypotheses*

The following hypotheses are aligned with the study's aim to evaluate the impact of realistic and evidence-based simulation training on nursing students' competence and confidence in clinical skills, as well as their attitudes towards simulation-based education.

- **Ha^1:** Simulation-based training significantly improves the clinical competence of Level 2 nursing students at Adventist Medical Center College Iligan Inc.
- **Ha^2:** Simulation-based training significantly enhances the self-confidence of Level 2 nursing students in performing clinical procedures.
- **Ha^3:** Students who undergo simulation-based training will report higher levels of satisfaction with their clinical education compared to those who receive traditional training methods.

➢ *Significance of the Study*

The study contributes to the broader understanding of the benefits and challenges of implementing SBT in nursing education and its potential to enhance the overall quality of healthcare education and practice, by addressing these aspects:

- Improved Learning: SBT significantly improves student performance compared to traditional didactic delivery of education. This new approach fosters greater development of critical thinking, collaboration, and clinical skills in nursing students.
- Improved Clinical Competency: SBT exposes students to relevant training scenarios so that nurses can develop the competencies in practice that are required. SBT improves safety in patient care by providing a no-risk learning environment for students.
- Local and Global Impact: This study demonstrates the importance of establishing self-based training to enhance the competence and self-assurance of nursing students in the Philippines. It aligns with global research on the efficacy of simulation-based learning. It was also mentioned that nursing graduates from the Philippines have the potential to significantly enhance their employability globally.
- Foundation for Further Research: This study will provide impetus for further research on the long-term effects of SBT on its clinical practice and subsequent outcomes, with a special focus on the Philippines. It calls for more research about the sustainability of skills and knowledge given by SBT and their translation into real-world clinical practice over time.

➢ *Scope and Delimitations*

This investigation centers on determining the effects of simulation-based training on the competence and confidence of Level 2 nursing students at the Adventist Medical Center College - Iligan, Inc., particularly in clinical skills involving IV termination, priming, and regulating. It also seeks to find out students' skills in these areas and their attitudes toward SBT, together with the perceived level of confidence and competence after receiving training. By focusing on students who have direct exposure to SBT, this research is intended to provide data relevant to its objectives, and therefore, to offer insights into the effectiveness of SBT in enhancing nursing education. The delimitations are confined only to a population of 40 Level 2 nursing students, which excludes Level 1 students who have not yet experienced SBT and more advanced Level 3 and 4 students, so the focus will always remain on the group at an intermediate stage in nursing education.

➢ *Definition of Terms*

This section provides operational definitions for key terms used in this study.

- *Simulation-Based Training (SBT):* An educational approach that uses simulation techniques to replicate clinical scenarios for training purposes.
- This method aims to enhance students' clinical skills, knowledge, and confidence in a controlled and safe environment.
- *Clinical Competence:* The ability of nursing students to effectively integrate knowledge, skills, and attitudes in the clinical setting to provide high-quality patient care.
- *Self-Confidence:* The belief in one's abilities and judgment when performing clinical tasks and making decisions in the healthcare setting.
- *High-Fidelity Simulation (HFS):* A type of simulation that uses advanced technology and realistic scenarios to create a highly immersive training environment, closely mimicking real-life clinical situations.
- *IV Termination, Priming, and Regulating:* Specific clinical procedures involving the setup, maintenance, and discontinuation of intravenous lines, which are essential skills for nursing students.
- *Return Demonstration (Retdem):* A method used in nursing education where students are required to perform clinical skills in front of an instructor or evaluator to demonstrate their competence.
- *Evidence-Based Simulation:* Simulation scenarios and training methods that are developed based on current best practices and scientific evidence to ensure their effectiveness in improving clinical skills and knowledge.
- *Perceived Competence:* The self-assessed level of proficiency and ability that students feel they have achieved after participating in simulation-based training.
- *Attitude Towards Simulation:* The opinions, feelings, and perspectives of nursing students regarding the use of simulation as an

educational tool.

- *Educational Plan:* A structured program or curriculum designed to achieve specific learning outcomes, including the use of simulation-based training to enhance clinical skills and knowledge.
- *Survey Questionnaire:* A data collection tool used to gather information from students about their experiences, attitudes, and self-assessed competence and confidence following simulation-based training.
- *Self-Assessment Tool:* An instrument that allows students to evaluate their own performance and learning outcomes after participating in simulation scenarios.
- *Skill Proficiency Level:* The degree of skill and accuracy demonstrated by nursing students in performing clinical tasks during simulation-based training.

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CHAPTER TWO
REVIEW OF RELATED LITERATURE

This chapter signifies the review of related literature and studies that are considered relevant and substantial to the present study.

- *Strategies for Sustaining and Enhancing Nursing Students*

According to Ghasemi et al,. (2020) Nursing education is important in preparing students to meet the demands of clinical practice. Traditional methods, such as lectures and practical work in clinical settings, have become the foundation of nursing education. However, these methods have limitations, including variability in clinical experience and the burden of working in real-world settings without prior training.

The goal of simulation education for nursing students is to expose them to real-world situations so that they can apply their knowledge in a safe environment. Strengthening clinical skills, communication, critical thinking, and decision-making are the main goals to make students better able to provide patient care in the real world. The learning process reduces the risk for patients and promotes strength and confidence.

- *Simulation-based Learning: Just like the Real Thing*

Simulation strategies are increasingly important in global health, helping outreach providers to meet the practical and psychological challenges of providing care and training to local providers. Simulation has had a significant impact on reducing morbidity and mortality in healthcare settings around the world. This program has been effective in reducing infant mortality in developing and underdeveloped countries. (Gordon 2018).

According to Kneebone (2018), stimulation-based learning can strengthen the knowledge, skills and attitudes of healthcare workers while reducing patient morbidity. It is a useful tool for addressing ethical and practical problems and can be used to design structured learning experiences and assess collaborative skills and learning objectives. According to the US National Library of Medicine after reviewing many research studies, this type of immersion teaching provides learning "like the real thing." Simulation courses can be used in many different contexts.

In business areas, such as project management and customer service; the medical field, allowing for practical work in life-saving situations; the military and drone piloting, factory workers, commercial drivers, and so on(Learning Light 2020).

- *Healthcare Simulation: A Key to the Future of Medical Education*

Simulation for health education has grown significantly in rich areas but is limited in low-income countries. Along with increasing medical education and increasing number of universities, the growth of the market is being driven.

Public investment and public-private partnerships in healthcare will promote this expansion. In particular, China is building the Beijing Medical Center, which is said to be the largest medical center in the world with many facilities including simulation laboratories for advanced medical training.

According to Nielsen, Delp, & Zelik, 2022), adequate opportunities are provided by simulation for students and residents to hone their clinical skills in a risk-free setting. Unprecedented worldwide tragedies present chances to investigate simulation as a useful teaching aid.

Simulation-Based Medical Education it can improve self-confidence, medical knowledge, clinical skills, communication, critical thinking, team building, and leadership skills. In this way, trainers can provide a small amount of simulation experience during training in preparation for further exposure. Prepare residents for the opportunity to gain rare clinical experience.(Ali, Scherpbier, & Mutha, 2023).

- *Exploring the Role of Simulation in Enhancing Surgical Skills for Residents*

Academic and Research Institutes use many medical models for training health professionals and medical programs. The learning platform allows doctors to review and analyze their performance data. Instructors can communicate with their trainees from anywhere in the world, determine assignments, assess assignments, provide written feedback and issue certifications. Medical simulation is an important educational tool that allows students to apply theoretical knowledge in the workplace before working with real patients (Mordor Intelligence 2022).

According to Khan, and Mahmood (2023), it helps them identify knowledge gaps, gain skills, build confidence, and experience success. This approach is especially useful for surgical trainees, where simulation is increasingly used to teach technical skills.

Healthcare simulation is a strong educational instrument, and the main goal of this is to allow the students to do a practical application of what they have learned through theory. Before taking it to the patients, they will already have certain tools they have previously acquired during the practice. This makes it easier for students to identify the knowledge gaps that they must fill to improve patient outcomes. Moreover, simulation brings a wonderful opportunity for students to acquire skills, gain confidence, and experience success before working with real patients, especially when their clinical exposure is limited (Lafifi and Khan, 2023).

- *Your Health Care May Kill You: Medical Errors*

According to estimates, medical errors could result in 251,000 deaths annually, making them the third most common cause of death in the United States in 2013. Across specialties, qualification rates varied, with internal medicine showing 93.33% and surgery showing 73.33% in a study on simulation-based training. China is also becoming more interested in this global training approach, which aims to address problems like strained doctor-patient relationships and short clinical rotation times (Hickey 2018).

Medical errors are the third leading cause of death in the United States, accounting for up to 251,000 deaths annually, according to Makary and Daniel (2019). Compared to Canada, Australia, Germany, New Zealand, and the United Kingdom, the United States has significantly higher error rates, with less than 10% of errors being reported.

- *Effectiveness of Simulation-Based Training for Healthcare Teams' Human Factors*

While simulation is effective for technical skills, fewer than half of the programs include training for non-technical skills such as communication and teamwork, which are crucial as 70% of medical errors are related to communication. Unlike the U.S. and Europe, where simulation training includes these competencies, China needs to integrate patient safety more fully into the curriculum. This requires collaboration with risk management and patient safety committees (Zhao, Niu, Ji, & Sweet, 2017).

Simulation-based training for healthcare teams has advanced, showing clear benefits for technical skills. However, the potential of human factors training is less explored. This systematic review examines how simulation-based training impacts human factors skills among in-hospital healthcare teams (Rosen, Salas 2022).

With their potential to improve patient safety, simulation-based education (SBE) and human factors training are gaining momentum across the spectrum of medical education (McAleer & McDonald 2019).

- *Simulation-based Medical Education in Clinical Skills Laboratory*

Undergraduate medical education extensively uses Simulation-Based Medical Education (SBME), which uses cadavers, high-fidelity mannequins, standardized patients, screen-based simulations, and part-task trainers. Students felt that SBME was especially helpful for self-evaluation, skill development, critical thinking, teamwork, and decision-making, and they expressed a need for smaller class sizes and more training hours. (Cohen & Roth 2022).

According to Sewell and Walsh (2019), SBME adheres to active and adult learning theories, it is regarded as being superior to traditional medical education. It offers a secure setting for practice and error by providing debriefing, feedback, and competency evaluation. Learners acquire both technical and non-technical skills through full-environment simulations, such as self-awareness, leadership, teamwork, communication, and situation awareness.

Issenberg, McGaghie, Petrusa, Gordon, & Bradley (2019) stated that one of the most important steps in curriculum development is the introduction of simulation-based medical teaching and learning. Simulation is a generic term that refers to an artificial representation of a real-world process to achieve educational goals through experiential learning. Simulation-based medical education is defined as any educational activity that utilizes simulation aides to replicate clinical scenarios.

- *Clinical Simulation Laboratory*

Universities introduced simulation-based medical education with laboratories, high-fidelity mannequins, and related simulators. In 2023, the University of the Philippines (UP) launched a Clinical Simulation Laboratory in their College of Medicine, allowing students to gain real-time experiences and develop decision-making skills without risking patient safety. This lab was created to foster a culture of learning and uphold UP Manila's status as the country's health sciences center (Mendoza 2023).

Besides empowering medical students to gain real-time experiences as healthcare providers, the Clinical Simulation Library aims to help them develop analytical decision-making without the risk of possible harm to actual patients (University of the Philippines Manila 2022).

- *Simulation in Clinical Nursing Education*

In nursing education, clinical nurses rely on skilled instructors to improve their practical performance through simulation methods. Simulation provides a safe environment for practicing clinical skills with interactive scenarios. During the pandemic,

High-Fidelity Simulations (HFS) became crucial for ensuring nurses could effectively perform their duties. (Nifras 2022).

Simulation enables students to practice their clinical and decision-making skills for some significant issues they may face in their daily work. The protected environment and the sense of security enhance students' self-esteem and confidence, thus promoting learning. In this way, the gap between theory and practice is substantially reduced (Kowalski, Wright 2021).

In nursing science Kneebone, Nestel (2020) stated that simulation is used for teaching theoretical and clinical skills while focusing on the promotion of the critical thinking of students. Simulation enables students to work in an environment closely resembling that of a hospital and helps them gain healthcare and nursing experiences, even before they start working as professionals.

- *Pros and Cons of Simulation in Medical Education: A Review*

Simulation-based medical education (SBME) provides realistic and immersive scenarios that captivate students emotionally and improve their learning experience, offering a comprehensive approach to medical education. It helps students grasp abstract medical concepts like physiology and pharmacology by allowing them to practice and apply their knowledge practically. Studies demonstrating enhanced resuscitation and management skills among students and residents attest to SBME's unique efficacy for skill acquisition and maintenance. It increases student satisfaction and self-assurance in carrying out procedures, gets them ready for uncommon or dangerous situations, and protects patient safety by offering a safe practice environment. Additionally, SBME facilitates repeated practice and evaluation of clinical skills in addition to supporting standardized training. Additionally, meticulous examination and group instruction can enhance health professionals' leadership and coordination abilities in a variety (Krishnan et al 2017).

On the other hand, there are various problems with medical simulation. First off, compared to real-world patient interactions, simulations frequently fall short of accurately representing the complexity of human systems, which restricts the amount of information that can be learned. Negative learning outcomes can result from poorly designed simulations, such as students overlooking important physical signs that aren't depicted in the simulation or learning shortcuts that jeopardize patient safety and authentic communication abilities. In contrast to real-life situations, participants' attitudes toward simulators are different; some become extremely watchful, while others act carelessly because there aren't any genuine human stakes. Furthermore, many teaching hospitals cannot afford to purchase and maintain high-fidelity simulators. It is difficult to incorporate simulation into a medical curriculum that is already full because it needs specific time slots and infrastructure. Simulation-based teaching also struggles to accommodate individualized learning needs, and there is insufficient high-quality evidence supporting its effectiveness and validity (Lafifi 2017).

As a result of widespread reports of medical errors and injuries, worries about patient safety have led to substantial changes in medical education.

Medical simulation training has become a popular way to improve clinical competency. It has many benefits that lower healthcare costs while improving practitioner skills and patient safety. Medical professionals can practice clinical skills in a safe setting with technology that simulates real-life situations without endangering patients through simulation training. Although it can't completely replace learning from actual patients, simulation is a useful tool for learning from errors. Modern patient simulators are extremely sophisticated, with the ability to replicate physiological processes and react authentically to medical procedures. Senior Consultant at Singapore General Hospital Dr. Fatimah Lateef emphasized the value of the simulation in instructing moral decision-making and practical problem-solving in an immersive environment. Although simulation-based learning can be costly, it is a cost-effective method that enhances clinical skills, improves patient safety, and revolutionizes medical education (IDS Medical Systems 2018).

- *Analysis of Methods*

The reviewed literature highlights the effectiveness and limitations of simulation-based training (SBT) in nursing education. Traditional methods like lectures and hands-on practice have limitations, such as variability in clinical experiences and pressure without prior practice. SBT addresses these issues by providing a safe environment that simulates real-life scenarios, significantly enhancing students' clinical skills, communication, critical thinking, and decision-making. Globally, SBT has reduced morbidity and mortality, especially in neonatal care in low- and middle-income countries, and has been widely adopted across various fields including medicine, business, and the military.

However, challenges remain. Furthermore, while SBT is effective for technical skills, there is a need to incorporate training for non-technical skills like communication and teamwork to reduce medical errors. Future research should focus on developing cost-effective simulation tools, integrating non-technical skills training, and conducting long-term studies to assess the lasting impact of SBT on clinical performance and patient outcomes.

- *Chapter Summary*

Simulation-based training significantly enhances students' competence and confidence, especially in fields requiring practical experience. By offering realistic scenarios, immediate feedback, and opportunities for repeated practice, Simulation-Based Training helps bridge the gap between theoretical knowledge and real-world application. Overall, SBT is an effective educational tool that enhances student competence and confidence by providing a safe, controlled environment for skill development.

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CHAPTER THREE
METHODS

This chapter outlines the study's methodology, detailing the research approach and design, the tools and instruments used, the methods for data collection, sampling strategies, and ethical considerations.

- *Research Approach/Design*

This research is a descriptive study, considering the experiences of Level 2 nursing students at the Adventist Medical Center College - Iligan Inc. who have undergone simulation-based training. Specifically, the research describes and analyzes the competence and confidence levels of respondents in the area of IV termination, priming, and regulating skills. It provides an in-depth description of the student's SBT ability level and attitude by gathering information from data through surveys and skill assessments. The students' experiences are described concerning how SBT influences their learning process, which is valuable for the evaluation of this training method's effectiveness within nursing education.

Therefore, this research was set up as an experiential study, designating the actual use of SBT and its effects on the readiness of students toward clinical practice.

- *Research and Local Setting*

The research was conducted at the School of Nursing, Adventist Medical Center College - Iligan Inc., located in San Miguel, Iligan City, Philippines, focusing specifically on Level 2 nursing students exposed to subjects incorporating simulation-based training. Given that Level 2 nursing students are normally in the middle of their nursing studies, it is important to concentrate on them. At this point, they are moving on to more complicated and specialized nursing practice fields after having obtained the fundamental information and abilities. It is imperative that simulation-based training be incorporated into their curriculum since it helps students overcome the gap between academic knowledge and real-world application, thereby equipping them for the obstacles they will encounter in the workplace.

- *Respondents*

The respondents of the study were specifically selected from 40 Level 2 nursing students at Adventist Medical Center College- Iligan, Inc. This group was chosen because their curriculum included subjects that incorporated simulation-based training, which was central to the study's objectives. The decision to focus on Level 2 students was strategic, aiming to capture insights from those who had direct and relevant exposure to simulation, thereby ensuring the data collected was pertinent to evaluating the effectiveness of this training method. Because they did not receive any simulation-based training in their curriculum, Level 1 nursing students were not included in the study. The study's focus is on the value of simulation experiences that Level 1 is yet to experience. Including them would have added a variable that was not intended for the study, Similarly, Level 3 and 4 nursing students were intentionally excluded from the population because having Level 3 and 4 students, who are more advanced and experienced, participate in the validity testing, the researchers could benchmark the effectiveness of the training against a more seasoned cohort. This approach helped ensure that the training methods being evaluated were assessed rigorously.

- *Instruments/Tools*

The research utilized a structured questionnaire adopted from Florida State University, USA, and was administered through Google Forms as the primary scoring instrument. Part 1 Simulation is about the students' responses to simulation-based learning, the questions assess the realism, relevance, and effectiveness of the simulation according to the students. Part 2 Competence focuses on the students' self-assessment of their competence in clinical skills, the questions aimed to determine whether the students felt more competent and prepared and prepared to handle clinical situations after participating in the simulations. The last part of the survey, Part 3 Self Confidence is for the students to rate their confidence in performing various clinical skills during the simulation training. All these questions used a Likert scale to be measured, with 1 as Very Insufficient/ Very Dissatisfied / Strongly Disagree, 2 as Insufficient/ Dissatisfied/ Disagree, 3 as Sufficient/ Neutral, 4 as Good/ Satisfied/ Agree, and 5 as Very Good/ Very Satisfied/ Strongly Agree. To measure the student's proficiency level they are graded accordingly by their clinical instructor during their IV priming, regulating, and terminating. Scores that range from 96% to 100% are labeled as Excellent, 88% to 92% as Very Satisfactory, 80% to 84% as Satisfactory, and 76% below as Poor.

- *Ethical Considerations*

The research upheld ethical standards by informed consent from each participant, information confidentiality, and the aspect of voluntary involvement that permitted withdrawal at any time. Fair grading by clinical instructors was emphasized, and this study did not lead to or cause harm to the student in any way. Debriefing about participants' performance and the study findings occurred after data collection. In addition to these, approval from an ethics review board was sought and obtained to ensure adherence to ethical principles.

- *Data Gathering Procedures*

The data-gathering procedure for this research was conducted in a systematic and multi-phased approach to comprehensively investigate. It followed these phases:

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- In the initial phase, 40 students from L2 section D in the nursing department were informed that their return demonstration on IV priming, regulating, and terminating would be graded by their clinical instructor and observed for research purposes.
- The subsequent phase involved the distribution of questionnaires after the return demonstration and the collection of their graded skill proficiency. The participants were fairly graded by their clinical instructor according to their performances and were also given plenty of time to complete the questionnaires. The research team ensured that the participants were able to access the survey form, understand the questions, and provide assistance if needed.
- Lastly, the collected data were then prepared for analysis. This involved checking the collected data for missing information and potential errors before it is analyzed.

➢ *Data Analysis*

The data collected were analyzed to assess students' proficiency in IV priming, regulating, and terminating, as well as their attitudes, self-confidence, and perceived competence. Data analysis was performed with full care to assess the impact of simulation-based training on the competence and confidence of nursing students. First, data were collected using structured questionnaires and Return Demonstration scores. Then, these responses from questionnaires and performance scores obtained from simulation exercises were organized, coded, and entered into the statistical software for comprehensive analysis.

- *Descriptive Statistics.*

Calculation of Mean Scores and Standard Deviations: The mean scores and their standard deviations were calculated for each of the competency areas, such as IV priming, regulating, and terminating, to summarize the data. Such measures helped in determining the general levels of proficiency among the students. Proficiency Levels. Based on the computed mean scores, the students' performances were then categorized into levels like Excellent, Very Satisfactory, Satisfactory, and Poor. For example, the mean score of 65.125 with a standard deviation of 6.86 in IV priming was categorized as "Very Satisfactory.

- *Correlation Analysis.*

The correlation analysis tests the level of self-confidence with the level of competence of the students. The research sought to establish whether a rise in the level of self-confidence corresponded with an increase in clinical skills performance.

- *Reliability of Instruments.*

The instruments used in collecting data, which are questionnaires and Retdem scores, had the consistency and reliability checked through pilot testing and expert validation.

- *Conclusion of Data Analysis.*

This suggests that the simulation-based training enhanced both competence and confidence in the nursing skills of the students. The efficacy of this training is also proved with a positive feeling by the students at the end, that they were better prepared and much more confident in clinical skill performance in real life.

This analysis generally goes to show that simulation-based training in nursing education is one of the most efficient and practical methods of improving clinical competencies, boosting students' confidence in abilities, and promoting a positive attitude toward practice.

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CHAPTER FOUR
RESULTS

This chapter provides an overview of the intervention process, including a description of the program implemented and the data collected on the attainment of administrative, learning, and behavioral objectives.

The study involves 40 second-year nursing students at Adventist Medical Center College. The students were surveyed about their perceptions of the simulation and its impact on their competence, and self-confidence level as their skills were graded and evaluated during their Return Demonstration.

- *Part 1. Proficiency Levels of Nursing Students in IV Priming, Regulating, and Termination*

The first research question states, "What is the skill proficiency level of nursing students in IV termination, priming, and regulating as a realistic and evidence-based simulation training on clinical skills?" Table 1 shows the result and the description of the evaluated skills. On average, student nurses at Adventist Medical Center College have skill proficiency in IV priming, and the results showed that they have very satisfactory scores. This skill involves preparing the IV line, ensuring no air bubbles are present, and confirming the IV fluid is ready for administration. The finding suggests that students were well-prepared and competent at initiating IV lines effectively.

Following this, the nursing students, in terms of IV regulation, similarly fall within the very satisfactory range. This skill involves adjusting the flow rate of the IV fluid according to the prescribed rate, monitoring the infusion, and making necessary adjustments. This result suggests that the ability of the students to regulate and maintain IV flow reflects their strong understanding and capability in this area.

Finally, the third skill is IV termination, in which the students demonstrated very satisfactory proficiency. This skill includes safely and effectively discontinuing the IV line, ensuring no complications arise, and maintaining an aseptic technique throughout the process. The high score indicates that students are capable of properly ending IV infusions, reducing risks to patients.

Table 1 Skill Proficiency

Skills	Mean ± SD	Description
IV priming	65.125 ± 6.86	Very Satisfactory
IV regulating	64.825 ± 7.09	Very Satisfactory
IV terminating	65.725 ± 5.35	Very Satisfactory

Note: 68 - 71 (Excellent), 62.5 - 67.5 (very satisfactory), 56.8 - 58.8 (satisfactory), 54 (Poor)

- *Perception of the Stimulation*

Table 2 shows the overall result from the given questionnaires that measure the students' attitude towards the simulation, perceived competence, and confidence.

- *Part 2. Nursing Student's Attitude Toward the Simulation*

The second research question states "What is the student's attitude towards the simulation?" Table 2 indicates that the simulation was well-received, providing realistic, visual learning that was easier to understand than lectures.

Students appreciated the hands-on approach and felt it was an effective method for learning clinical procedures.

- *Part 3. Nursing Student's Confidence Level*

The third research question states, "What is the perceived confidence level of students in their participation in IV termination, priming, and regulating simulation training?". Table 2 shows that the simulation also positively impacted students' self-confidence. They felt less anxious about performing skills in a clinical setting, were confident in their knowledge, and believed they could handle tasks independently under supervision. The simulation was seen as an effective way to boost confidence in clinical practice.

- *Part 4. Nursing Student's Competence Level*

The last research question states, "What is the perceived competence level of students after participating in IV termination, priming, and regulating simulation training?" The data suggests that students felt more competent after simulation-based training. They reported improved hands-on skills, the ability to perform tasks independently, and better clinical decision-making abilities. The training helped them remember and be ready to apply what they learned.

Overall, the simulation training significantly impacted the student's learning experience, enhancing their competence and self-confidence in clinical settings. Students found the simulation realistic and beneficial, leading to better preparedness for clinical duties.

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Table 2 Perception of the Simulation

	Mean ± SD	***Description***
Simulation	4.04 ± .63	Strongly Agree
Competence	3.94 ± .55	Agree
Self Confidence	3.87 ± .61	Agree

Note: 4.2 - 5.0 (Strongly Agree), 3.4 - 4.19 (Agree), 2.6 - 3.39 (Neutral), 1.80 - 2.59 (Disagree), 1.0 - 1.79 (Strongly Disagree)

- *Attitude Towards the Simulation*

When contrasted with traditional learning approaches, students frequently perceive simulation-based training to be more dynamic and interesting. Their interest in the subject topic may grow as a result of the practical experience and real-world examples.

- *Nursing Students' Perception in Simulation*

Respondents' high levels of engagement and interest in simulation-based training show that it successfully grabs and holds their attention. Respondents strongly think that simulation-based training is extremely beneficial in improving their grasp and memory of the subject matter. Respondents are likely to feel more confident in their skills and knowledge after participating in simulation-based training, indicating that it effectively prepares them for real-world circumstances. The strong agreement indicates that respondents appreciate and value the learning experience, which is most likely owing to the participatory and practical aspect of simulations.

- *Nursing Student's Competence*

Students feel more competent and capable of applying their skills after participating in simulation-based training. Repetitive practice in a controlled atmosphere helps to strengthen their abilities. Encountering realistic circumstances in simulations makes students feel more prepared for similar situations in their professional lives, which contributes to their overall sense of readiness and confidence. The provision of fast feedback during simulations enables students to quickly fix their errors and progress, boosting their confidence in their abilities and knowledge.

- *Nursing Student's Self Confidence*

In the given questionnaire about the nursing students' self-confidence resulted to be 'agreed' that simulation-based training helps to increase their self-confidence in clinical settings. Simulations offer a realistic, hands-on practice environment that closely resembles clinical conditions. This makes students feel more prepared for real-life situations and boosts their confidence.

Nursing students can grasp clinical skills and procedures through repeated practice in simulations without risking the safety of real patients. This mastery contributes to a higher level of self-assurance. Simulation training promotes the improvement of critical thinking and decision-making abilities. As students improve their ability to appraise events and make informed decisions, they gain confidence in their clinical judgment.

- *Overall*

Simulation-based training is an effective instructional technique that provides several benefits to learners, notably in healthcare. It improves knowledge, skills, and confidence while also encouraging patient safety and effective learning. Despite possible constraints such as high initial expenditures and the requirement for technical support, Simulation-Based Training produces overwhelmingly good results, making it an important component of modern education and training programs.

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CHAPTER FIVE
DISCUSSION

This chapter presents the discussion, conclusion, and recommendations of the study. It also presents the limitations of the study.

This research shows how useful Simulation-based training in nursing student affects their ability to learn. Prior to this research, nursing education has been a focus on sight for extensive research these past decades, reflecting its growing importance as a pedagogical tool. There are several methods of teaching through simulation that enhance students' capacity and ability to develop their skills, increase critical thinking and decision making, competence, and confidence building, correct errors and recognize errors, and ensure patients' safety.

- *Summary of the Findings*

According to the findings, nursing students who were part of the simulation-based training significantly showed improvement in their clinical skills. This kind of real-life situation enabled them to rehearse and improve their skills within confined boundaries thereby mitigating pressures from actual clinical cases. Their high level of mastery can be accredited to repetitive simulations which makes their performance easier for them. Improved confidence in doing clinical duties was reported by students. The comments shared with them was very helpful since they were able to realize where they were strong and those areas that needed improvement after every simulation exercise.

The evaluated practices and reflections that made them more self-assured enabled them to deal with real-life clinical situations in a better way. This study revealed that simulation-based training had a positive correlation with the competence and confidence of nursing students. Competence and confidence were improved through practical experience coupled with feedback. This is in line with Bandura's Social Cognitive Theory, which stresses the significance of master experiences that improve self-efficacy.

Furthermore, incorporating simulation-based training into the nursing curricula can offer an enriched educational environment. Instructors can ensure increased readiness for real-world clinical contingencies by providing learners with risk-free opportunities for practice. According to this investigation, there should be a systematic standardized means to approach simulation to maximize its benefits.

- *Implications*

Simulation-based training in nursing education at Adventist Medical Center College significantly improved students' clinical skills and confidence levels. Through repeated simulations and constructive feedback, students enhanced their competence in handling diverse clinical scenarios. This approach not only bridges theory and practice effectively but also aligns with educational theories emphasizing practical experience. Standardizing simulation practices can further optimize its educational impact across nursing programs, ensuring graduates are well-prepared for real-world clinical challenges.

- *Strength of the Study*

The Importance of the study includes quantifying competence along with confidence and provides a more accurate description of the effects of simulation-based training on nursing students, using a Likert scale questionnaire allows for measurable evidence that this type of training improves competence and confidence based on the quantitative data collected. Methods replicating infusion-related simulation learning environments can emulate real-world clinical settings, therefore the applicability of findings to improve nursing education curricula and instructional strategies is direct and highly applicable to educational practice.

- *Limitations.*

Simulation-based training in nursing education at Adventist Medical Center College proved beneficial by enhancing students' clinical skills and confidence levels. However, This quantitative research has some limitations. First, the students that were evaluated were limited to one section, which does not cover all the students' opinions and the effects of the simulation among Adventist Medical Center College students. Second, there are no following evaluations of skills in the hospital setting after the return demonstration. Further studies may consider a longer timeframe (i.e., 2 weeks) to determine the students' application of the learned skill. Challenges include resource intensiveness, variability in real-life situations, and the need to ensure effective skill transfer to real clinical settings. Despite these limitations, ongoing improvements in simulation design and instructor training can optimize its effectiveness in preparing nurses for professional practice.

➢ *Recommendations*

Based on the conclusions given, the following recommendations are listed below:

- Nursing Students. Nursing students should recognize the importance of simulation-based training because it allows them to learn safely, increase skill performance, and strengthen clinical reasoning and decision-making skills.
- Nursing Education. The nursing school should emphasize the importance of accomplishing learning outcomes and promoting students' clinical competence, including areas where simulation is performed.
- Nursing Practice. Through the use of simulation, there are methods capable of reproducing actual clinical scenarios for therapeutic and educational purposes. The setting in which the simulation is carried out encourages learning, and with the practice of a skill, this ability becomes completely understood and clear. This guarantees that nurses fulfill and satisfy all the responsibilities to clients and patients.
- Future Researchers. One limitation of the present study is that only a few respondents were surveyed to represent expertise and abilities and show how well they perceive the educational experience as a true representation of real-life scenarios. As a result, a larger sample size is recommended for future investigations. Other confounding factors should be examined further.
- Healthcare Settings. Simulation helps to address any limitations related to the clinical setting based on scenarios, where learning becomes interactive.
- Patients. The findings of this study will form the basis for further studies to help patients feel safe that care provided by future nurses was cultivated through thorough skill-enhancing simulation-based training.

➢ *Conclusion*

This research highlights that simulation-based training enhances student competency and confidence. Simulation training serves to mimic the real-world context in a safe and supportive environment so learners can practice without fear of making errors in non-controllable settings in clinical practice. Institutions must ensure that simulation-based education is integrated into the curriculum, given appropriate resources, and involves ongoing faculty development to deliver the most from such educational interventions. With the changes in nursing education occurring every day, the use of simulators is key to the education process to better prepare today's college graduates to become competent healthcare professionals of tomorrow.

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APPENDIX A

Adventist Medical Center College

COLLEGE OF NURSING

Andres Bonifacio Avenue Brgy. San Miguel, Iligan City

Dear Dean Almira Nebres,

We, the third-year nursing students of Adventist Medical Center College, Iligan City are currently working on a study entitled, **"EFFECTIVENESS OF SIMULATION-BASED TRAINING IN TERMS OF THEIR COMPETENCE AND CONFIDENCE"** in partial fulfillment of the requirements of the degree Bachelor of Science in Nursing.

As part of our paper's data-gathering procedure, we would like to conduct an activity and survey with your permission. The purpose of my research is to investigate the effectiveness of incorporating simulation techniques in teaching selected nursing skills. The study aims to explore the impact of simulation on skill acquisition, confidence levels, and overall preparedness of nursing students for real-world clinical practice. The research will employ an action research design, incorporating quantitative data collection methods. Participants will include nursing students from the 2nd-year section D, and the study will be conducted over 30 minutes to 1 hour. The data collected will be analyzed providing valuable insights into the impact of simulation on nursing education.

I kindly request your approval to conduct this research study within the premises of the School of Nursing. I assure you that all ethical considerations, including confidentiality and informed consent, will be strictly adhered to throughout the research process. Additionally, any disruptions to regular academic activities will be minimized, and the study will be conducted with the utmost professionalism and respect for the institution's policies.

Sincerely,

Diolata, Princess Glydel M. (09454391553)

Jariol, Kristine Paula V. (09168658056)

Encabo, Jeh Jireh Lyn N. (09701728424)

Noted:

Shella G. Dello, RN, MAN
Research Adviser

APPENDIX B

➢ *Questionnaire*

- *Effectiveness of Simulation-Based Training in Clinical Competence and Confidence*

✓ Name (optional):
✓ Purpose:

✓ Evaluates the effectiveness of simulation-based training in terms of self-confidence, knowledge and skills in level 2 selected nursing students.
✓ Benefit to enhance self-confidence, knowledge and skills towards simulation-based training.

➢ *Directions:*

Read each statement and check the number that best describes your perception. Using a 5- point Likert scale. A type of psychometric response scale in which responders specify their level of agreement to the statement typically:

Very Insufficient / Very Dissatisfied / Strongly Disagree - 1

Insufficient / Dissatisfied /Disagree		- 2
Sufficient / Neutral	- 3	
Good / Satisfied /Agree	- 4	
Very Good / Very Satisfied / Strongly Agree		- 5

Question	5	4	3	2	1
Part 1. Simulation					
Simulation provided a unique opportunity to learn and practice.					
The simulation environment was realistic and resembled a real-life clinical setting.					
Simulation provides enough visual learning of the procedures.					
Found simulation-based training easier to understand than lectures.					
Enjoyed how the instructor taught the skill using simulation.					
Satisfied with the learning from simulation-based training.					
Simulation is easy to understand and implement.					
Simulation is an effective method to learn in a clinical setting.					
Simulation taught real-life situations.					
Simulation-based training features are necessary to meet learning outcomes.					
PART II. Competence					
Learned more through hands-on training.					
Able to perform priming without assistance and instructions.					
Able to remember and apply what was learned in simulation class.					
Simulation-based training accurately represents knowledge and skills.					
Knowledgeable enough to start IV infusion under Clinical Instructor's (CI) order.					
Enhanced clinical thinking and decision-making abilities through simulation-based training.					
Can give the correct rationale about the executed procedure.					
Able to complete tasks under CI's supervision.					
PART III. Self Confidence					
Confident in the knowledge gained from simulation training to perform skills in a clinical setting.					
Does not feel anxious about performing the skills learned in a clinical environment.					
Confident in answering patients' questions about procedures.					
Simulation-based training boosts self-confidence in performing procedures.					
School simulation is effective in boosting student confidence in a clinical setting.					
Confident in completing assigned tasks.					
Confident in independently performing skills (priming, regulating IV, terminating) under CI's supervision.					
Does not feel anxious about performing the skills learned in a clinical environment.					

Adopted from: Florida State University, U.S.A

APPENDIX C

- *Journal Article*
  Effectiveness of Simulation-Based Training in Terms of their Competence and Confidence

Jeh Jireh Lyn N. Encabo[1], Princess Glydel M. Diolata[2], Kristine Paula V. Jariol[3]
[1]Adventist Medical Center College

ABSTRACT

- *Background of the Study:*
Simulation-based training is a very new approach to nursing education, significantly enhancing student performance compared to the traditional style of teaching and learning. Several studies have shown that SBT improves critical thinking, cooperation, and clinical skills.

- *Purpose:*
The study aimed to evaluate how realistic and evidence-based simulation training on clinical skills impacts nursing students' competence and confidence. The effects and experiences that nursing students at Adventist Medical Center College.

- *Methods:*
This research used a descriptive approach to the effectiveness of simulation-based training (SBT) for 40 Level 2 nursing students, assessing their skill proficiency, attitudes toward SBT, and perceived confidence and competence. The data collected will be analyzed to determine the impact of SBT on their clinical skills and confidence levels.

- *Result:*
Students showed better skills in IV termination, priming, and regulating after the training and had positive views on simulation-based training and found it helpful. In terms of their confidence level, they felt more confident in their clinical skills after the training. At the same time, the students became more competent and prepared to perform IV-related tasks in a clinical setting.

- *Conclusion:*
The research highlights that simulation-based training boosts competence and confidence among students by replicating real-life scenarios in a safe environment. To maximize the benefits, institutions should integrate simulation into the curriculum, allocate necessary resources, and offer continuous faculty development.

Keywords:- *Simulation-Based Training, Nursing Education, Clinical Skills, Student Confidence, Competence.*

INTRODUCTION

Simulation-based training (SBT) has proven to significantly enhance nursing education by improving clinical skills, critical thinking, and cooperation compared to traditional methods. Research by Albarracin and Santiago (2016) and Issenberg et al. (2005) shows substantial performance improvements with SBT, while Rosario (2018) highlights its benefits in critical thinking and teamwork. Despite initial setup costs, Bautista and Lopez (2019) note that SBT is cost-effective in the long run due to reduced clinical errors and training time. The Commission on Higher Education of the Philippines underscores SBT's role in increasing employability and standardizing education quality. SBT offers a risk-free learning environment, encourages continuous learning through immediate feedback, and enhances decision-making and communication skills. Studies in the Philippines, such as those at the University of the Philippines Manila and the University of Santo Tomas, demonstrate the effectiveness of SBT in improving clinical competency and confidence among nursing students. While SBT presents clear short-term benefits, further research is needed on its long-term impact on clinical practice and patient outcomes.

METHODS

- *Research Design:*
The research is a descriptive study, considering the experiences of Level 2 nursing students at the Adventist Medical Center College - Iligan Inc. who have undergone simulation-based training. Specifically, the research describes and analyzes the competence and confidence levels of respondents in the area of IV termination, priming, and regulating skills. It provides an in-depth description of the student's SBT ability level and attitude by gathering information from data through surveys and skill assessments. The students' experiences are described concerning how SBT influences their learning process, which is valuable for the evaluation of this training method's effectiveness within nursing education.

➢ *Sampling Plan:*

The research involved specifically selecting 40 Level 2 nursing students from Adventist Medical Center College - Iligan Inc. These students were chosen because their curriculum included subjects that incorporated simulation-based training, which was central to the study's objectives. The decision to focus on Level 2 students was strategic, aiming to capture insights from those who had direct and relevant exposure to simulation. Level 1 nursing students were excluded because they had not yet experienced simulation-based training, and including them would have introduced a variable not intended for the study. Similarly, Level 3 and 4 nursing students were excluded to ensure that the data collected were pertinent to evaluating the effectiveness of the training method without the influence of more advanced clinical experience.

➢ *Data Measurement and Collection:*

The data for this research were collected using a structured questionnaire adopted from Florida State University, USA, and administered through Google Forms. The questionnaire was divided into three parts:

- ***Simulation:*** This section assessed students' responses to simulation-based learning, evaluating the realism, relevance, and effectiveness of the simulations.
- ***Competence***: This part focused on students' self-assessment of their clinical skills competence, determining if they felt more prepared to handle clinical situations after the simulations.
- ***Self-Confidence****:* This section allowed students to rate their confidence in performing various clinical skills during the simulation training.

All questions used a Likert scale for responses, ranging from 1 (Very Insufficient/Very Dissatisfied/Strongly Disagree) to 5 (Very Good/Very Satisfied/Strongly Agree).

The skill proficiency level was collected from the clinical instructors' grading sheet from their return demonstration on IV priming, regulating, and terminating.

➢ *Data Gathering followed a Systematic, Multi-Phased Approach:*

- ***Initial Phase****:* Informed 40 Level 2 nursing students that their return demonstration on IV priming, regulating, and terminating would be graded by their clinical instructor and observed for research purposes.
- ***Questionnaire Distribution****:* After the return demonstration, questionnaires were distributed and collected along with their graded skill proficiency. Students were given ample time to complete the questionnaires with assistance provided as needed.
- ***Data Preparation****:* Collected data were checked for missing information and potential errors before analysis.

- *Data Analysis Methods:*

The collected data were analyzed to evaluate the student's proficiency in IV priming, regulating, and terminating, as well as their attitudes, self-confidence, and perceived competence. The process began with data collection through structured questionnaires and return demonstration scores. The responses were then organized, coded, and entered into statistical software for comprehensive analysis.

Descriptive statistics, including the calculation of mean scores and standard deviations, were used to summarize the data for each competency area. These measures helped determine the general levels of proficiency among the students. Based on the computed mean scores, student performances were categorized into levels such as Excellent, Very Satisfactory, Satisfactory, and Poor.

Correlation analysis was conducted to test the relationship between self-confidence and competence levels, aiming to establish whether increased self-confidence corresponded with improved clinical skills performance. The reliability of the instruments, which included questionnaires and return demonstration scores, was ensured through pilot testing and expert validation.

Overall, the data analysis suggested that simulation-based training significantly enhanced both competence and confidence in nursing skills among the students, demonstrating the efficacy of this training method in preparing students for clinical practice.

RESULTS

Table 1 Skill Proficiency

Skills	Mean ± SD	Description
IV priming	65.125 ± 6.86	Very Satisfactory
IV regulating	64.825 ± 7.09	Very Satisfactory
IV terminating	65.725 ± 5.35	Very Satisfactory

Note: 68 - 71 (Excellent), 62.5 - 67.5 (very satisfactory), 56.8 - 58.8 (satisfactory), 54 (Poor)

Skill Proficiency: The first research question states, "What is the skill proficiency level of nursing students in IV termination, priming, and regulating as a realistic and evidence-based simulation training on clinical skills? "Table 1 shows the result and the description of the evaluated skills. On average, student nurses at Adventist Medical Center College have skill proficiency in IV priming, and the results showed that they have very satisfactory scores.

This skill involves preparing the IV line, ensuring no air bubbles are present, and confirming the IV fluid is ready for administration. The finding suggests that students were well-prepared and competent at initiating IV lines effectively.

Following this, the nursing students, in terms of IV regulation, similarly fall within the very satisfactory range. This skill involves adjusting the flow rate of the IV fluid according to the prescribed rate, monitoring the infusion, and making necessary adjustments. This result suggests that the ability of the students to regulate and maintain IV flow reflects their strong understanding and capability in this area.

Finally, the third skill is IV termination, in which the students demonstrated very satisfactory proficiency. This skill includes safely and effectively discontinuing the IV line, ensuring no complications arise, and maintaining an aseptic technique throughout the process.

The high score indicates that students are capable of properly ending IV infusions, reducing risks to patients.

Table 2 Perception of the Simulation

	Mean ± SD	Description
Simulation	4.04 ± .63	Strongly Agree
Competence	3.94 ± .55	Agree
Self Confidence	3.87 ± .61	Agree

Note: 4.2 - 5.0 (Strongly Agree), 3.4 - 4.19 (Agree), 2.6 - 3.39 (Neutral), 1.80 - 2.59 (Disagree), 1.0 - 1.79 (Strongly Disagree)

- *Attitude towards the Simulation:*

The second research question states "What is the student's attitude towards the simulation?" Table 2 indicates that the simulation was well-received, providing realistic, visual learning that was easier to understand than lectures. Students appreciated the hands-on approach and felt it was an effective method for learning clinical procedures.

- *Perceived Competence:*

The third research question states "What is the perceived confidence level of students in their participation in IV termination, priming, and regulating simulation training?". Table 2 shows that the simulation also positively impacted students' self-confidence. They felt less anxious about performing skills in a clinical setting, were confident in their knowledge, and believed they could handle tasks independently under supervision. The simulation was seen as an effective way to boost confidence in clinical practice.

- *Perceived Confidence:*

The last research question states "What is the perceived competence level of students after participating in IV termination, priming, and regulating simulation training?" The data suggests that students felt more competent after simulation-based training. They reported improved hands-on skills, the ability to perform tasks independently, and better clinical decision-making abilities. The training helped them remember and be ready to apply what they learned.

DISCUSSION

- *Summary of the Findings:*

According to the findings, nursing students who were part of the simulation-based training significantly showed improvement in their clinical skills. This kind of real-life situation enabled them to rehearse and improve their skills within confined boundaries thereby mitigating pressures from actual clinical cases. Their high level of mastery can be accredited to repetitive simulations which makes their performance easier for them. Students reported improved confidence in doing clinical

duties. The comments shared with them were very helpful since they were able to realize where they were strong and those areas that needed improvement after every simulation exercise.

The evaluated practices and reflections that made them more self-assured enabled them to deal with real-life clinical situations in a better way.

This study revealed that simulation-based training had a positive correlation with the competence and confidence of nursing students. Competence and confidence were improved through practical experience coupled with feedback.

- *Implication of Findings:*

Simulation-based training in nursing education at Adventist Medical Center College significantly improved students' clinical skills and confidence levels. Through repeated simulations and constructive feedback, students enhanced their competence in handling diverse clinical scenarios. This approach not only bridges theory and practice effectively but also aligns with educational theories emphasizing practical experience. Standardizing simulation practices can further optimize its educational impact across nursing programs, ensuring graduates are well-prepared for real-world clinical challenges.

- *Limitations and Recommendations:*

The students that were evaluated were limited to one section, which does not cover all the students' opinions and the effects of the simulation among Adventist Medical Center College students. Second, there are no following evaluations of skills in the hospital setting after the return demonstration. Further studies may consider a longer timeframe (i.e., 2 weeks) to determine the students' application of the learned skill. Challenges include resource intensiveness, variability in real-life situations, and the need to ensure effective skill transfer to real clinical settings. The nursing school should emphasize the importance of accomplishing learning outcomes and promoting students' clinical competence, including areas where simulation is performed.

CONCLUSIONS

The research shows that simulation-based training improves students' skills and confidence. It provides a safe space to practice real-world scenarios without the risk of making mistakes in actual clinical settings. Schools need to make sure simulation training is part of the curriculum, well-supported with resources, and that faculty are continually trained to maximize its benefits. As nursing education evolves, simulators are becoming essential tools in the learning process.