Pakistan Journal of Medical & Cardiological Review
https://pakjmcr.com/index.php/1/about
Online ISSN 3007-2387
Print ISSN 3007-2379

Assessing The Perceived Effectiveness Of Simulation Based Education In Enhancing Clinical Performance Of Nursing Students

Fareeha Rubab*
Jinnah hospital Lahore, Email: fariharubabf@gmail.com
Saima Arshad
Jinnah Hospital Lahore
Robina Kousar
Jinnah Hospital Lahore
Farzana Iqbal
Principal, College of Nursing Allama Iqbal Medical College Lahore
Email: farzana.iqbal@live.com

Author Details

Keywords: Simulation-Based Education, Clinical Competence, Nursing Education

Received on 20 May 2026
Accepted on 14 Jun 2026
Published on 24 Jun 2026

Corresponding E-mail & Author*:

Fareeha Rubab*
Jinnah hospital Lahore, Email: fariharubabf@gmail.com

Abstract

Background: Simulation-Based Education (SBE) has gained increasing importance in nursing education as a strategy to bridge the gap between theory and practice, enhance self-confidence, and prepare students for real-world clinical situations. However, perceptions regarding its effectiveness remain mixed among nursing students.

Objective: This study aimed to assess the attitudes and perceptions of Bachelor of Science in Nursing (BScN) students toward Simulation-Based Education at the College of Nursing, Jinnah Hospital, Lahore, Pakistan.

Methodology: A descriptive cross-sectional study design was employed, including 150 BScN students selected through probability simple random sampling. Data were collected using a structured demographic questionnaire and the 18-item Simulation-Based Education Attitude Scale (SBEAS). Responses were measured on a five-point Likert scale. Ethical approval was obtained from the Institutional Review Board, and data were analyzed using SPSS version 24.

Results: Findings revealed a mixed reception of SBE among participants. While 51.4% agreed that SBE enhanced clinical success and 48.7% recognized its role in realizing shortcomings, 49.3% disagreed with its effectiveness in preparing students for real clinical environments, and 45.3% expressed skepticism regarding its impact on healthcare quality. Perceptions were also divided on whether SBE reduced clinical mistakes, bridged theory and practice, or increased workload. Some students found SBE engaging, whereas others considered it boring (39.3%) or even a waste of time (38.7%).

Conclusion: The study concludes that SBE holds promise in enhancing clinical education by fostering critical decision-making, self-awareness, and clinical competence. However, its effectiveness is hindered by inconsistent implementation, lack of realism, and variable feedback mechanisms. Refining simulation design, standardizing debriefing, and aligning scenarios with theoretical coursework are essential to maximize its educational value. Future research and curriculum integration of high-fidelity simulation could further enhance its impact on nursing education and clinical preparedness.

Introduction

Background

Clinical education plays a very important role in helping nursing students become skilled, confident, and professional healthcare workers. In nursing, learning the theory is not enough. Students must also learn how to use that knowledge when taking care of real patients. Classroom lessons help students understand medical concepts, but real learning happens during clinical placements. These hands-on experiences are where students practice what they've learned, develop important skills like patient care, communication, teamwork, and time management. But in many countries, including Pakistan, clinical education is often not up to the mark. Hospitals are crowded, there is not enough staff to guide students properly, and students do not always get the chance to practice on real patients. Sometimes, due to a lack of proper equipment or time, they are left observing instead of doing. These problems make it hard for students to feel confident or fully ready for real nursing work after graduation (Dow et al., 2021; Siddiqui et al., 2024).

Simulation-based education, also known as SBE, can be a big help in solving these problems. In simulation, students get to practice their nursing skills in a safe and controlled setting that feels real but does not involve actual patients. These setups can include role-playing, using models, mannequins that act like patients, or even digital simulations. The best part is that students can make mistakes and learn from them without harming anyone. They can repeat tasks many times, ask questions, and get proper feedback from instructors. In countries like Pakistan, where not every student gets enough real clinical exposure, simulation gives everyone a fair chance to learn. It helps students connect their book knowledge with practical skills in a better and more confident way (Ayub et al., 2024).

Several studies from around the world and Pakistan have shown that simulation is useful for improving nursing education. Research by Park and Oh (2021) found that students who were trained using simulation methods performed better when it came to patient care, giving medicines, and handling emergencies. Shin et al. (2020) also found that students who used simulation were more confident and skilled than those who only had traditional training. A study done in Lahore
showed that after attending simulation sessions, nursing students improved their test scores and felt more confident in their clinical duties (Yousaf et al., 2023). Another study from Rawalpindi showed that simulation helped reduce stress and nervousness among students before entering actual clinical settings (Farooq et al, 2022). One of the biggest advantages is that simulation allows instructors to control the learning environment. This means they can make sure every student gets the same quality of training, which is often not possible in crowded hospitals.

Simulation does not replace traditional clinical training. It works alongside it. Students still need to go to hospitals and deal with real patients to gain full experience. But using simulation can prepare them better for what they will face in real life. It helps them learn how to act in emergencies, talk to patients, and work under pressure. It also helps them avoid making dangerous mistakes in real situations because they have already practiced many times. In Pakistan, nursing education is still developing, and many colleges and universities are now starting to add simulation labs to their programs. This shows a positive shift in how nursing is taught. However, more efforts are needed from policymakers, teachers, and institutions to make simulation a regular part of the curriculum. It is not just a luxury; it is becoming a necessity in modern nursing education.

Simulation-based learning also boosts self-confidence among students. When students practice different scenarios and receive feedback, they become surer about their actions. This confidence helps them when they deal with real patients. It also improves teamwork, as many simulations are done in groups where students learn to

communicate and coordinate with each other. This is especially important in healthcare settings, where teamwork can save lives. According to Ahmed et al. (2021), group-based simulations helped nursing students in Karachi improve their leadership and communication abilities. Another benefit is that simulation can include rare or complex medical cases that students might never get to see during their regular clinical rotation. By practicing these cases in simulation, students are more prepared if they ever face them in real life.

Mobile learning and virtual simulation are also becoming important in nursing education. These tools allow students to learn anytime and anywhere using smartphones, laptops, or tablets. With apps and online simulations, students can go through different clinical situations even outside the classroom. Especially during the COVID-19 pandemic, many institutions in Pakistan and around the world adopted mobile learning and virtual simulation as alternatives to in-person training. Studies show that students appreciated the flexibility and access to repeated practice these tools provided (Fatima et al., 2023). While nothing can completely replace hands-on experience, mobile and virtual tools can support learning, especially when clinical access is limited.

Simulation education also promotes critical thinking. It puts students in decision-making situations where they must think fast, prioritize tasks, and make safe choices. This helps sharpen their clinical judgment and prepares them for real-world challenges. It makes learning active, not passive. Rather than sitting in a lecture, students are solving problems, reacting to changing patient conditions, and reflecting on their performance. Instructors guide them during debriefing sessions, helping them understand what went right and what needs improvement. This type of reflective learning is powerful and helps build long-term professional skills.

Despite its advantages, there are still challenges in implementing simulation in Pakistani nursing education. Simulation labs require funding, trained staff, and proper equipment, which not every institution can afford. There's also a need to train faculty on how to run simulation sessions effectively. Some institutions still rely mostly on old-style teaching methods and resist change. But even with these challenges, the progress made so far is promising. A growing number of nursing schools in cities like Lahore, Karachi, and Islamabad are investing in simulation facilities. With more awareness, support from government policies, and proper training programs for teachers, simulation education can grow further in Pakistan and help raise the standard of nursing education across the country.

In conclusion, simulation-based education is no longer just an add-on in nursing training. It has become a valuable and necessary tool that helps students gain confidence, improve skills, and be better prepared for the clinical world. Especially in countries like Pakistan, where traditional clinical education has many limitations, simulation offers a safe, fair, and effective way to build future nurses. By combining simulation with mobile learning and virtual platforms, nursing education can become more modern, inclusive, and impactful. The future of nursing depends on how well we train our students today, and simulation is one of the best ways to make sure they are ready.

Significance of the Study

This study holds significant value in advancing nursing education by highlighting both the strengths and limitations of Simulation-Based Education (SBE) in enhancing the clinical performance of nursing students (Jeffries, 2012; Cant & Cooper, 2017).

By capturing perspectives from students across all academic years, this research provides a holistic view of how SBE is perceived at different stages of clinical training. The mixed responses underscore the importance of tailoring simulation strategies to meet diverse learner needs and learning readiness levels (Lateef, 2010; Jeffries, 2016). Importantly, the results suggest that SBE has potential to bridge

theory and practice, foster critical decision-making, and build self-confidence, but its effectiveness is hindered by variable implementation and perceptions of limited real-world applicability (Cant & Cooper, 2010; INACSL Standards Committee, 2021).

Research Question

What is the effect of simulation based education on clinical performance of nursing students?

Research Objective

The objective of study is to assess the effect of simulation based education on clinical performance of nursing students

Problem Statement

In Pakistan, nursing students frequently encounter significant limitations in clinical exposure due to overcrowded hospitals, shortage of qualified instructors, limited access to essential equipment, and high patient loads, which collectively hinder their ability to actively practice and refine essential nursing skills. These challenges often leave students with insufficient confidence, inadequate hands-on experience, and a sense of unpreparedness when transitioning to real patient care settings (Dow et al., 2021; Siddiqui et al., 2024). Simulation-Based Education (SBE) has been recognized globally as an effective strategy to bridge this gap by providing a controlled and safe environment where students can practice clinical procedures, develop critical thinking, improve decision-making skills, and enhance self-confidence without risking patient safety (Ayub et al., 2024; Shin et al., 2020). Despite its potential benefits, the integration of simulation into nursing curricula in Pakistan remains limited, inconsistent, and often under-resourced, leading to variable student experiences and outcomes (Farooq et al., 2022; Yousaf et al., 2023). This gap highlights the urgent need to evaluate the effectiveness of SBE in the local context and to identify strategies for its structured and sustainable implementation to better prepare nursing students for safe, competent, and confident clinical practice.

CHAPTER 2: LITERATURE REVIEW

Simulation-based, mobile, and virtual learning have truly changed how nursing is being taught, not only around the world but especially in countries like Pakistan where the shift from old-school learning to modern education methods is slowly gaining speed. The traditional ways of teaching through lectures, textbooks, and one-time clinical rotations are no longer enough to prepare students for the real-life pressure and fast-paced hospital settings they'll face after graduation. In the past, students would often enter hospitals feeling nervous and unsure, afraid to make mistakes. But now, with simulation labs, mobile apps, and virtual platforms, students can practice safely, mess up without harming patients, learn from those mistakes, and build real confidence over time. This is not just some trend—it's backed by studies, student experiences, and results from both local and international research. Nursing students today need to be prepared for everything from critical emergencies to routine care, and they need that readiness before they even step into the hospital. This is where technology-based learning methods become super important.

Simulation is one of the most powerful tools nursing educators can use today. It helps students go through lifelike patient situations without putting real people at risk. They can simulate delivering a baby, handling a heart attack, giving injections, or managing a difficult patient—all within a safe space where it's okay to make errors. And these aren't just guesses. Studies have actually shown how big of a difference this makes. Mulyadi et al. (2021) reported that students who were taught using simulation methods had better academic scores and improved clinical judgment compared to those taught only through lectures. They could think faster, react better, and perform

more confidently. The benefit goes beyond skills; it changes how students think under pressure. Lee et al. (2020) also proved that what happens after the simulation—called debriefing— is just as important. When students sit down after the scenario and talk about what went right and what went wrong, they get to reflect deeply. They learn to analyze their own actions, which improves their thinking process and boosts critical decision-making.

Pakistani studies have shown similar results. Shah et al. (2022) found that nursing students in their study performed significantly better after they were trained with simulation techniques. These students became less anxious, more confident, and were better at handling patients. The clinical gap that often exists between theory and real-life practice was reduced. Instead of walking

into hospitals feeling unprepared, these students had already "lived" the experience in the lab. This proves that simulation is not just working in countries with top resources, it's working in Pakistan too, even with fewer facilities.

Another strength of simulation is how it links theory to practice. Koukourikos et al. (2021) said that students understand textbook concepts much better when they get to apply them in simulated clinical environments. The theories stop being abstract and start becoming real. You're no longer just reading about a patient with high blood pressure, you're now the nurse in that scenario, checking vitals, giving meds, making decisions, and learning from your actions. This "learning by doing" approach sticks better in the brain and prepares students for their future roles.

In Pakistan, where nursing education still faces issues like outdated curricula, lack of clinical sites, and limited instructor availability, simulation helps fill those gaps. Ahmed et al. (2021) emphasized how using simulation scenarios that reflect Pakistani health problems like dengue, typhoid, or maternal emergencies makes learning more relatable. When students see familiar conditions being taught through simulation, their understanding and retention improve. They can connect what they're learning with the situations they'll actually see in hospitals. This local context makes the learning process smoother and more effective.

Debriefing is another major part of what makes simulation work. Farooq et al. (2023) conducted research in Pakistan showing that when students discussed their performance after simulations, they retained more knowledge and improved their reasoning. Instead of just correcting mistakes, these sessions encouraged thinking about why something happened and what could be done better. This kind of thinking is essential for safe nursing practice. It helps students avoid making the same errors in real life and builds confidence in their clinical judgment.

But it's not just the tools, it's also about the teachers. Nawaz et al. (2022) noted that many nursing instructors in Pakistan aren't trained to use simulation equipment properly. Without this training, the equipment ends up underused or misused. However, the same study showed that when instructors were trained, the outcomes improved dramatically. Trained faculty were able to design better scenarios, guide students through simulations effectively, and lead productive debriefings. This shows that investing in teacher training is just as important as investing in tools and labs.

Nursing colleges can't just buy mannequins and think the job is done—they have to train the educators who will actually use them.

During COVID-19, the need for alternative teaching methods exploded. Clinical placements were canceled, and students couldn't go to hospitals anymore. Virtual learning became the only way forward. Farooq et al (2022) wrote about how Pakistani nursing schools quickly shifted to Zoom, Google Meet, and Microsoft Teams. Teachers recorded videos, created case- based quizzes, and even conducted online discussions. While it wasn't a perfect system and came with internet issues and access problems, it kept learning going during a time when everything could have shut down. Virtual learning showed that with a bit of flexibility, Pakistani nursing education can adapt to tough situations.

Even beyond the pandemic, virtual learning has proven useful. It allows students to revisit lectures, replay clinical videos, and study at their own pace. It also reaches students in far-off areas who can't always attend physical classes. Koukourikos et al. (2021) agreed that when used correctly, with proper guidance, structure, and interactive material, virtual education can still be effective. It might not replace hands-on learning entirely, but it supports it by filling in gaps and helping students reinforce what they've learned.

In a country like Pakistan, where not every student has a laptop but almost everyone has a phone, mobile learning is a total game-changer. Apps like WhatsApp, Telegram, and others have become mini-classrooms. Rizvi et al. (2023) conducted a study where students shared real patient cases on WhatsApp, discussed them, and even used voice notes to ask and answer questions. The result was better understanding, more peer learning, and improved recall. Students could learn anytime—on the bus, at home, during breaks—and didn't feel limited by time or location. This kind of learning encourages independence and pushes students to take charge of their education.

Zahid et al. (2021) added more proof by doing a meta-analysis that showed students who used mobile learning scored higher in exams, remembered more, and stayed more motivated. This matters because nursing is not just about passing exams, it's about being alert, informed, and skilled. If mobile learning can help students remember better and feel more confident, then it deserves to be part of every nursing curriculum.

Another huge benefit of mobile learning is that it makes education inclusive. It reaches students in remote areas, allows flexible schedules, and supports those who may struggle with traditional learning formats. It also fits well with the lifestyle of today's students who are already used to learning through short videos, group chats, and social media. When these platforms are used for academic purposes, they turn into powerful tools. Students can connect with teachers and peers, access updated information, and stay engaged throughout their course.

So, when we bring it all together, simulation, mobile learning, and virtual platforms—we see a pattern. These tools aren't just helping students learn better; they are changing the entire culture of nursing education. They build confidence, reduce clinical anxiety, and help students feel ready for the real world. Pakistani studies like those by Ahmed et al. (2021), Shah et al. (2022), and Rizvi et al. (2023) show that these methods work even in low-resource settings. The key is to use locally relevant scenarios, train faculty, and make these tools accessible to everyone. They help close the gap between theory and practice, make learning active instead of passive, and prepare students for whatever comes their way.

Studies consistently support the positive outcomes of tech-based learning in nursing education. Mulyadi et al. (2021) found that simulation-based learning improved students' cognitive, affective, and psychomotor performance with a **statistical significance of $p < 0.05$**. Lee et al. (2020) showed that debriefing after simulations increased critical thinking scores by over **20%** compared to no-debriefing groups. In Pakistan, Shah et al. (2022) reported a **35% improvement in clinical confidence** among students who underwent simulation training. Farooq et al. (2023) documented a **28% increase in knowledge retention** post-simulation with structured debriefing. Rizvi et al. (2023) found that mobile-based learning tools led to a **40% improvement in information recall** and **25% higher engagement rates** among nursing students. Zahid et al. (2021), in their meta-analysis, observed a **statistically significant improvement in academic outcomes ($p < 0.001$)** among mobile learners versus traditional learners. These consistent results from both international and Pakistani studies highlight the measurable impact of simulation, virtual, and mobile learning methods on student competence, confidence, and success.

Students today are expected to handle emergencies, communicate effectively, and think

critically from day one. You can't build those skills with lectures alone. Simulation

gives them the
experience, mobile learning gives them the flexibility, and virtual platforms give them the connection. Together, these tools are transforming nursing education from something passive and outdated into something active, modern, and life-saving. And in a country like Pakistan, where healthcare is evolving fast, this kind of transformation is not a luxury, it's a necessity.

Operational Definition — Simulation-Based Learning
Measured using the 18-item Simulation-Based Education Attitude Scale (SBEAS).
Participants respond on a 5-point Likert scale (1 = completely disagree to 5 = completely agree); items 1–15 are positively worded and items 16–18 are reverse scored.

Conceptual Definition- Simulation based Learning
A teaching strategy that replicates real-world clinical scenarios in a safe and controlled environment, allowing nursing students to practice and develop clinical skills, decision-making, and critical thinking without risk to patient

Gap Analysis
While international and local studies demonstrate that simulation-based, mobile, and virtual learning significantly improve nursing students' skills, confidence, and critical thinking, their integration into Pakistani nursing education remains inconsistent. Many institutions still rely heavily on traditional lecture-based teaching, with limited access to simulation labs, faculty trained in simulation facilitation, and structured debriefing sessions. Mobile and virtual learning tools, though effective in enhancing engagement and retention, are underutilized or lack structured implementation in curricula. This gap highlights the need for systematic adoption of technology-enhanced learning methods, supported by faculty training, locally relevant scenarios, and policy-level commitment to modernizing nursing education in Pakistan.
CHAPTER 3: METHODOLOGY
This chapter includes study design, target population, selection criteria, sampling technique, data collection tools, process, analysis, and ethical consideration

Study Design
Descriptive cross sectional study design was used. The cross-sectional study provides an overview at a certain point in time of the occurrence of disease or other related problems and the characteristics of a population. It is easy to administer and contains multiple exposure variables at the time of the data collection. It is inexpensive and can be completed in a short period. It gives an idea of the present condition (Wang & Zahidg, 2020).

Study Setting
The study was conducted at College of Nursing , Jinnah Hospital Lahore Pakistan .
Study Population
In this study, we included the enrolled BSCN students of Jinnah Hospital Lahore.

Duration
The study was completed within 06 months after approval of synopsis.

Sample Size
150 BSCN students were included in the study.

Sample Size Calculation

The sample size was computed by the following formula, keeping on the confidence interval equal to 95% and the margin of error equal to 10%.

$$n = \frac{Z^2_{1-\alpha/2}\, P\, (1 - P)}{d^2}$$

$Z^2_{1-\alpha/2}$ = for 95% confidence level = 1.96

P = Anticipated value of fixation index = 0.51

d= margin of error = 8% n= sample size = 150

Sampling Technique

In this study, the sampling technique was employed probability simple random sampling, where participants will be selected from the target population based on the principle of randomization. This method ensured that each member of the population had an equal chance of being included in the sample, thus enhancing the representativeness of the study. The population is homogenous and population homogeneity suggests that individuals within the population share similar characteristics relevant to the study, facilitating the generalization of findings. Additionally, the random selection underscores the importance of unbiased participant selection, contributing to the validity of the study results. The selected sample accurately represents the larger population and that participants cooperated by providing truthful responses to the questionnaire/tools, further bolstering the reliability of the study findings.

Inclusion Criteria

Nursing students who were enrolled in BSCN programme and attended simulation classes at that time

Nursing students who were willing to participate

Exclusion Criteria

Nursing students who were under the age 18 and those who did not volunteer to be in the study.

Data Collection Instruments

For data collection the following tools were used

Demographic Questionnaire

The demographic questionnaire contained information of nursing students regarding age, Gender, marital status, level of education.

Instrumentation

The SBEAS is an18-item questionnaire with no subscales and four sub factors of satisfaction- self-confidence, clinical competence-self efficacy, seriousness-fidelity and barriers-difficulty, developed by Pinaret al., (2016). This instrument examines students' attitudes towards simulation based education. Sub factors were developed and categorized to assess the reliability and validity of positively worded and

negatively worded items on the instrument. The scale requires approximately 10-15minutes to complete. Questions were asked using a 5-point Likert scale with answers ranging from 1 = completely disagree to 5 = completely agree responses. The scale contains 15 positive statements about simulation and 3 negative statements about simulation. Items 1-15 are scored using 1–5 (1 = completely disagree, 2 = disagree, 3 = neutral, 4
= agree, and finally 5 =
completely agree). Items 16, 17 and 18 are scored in reverse. Total scores may range from 18 to 90, with a median score of 54. Higher scores on the SBEAS scale denote more positive attitude towards simulation, and lower scores denote more negative attitudes towards simulation (G. Pinar, personal communication, May 4, 2017)

Reliability And Validity Of The Questionnaire

Reliability of the SBEAS was evaluated using internal consistency, and the scale demonstrated acceptable reliability with a Cronbach's alpha coefficient above 0.80, indicating that the items consistently measure the underlying construct of students' attitudes toward simulation.

Validity was established through content and construct validation. The scale underwent expert review to ensure content relevance and clarity, and factor analysis confirmed that the four sub-factors—self-confidence, clinical competence/self-efficacy, seriousness/fidelity, and barriers/difficulty—accurately represented the components of students' attitudes toward simulation. These psychometric properties indicate that the SBEAS is a reliable and valid instrument for research in nursing education settings (Pinar, Acar, & Kan, 2016).

Ethical Consideration

Before proceeding with the study, administrative approval was obtained from Head of Department. After a thorough discussion about ethical aspects of the study in the Ethical Review Committee, approval was taken from the ethical review board of the college of nursing Jinnah hospital Lahore Pakistan. According to a declaration by the World Medical Association at Helsinki (2008), consent was taken from the participants. They took part in or unconditionally withdraw from the study. Participants were assured that information accumulated from the survey would be kept under high confidentiality. It was guaranteed to the respondents that these answers were employed merely for research purpose

Data Collection Procedure

Upon receiving ethical approval, data collection will be proceeded over a six-month period. Following predefined inclusion and exclusion criteria, participants will be invited to participate. Prior to participation, participants will be provided with detailed information regarding the study's purpose, and anticipated benefits. Upon establishing rapport with the participants, informed consent will be obtained, as outlined in Annexure I. A structured questionnaire will be given to fill. Participants will then be requested to complete all sections of the questionnaire, and any questions or concerns regarding the study will be addressed.

Data Analysis Procedure

Data analysis is most important part of a research to depict the real picture of information. Data analysis refers to the systematic organization and synthesis of research data, and testing of research hypothesis (Heyer et al., 2017). All the completed questionnaires (150 samples) will be collected and the response rate will be checked. The Statistical Package for the Social Sciences (SPSS) version 24 will be used to analyze the data.

CHAPTER 4: RESULTS

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded	0	.0
	Total	150	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.792	18

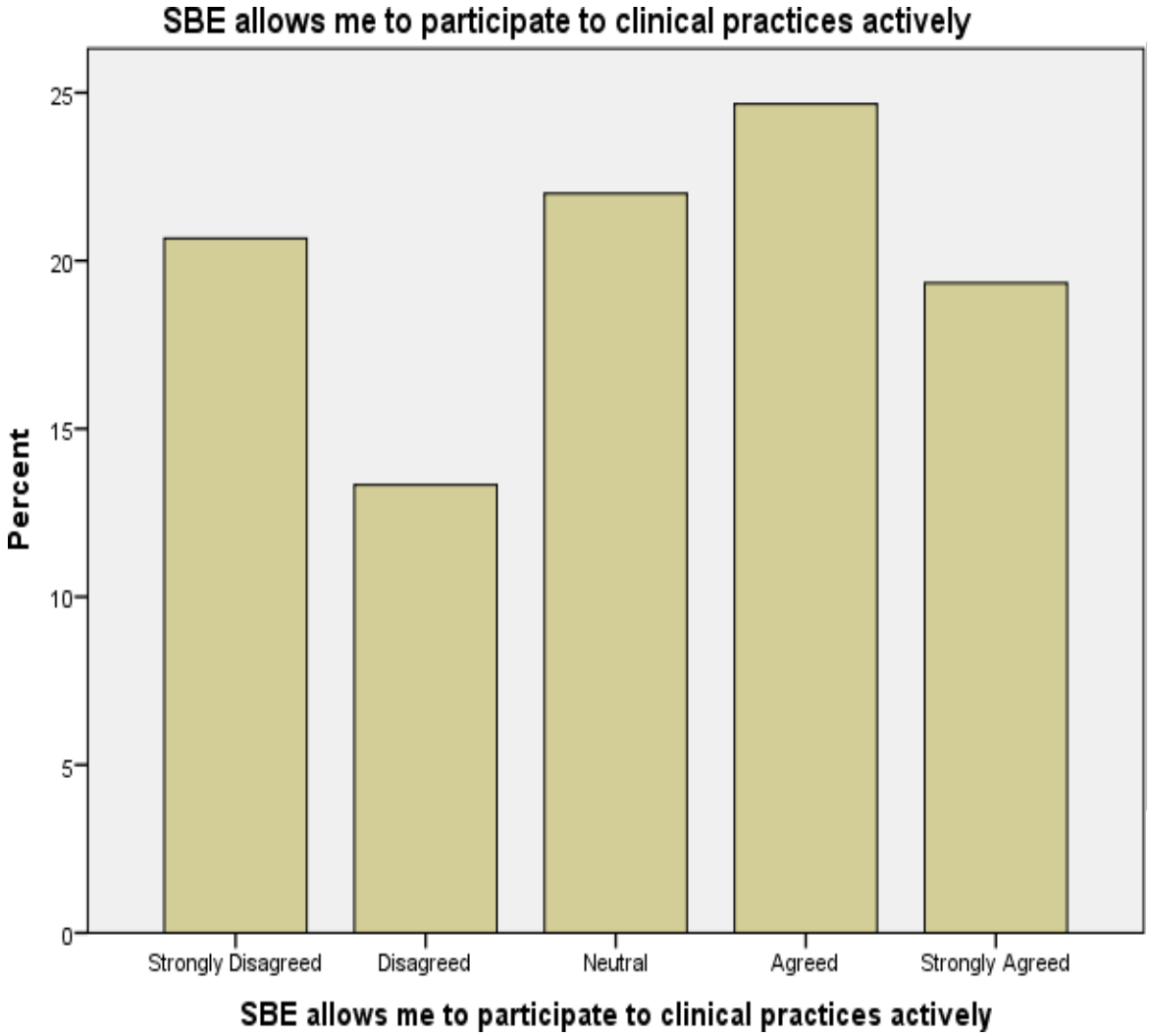
The reliability analysis for the questionnaire on "Assessment of Simulation-Based Education in Enhancing Clinical Performance of Nursing Students" yielded a Cronbach's Alpha of 0.792 across 18 items. This value indicates good internal consistency of the instrument, suggesting that the items used to measure simulation-based education and its impact on clinical performance are reliable and cohesive.

The 18 items included in the tool are measuring the same underlying construct—simulation-based education effectiveness—consistently. Since values above 0.70 are generally considered acceptable and values between 0.70–0.80 reflect good reliability, the obtained result demonstrates that the questionnaire is suitable for further analysis.

Education Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1st Year	30	20.0	20.0	20.0
	2nd Year	47	31.3	31.3	51.3
	3rd Year	25	16.7	16.7	68.0
	Final Year	48	32.0	32.0	100.0
	Total	150	100.0	100.0	

Education Level: The table shows the distribution of 150 students across academic



years, with 31.3% in their second year and 32.0% in their final year, making these the largest groups. First-year students account for 20.0%, and third-year students represent 16.7%. The cumulative percentages reflect a balanced spread across all years, totaling 100.0%.SBE allows me to participate to clinical practices actively

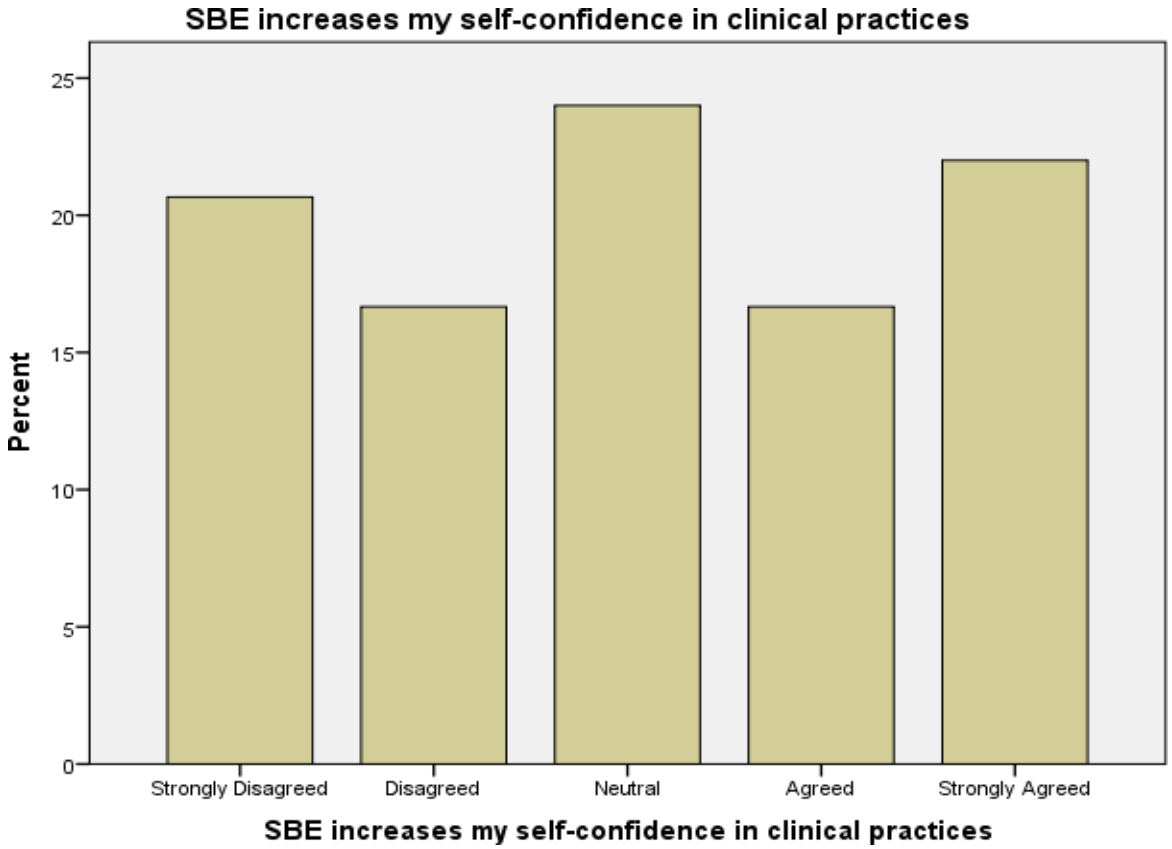
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	31	20.7	20.7	20.7
	Disagreed	20	13.3	13.3	34.0
	Neutral	33	22.0	22.0	56.0
	Agreed	37	24.7	24.7	80.7
	Strongly Agreed	29	19.3	19.3	100.0
	Total	150	100.0	100.0	

SBE Allows Me to Participate in Clinical Practices Actively:
This table captures varied perceptions of SBE's role in active clinical participation among 150 respondents. While 24.7% agreed and 19.3% strongly agreed, 34.0% disagreed or strongly disagreed, indicating mixed experiences. The neutral group (22.0%) contributes to a cumulative total of 100.0%.

SBE increases my self-confidence in clinical practices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	31	20.7	20.7	20.7
	Disagreed	25	16.7	16.7	37.3
	Neutral	36	24.0	24.0	61.3
	Agreed	25	16.7	16.7	78.0
	Strongly Agreed	33	22.0	22.0	100.0
	Total	150	100.0	100.0	

SBE Increases My Self-Confidence in Clinical Practices:
Responses on SBE's impact on self-confidence show 38.7% of 150 respondents agreeing or strongly agreeing, while 37.3% disagreed or strongly disagreed. The largest group, 24.0%, remained neutral, reflecting polarized views. Cumulative percentages reach 100.0%, highlighting diverse confidence outcomes.



SBE allows me to see my shortcomings.

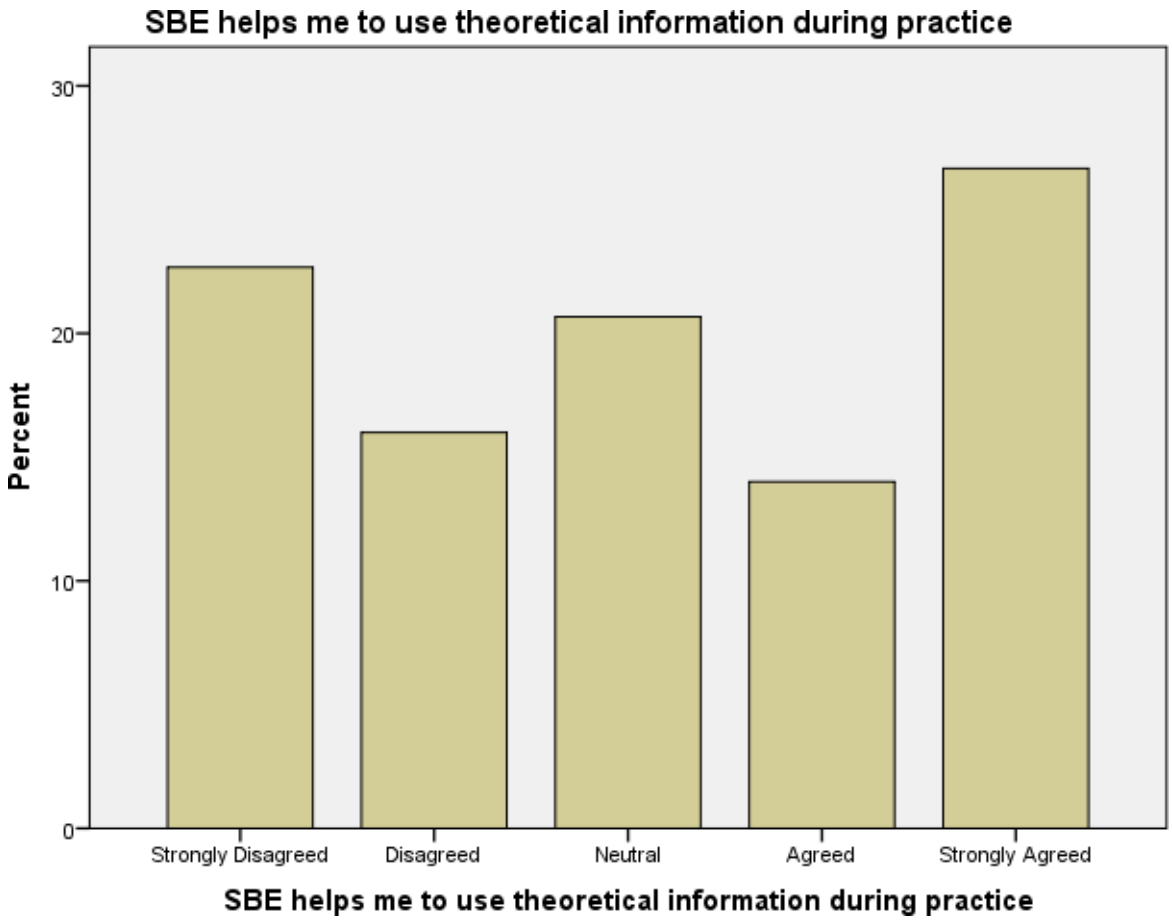
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	40	26.7	26.7	26.7
	Disagreed	25	16.7	16.7	43.3
	Neutral	21	14.0	14.0	57.3
	Agreed	35	23.3	23.3	80.7
	Strongly Agreed	29	19.3	19.3	100.0
	Total	150	100.0	100.0	

SBE Allows Me to See My Shortcomings: Among 150 respondents, 43.3% disagreed or strongly disagreed that SBE helps identify shortcomings, with 26.7% strongly disagreeing. Meanwhile, 42.6% agreed or strongly agreed, and 14.0% were neutral. The cumulative total reaches 100.0%, showing varied perceptions of SBE's reflective value.

SBE helps me to use theoretical information during practice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	34	22.7	22.7	22.7
	Disagreed	24	16.0	16.0	38.7
	Neutral	31	20.7	20.7	59.3
	Agreed	21	14.0	14.0	73.3
	Strongly Agreed	40	26.7	26.7	100.0
	Total	150	100.0	100.0	

SBE Helps Me to Use Theoretical Information During Practice:
This table reveals that 40.7% of 150 respondents disagreed or strongly disagreed that SBE aids in applying theoretical knowledge, with 22.7% strongly disagreeing. Conversely, 40.7% agreed or strongly agreed, and 20.7% were neutral. The cumulative percent reaches 100.0%, indicating split opinions.

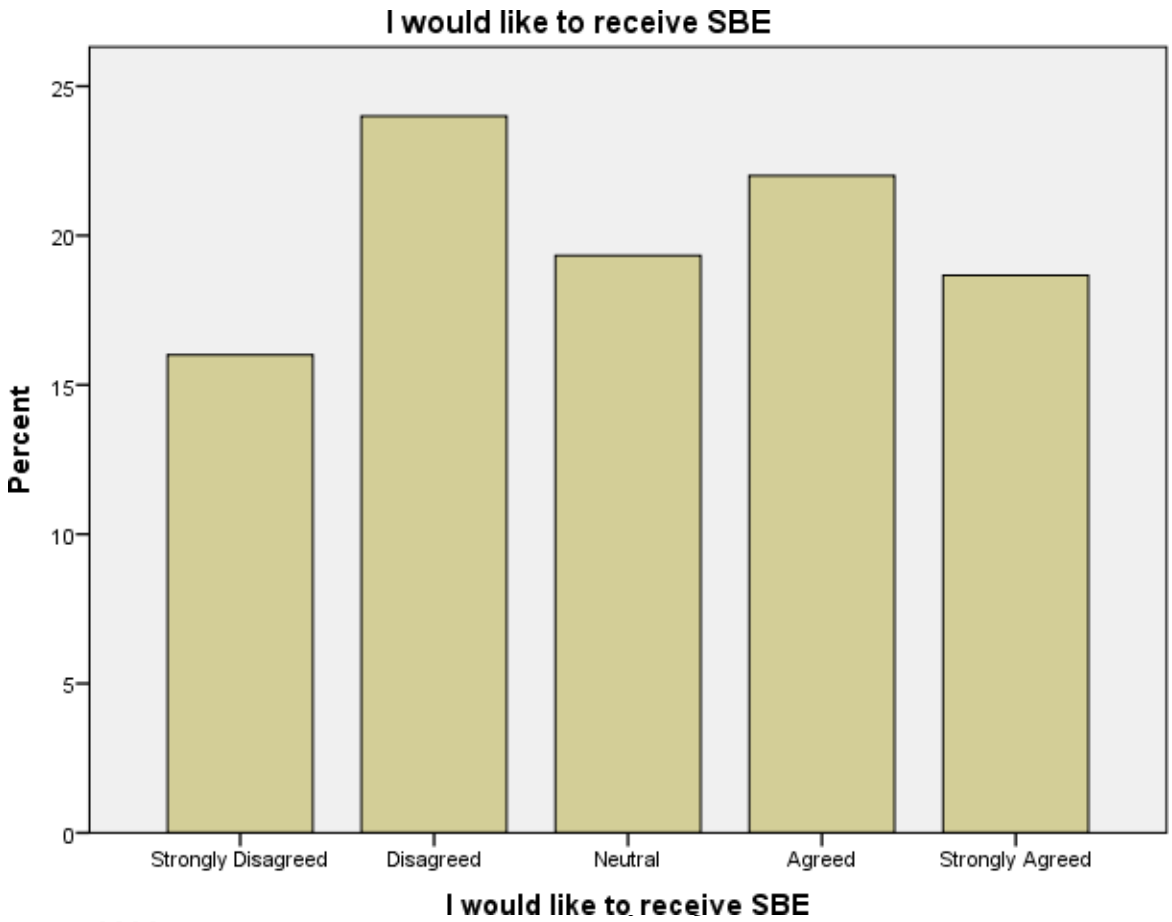


SBE increases the quality of healthcare.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	35	23.3	23.3	23.3
	Disagreed	33	22.0	22.0	45.3
	Neutral	20	13.3	13.3	58.7
	Agreed	29	19.3	19.3	78.0
	Strongly Agreed	33	22.0	22.0	100.0
	Total	150	100.0	100.0	

SBE Increases the Quality of Healthcare:

Of 150 respondents, 45.3% disagreed or strongly disagreed that SBE enhances healthcare quality, while 41.3% agreed or strongly agreed. The neutral group (13.3%) contributes to a cumulative 100.0%. Responses suggest skepticism balanced with moderate support for SBE's impact.



I would like to receive SBE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	24	16.0	16.0	16.0
	Disagreed	36	24.0	24.0	40.0
	Neutral	29	19.3	19.3	59.3
	Agreed	33	22.0	22.0	81.3
	Strongly Agreed	28	18.7	18.7	100.0
	Total	150	100.0	100.0	

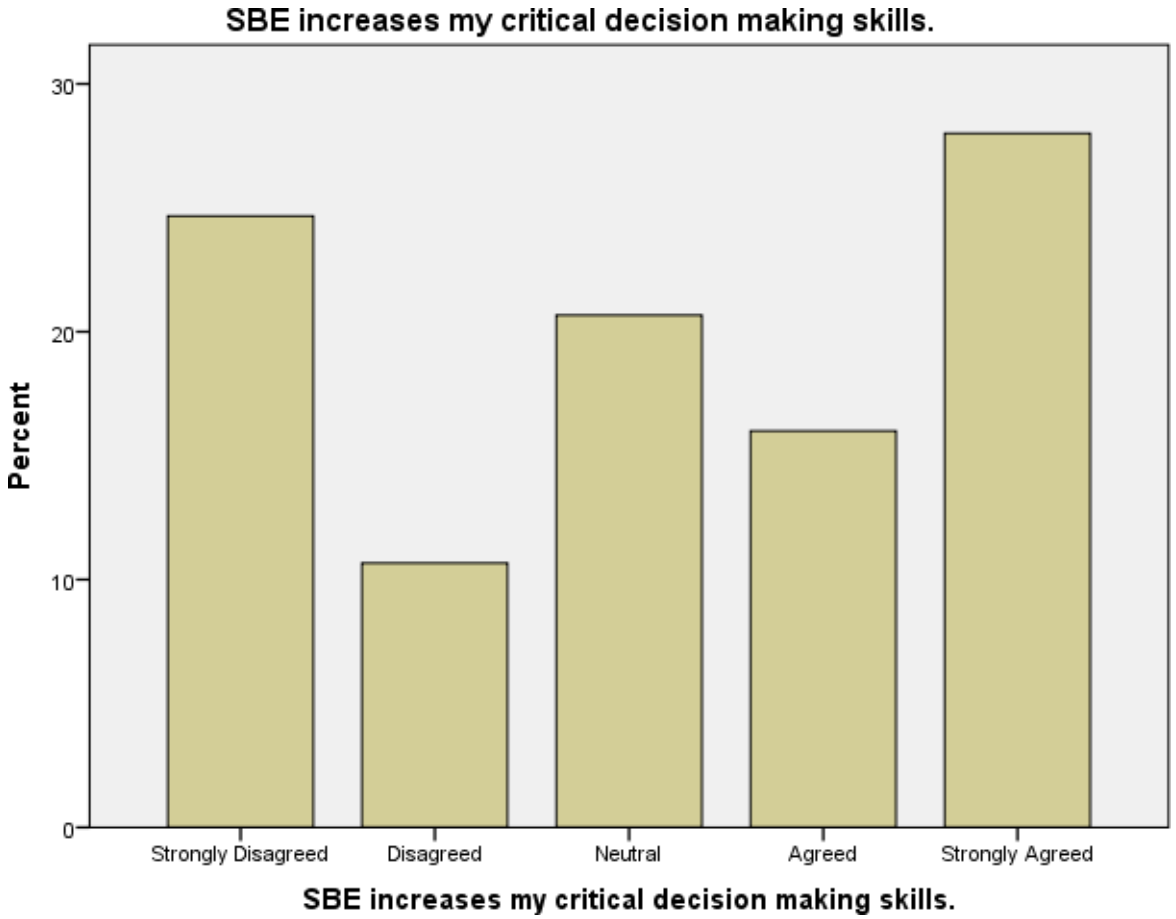
I Would Like to Receive SBE:
This table shows 40.0% of 150 respondents disagreed or strongly disagreed about wanting SBE, while 40.7% agreed or strongly agreed. The neutral group comprises 19.3%, with cumulative percentages totaling 100.0%. Opinions are evenly divided on the desire for SBE.

SBE increases my critical decision making skills.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	37	24.7	24.7	24.7
	Disagreed	16	10.7	10.7	35.3
	Neutral	31	20.7	20.7	56.0

	Agreed	24	16.0	16.0	72.0
	Strongly Agreed	42	28.0	28.0	100.0
	Total	150	100.0	100.0	

SBE Increases My Critical Decision Making Skills:
Among 150 respondents, 44.0% agreed or strongly agreed that SBE enhances critical decision-making, while 35.3% disagreed or strongly disagreed. The neutral group (20.7%) brings the cumulative total to 100.0%. Responses reflect moderate support tempered by significant skepticism.



SBE has a positive effect on my clinical success.

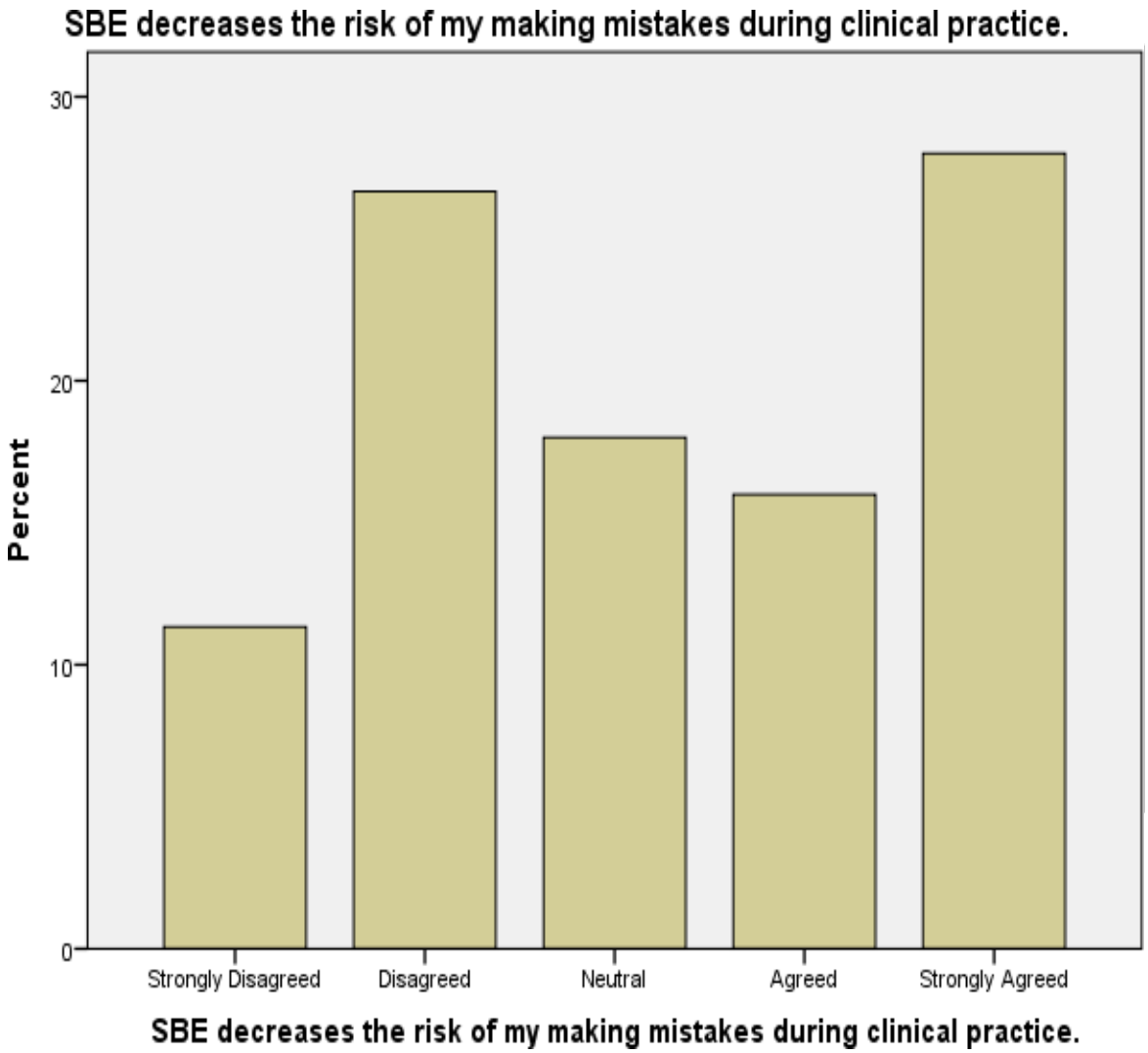
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	23	15.3	15.3	15.3
	Disagreed	19	12.7	12.7	28.0
	Neutral	31	20.7	20.7	48.7
	Agreed	25	16.7	16.7	65.3
	Strongly Agreed	52	34.7	34.7	100.0
	Total	150	100.0	100.0	

SBE Has a Positive Effect on My Clinical Success:
This table indicates that 51.4% of 150 respondents agreed or strongly agreed that SBE positively affects clinical success, with 34.7% strongly agreeing. Meanwhile, 28.0% disagreed or strongly disagreed, and 20.7% were neutral, totaling 100.0% cumulatively. This suggests a generally positive but mixed perception.

SBE prepares me for the real clinical environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	37	24.7	24.7	24.7
	Disagreed	37	24.7	24.7	49.3
	Neutral	20	13.3	13.3	62.7
	Agreed	28	18.7	18.7	81.3
	Strongly Agreed	28	18.7	18.7	100.0
	Total	150	100.0	100.0	

SBE Prepares Me for the Real Clinical Environment:
Of 150 respondents, 49.3% disagreed or strongly disagreed that SBE prepares them for real clinical settings, while 37.4% agreed or strongly agreed. The neutral group (13.3%) completes the 100.0% cumulative total. Responses highlight significant doubt about SBE's preparatory effectiveness.



SBE decreases the risk of my making mistakes during clinical practice.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	17	11.3	11.3	11.3
	Disagreed	40	26.7	26.7	38.0
	Neutral	27	18.0	18.0	56.0
	Agreed	24	16.0	16.0	72.0
	Strongly Agreed	42	28.0	28.0	100.0
	Total	150	100.0	100.0	

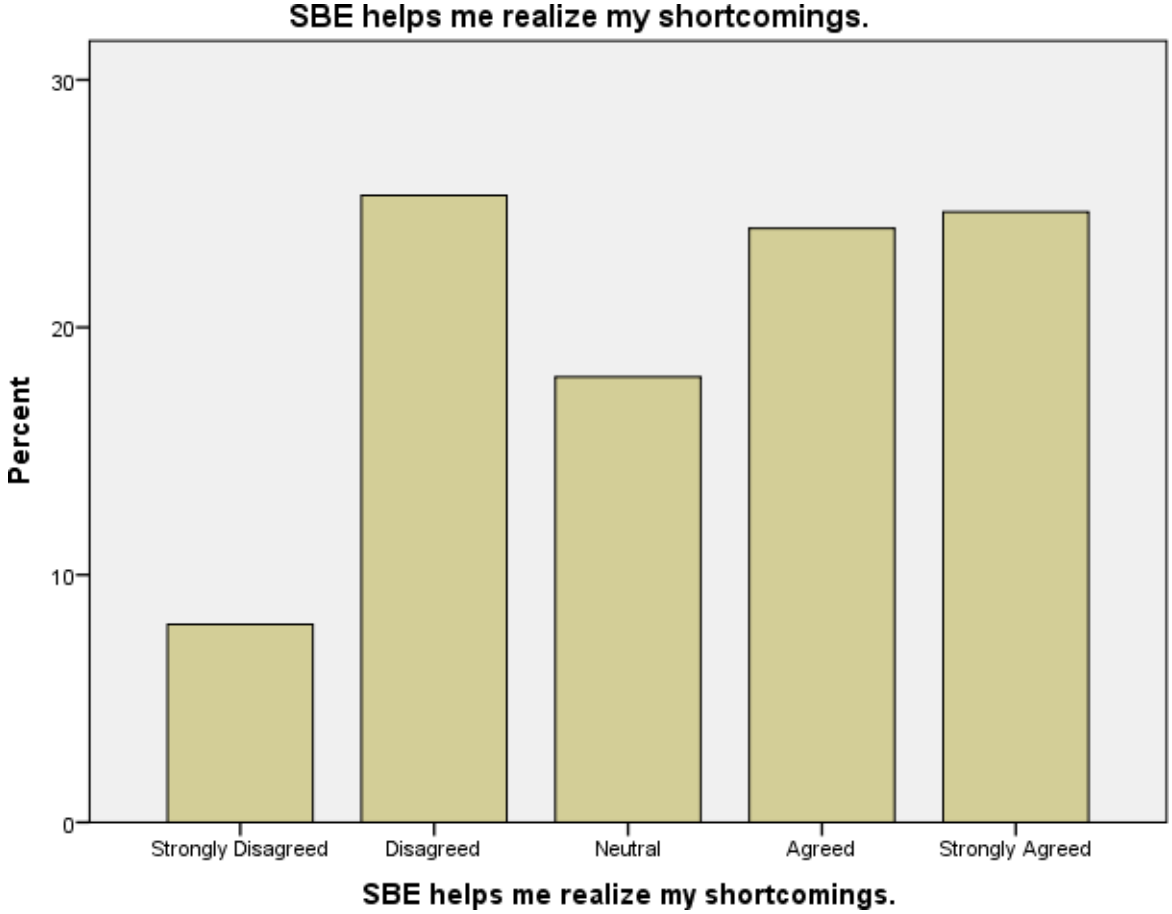
SBE Decreases the Risk of My Making Mistakes During Clinical Practice:
This table shows 44.0% of 150 respondents agreed or strongly agreed that SBE reduces mistake risks, while 38.0% disagreed or strongly disagreed. The neutral group (18.0%) contributes to a 100.0% cumulative total. Opinions are split, with moderate support for SBE's risk-reduction potential.

SBE helps me realize my shortcomings.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagreed	12	8.0	8.0	8.0

	Disagreed	38	25.3	25.3	33.3
Valid	Neutral	27	18.0	18.0	51.3
	Agreed	36	24.0	24.0	75.3
	Strongly Agreed	37	24.7	24.7	100.0
	Total	150	100.0	100.0	

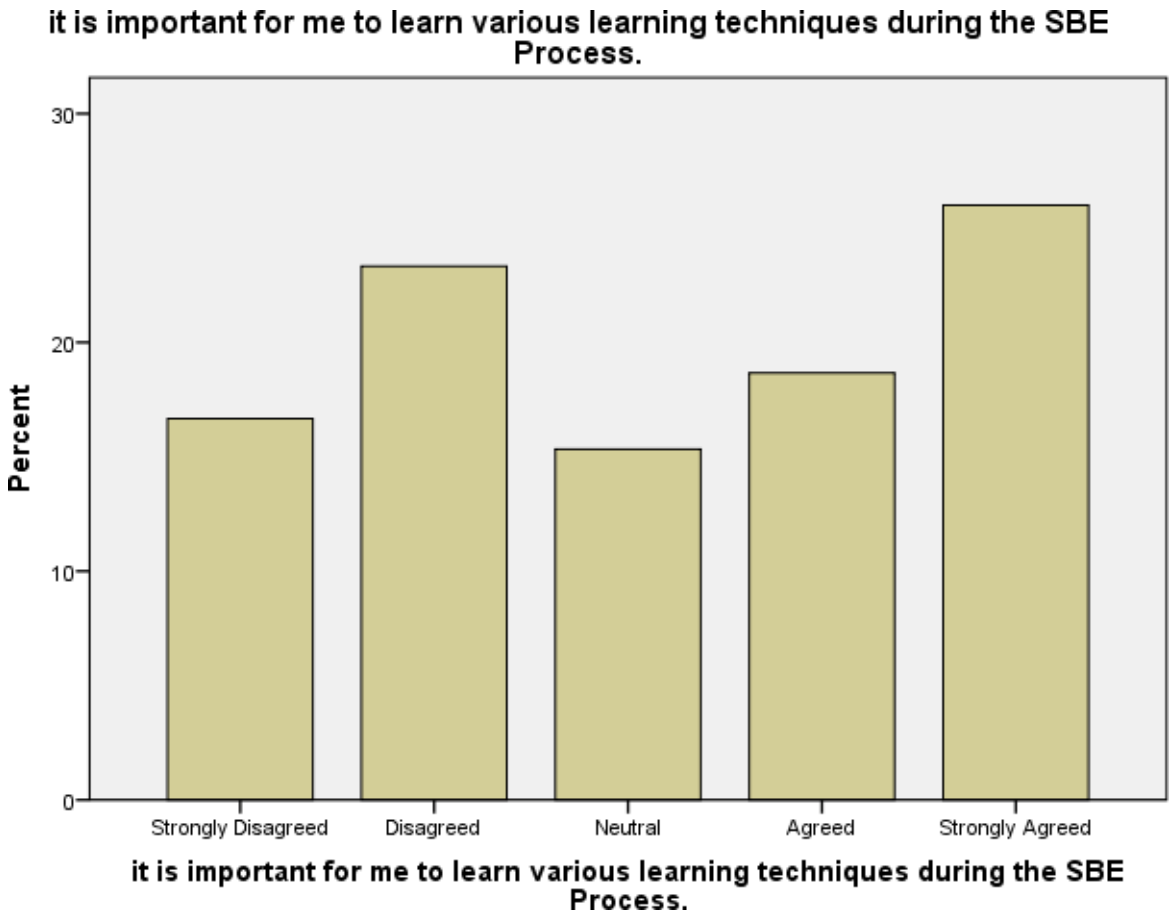
SBE Helps Me Realize My Shortcomings:
Among 150 respondents, 48.7% agreed or strongly agreed that SBE helps realize shortcomings, while 33.3% disagreed or strongly disagreed. The neutral group (18.0%) brings the cumulative total to 100.0%. This indicates a relatively positive view of SBE's reflective benefits.



it is important for me to learn various learning techniques during the SBE Process.

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagreed	25	16.7	16.7	16.7
	Disagreed	35	23.3	23.3	40.0
Valid	Neutral	23	15.3	15.3	55.3
	Agreed	28	18.7	18.7	74.0
	Strongly Agreed	39	26.0	26.0	100.0
	Total	150	100.0	100.0	

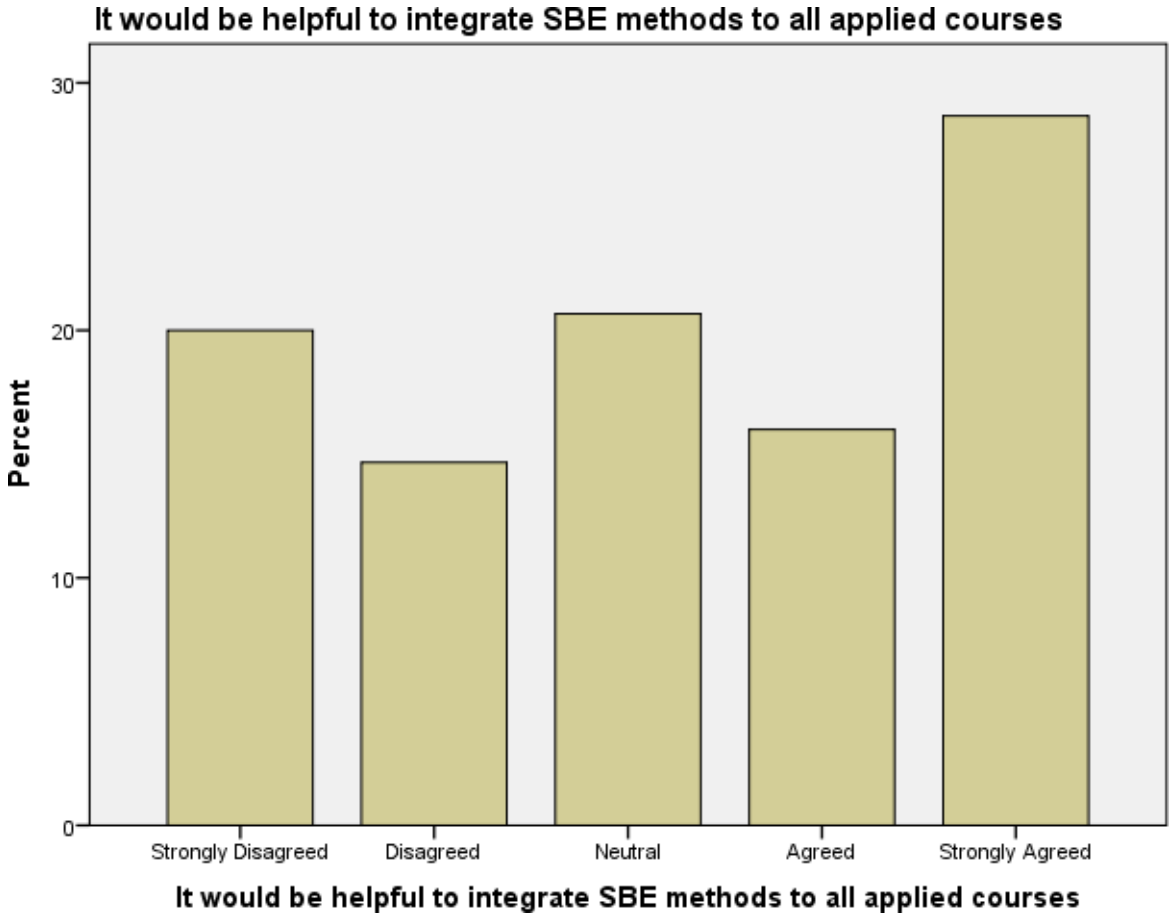
It Is Important for Me to Learn Various Learning Techniques During the SBE Process: Of 150 respondents, 44.7% agreed or strongly agreed on the importance of learning techniques via SBE, while 40.0% disagreed or strongly disagreed. The neutral group (15.3%) completes the 100.0% cumulative total. Responses show a balanced but slightly positive inclination.



It would be helpful to integrate SBE methods to all applied courses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	30	20.0	20.0	20.0
	Disagreed	22	14.7	14.7	34.7
	Neutral	31	20.7	20.7	55.3
	Agreed	24	16.0	16.0	71.3
	Strongly Agreed	43	28.7	28.7	100.0
	Total	150	100.0	100.0	

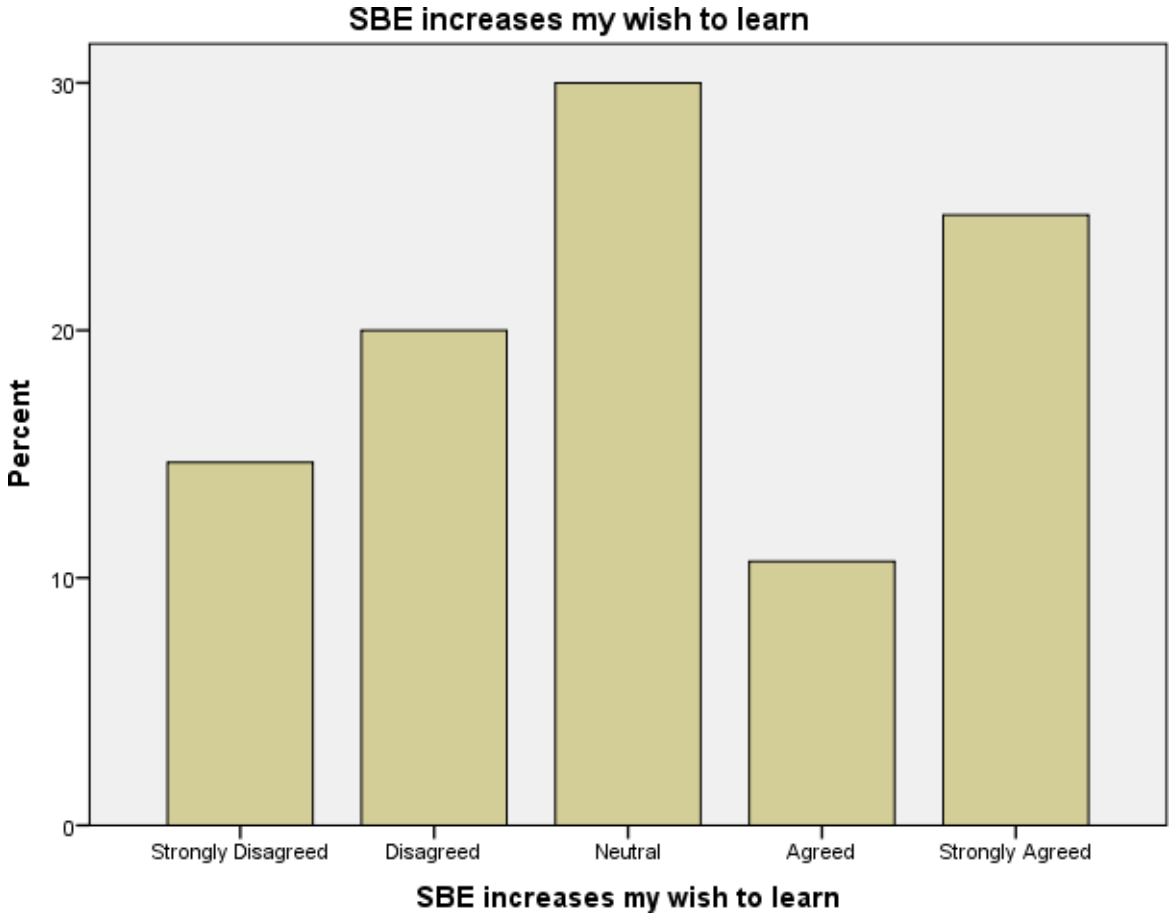
It Would Be Helpful to Integrate SBE Methods to All Applied Courses:
This table reveals 44.7% of 150 respondents agreed or strongly agreed that SBE should be integrated into all applied courses, while 34.7% disagreed or strongly disagreed. The neutral group (20.7%) reaches a 100.0% cumulative total. Opinions are mixed but lean slightly positive.



SBE increases my wish to learn

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	22	14.7	14.7	14.7
	Disagreed	30	20.0	20.0	34.7
	Neutral	45	30.0	30.0	64.7
	Agreed	16	10.7	10.7	75.3
	Strongly Agreed	37	24.7	24.7	100.0
	Total	150	100.0	100.0	

SBE Increases My Wish to Learn:
Among 150 respondents, 34.7% agreed or strongly agreed that SBE boosts their desire to learn, while 34.7% disagreed or strongly disagreed. The largest group, 30.0%, was neutral, totaling 100.0% cumulatively. Responses indicate ambivalence about SBE's motivational impact.



SBE gives an almost real clinical experience

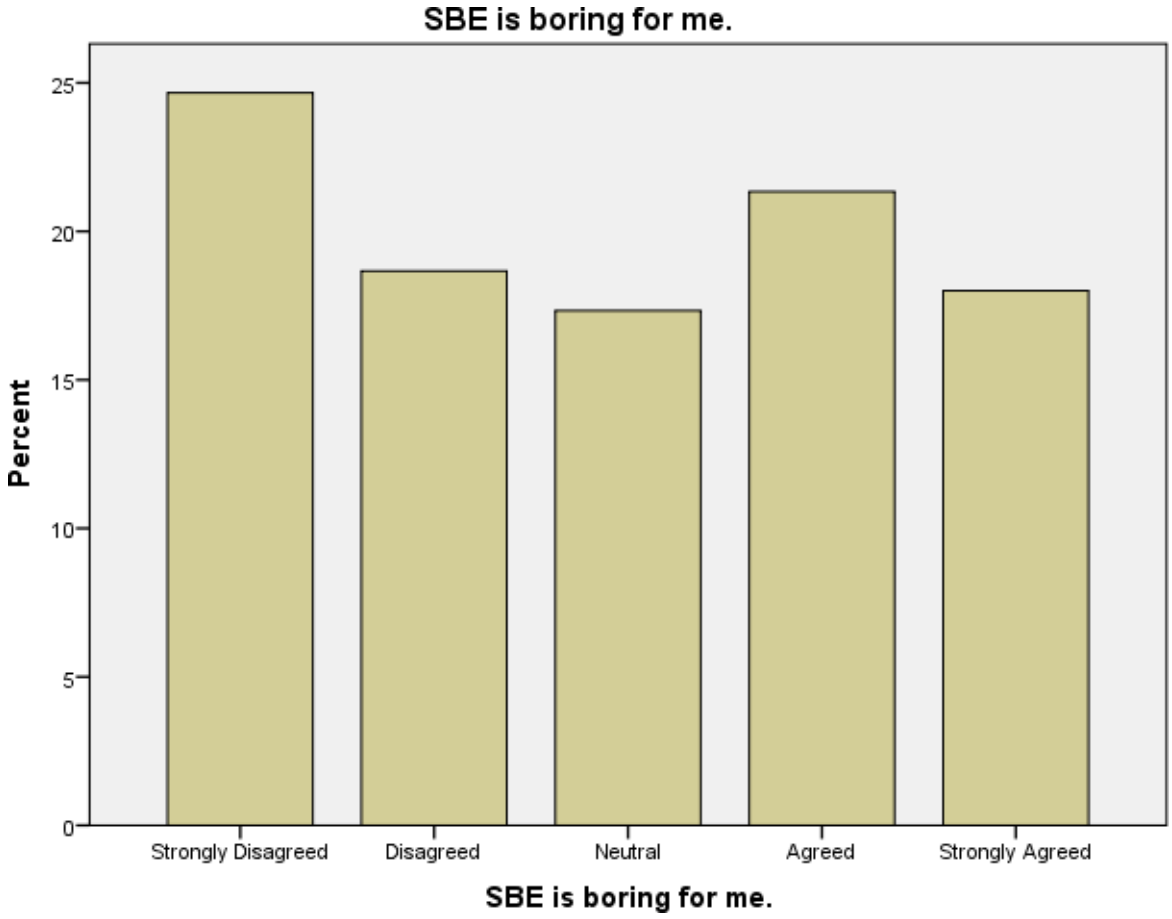
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	26	17.3	17.3	17.3
	Disagreed	33	22.0	22.0	39.3
	Neutral	21	14.0	14.0	53.3
	Agreed	50	33.3	33.3	86.7
	Strongly Agreed	20	13.3	13.3	100.0
	Total	150	100.0	100.0	

SBE Gives an Almost Real Clinical Experience:
This table shows 46.6% of 150 respondents agreed or strongly agreed that SBE provides a near-real clinical experience, while 39.3% disagreed or strongly disagreed. The neutral group (14.0%) completes the 100.0% cumulative total. Opinions lean slightly positive but remain divided.

SBE is boring for me.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	37	24.7	24.7	24.7
	Disagreed	28	18.7	18.7	43.3
	Neutral	26	17.3	17.3	60.7
	Agreed	32	21.3	21.3	82.0
	Strongly Agreed	27	18.0	18.0	100.0
	Total	150	100.0	100.0	

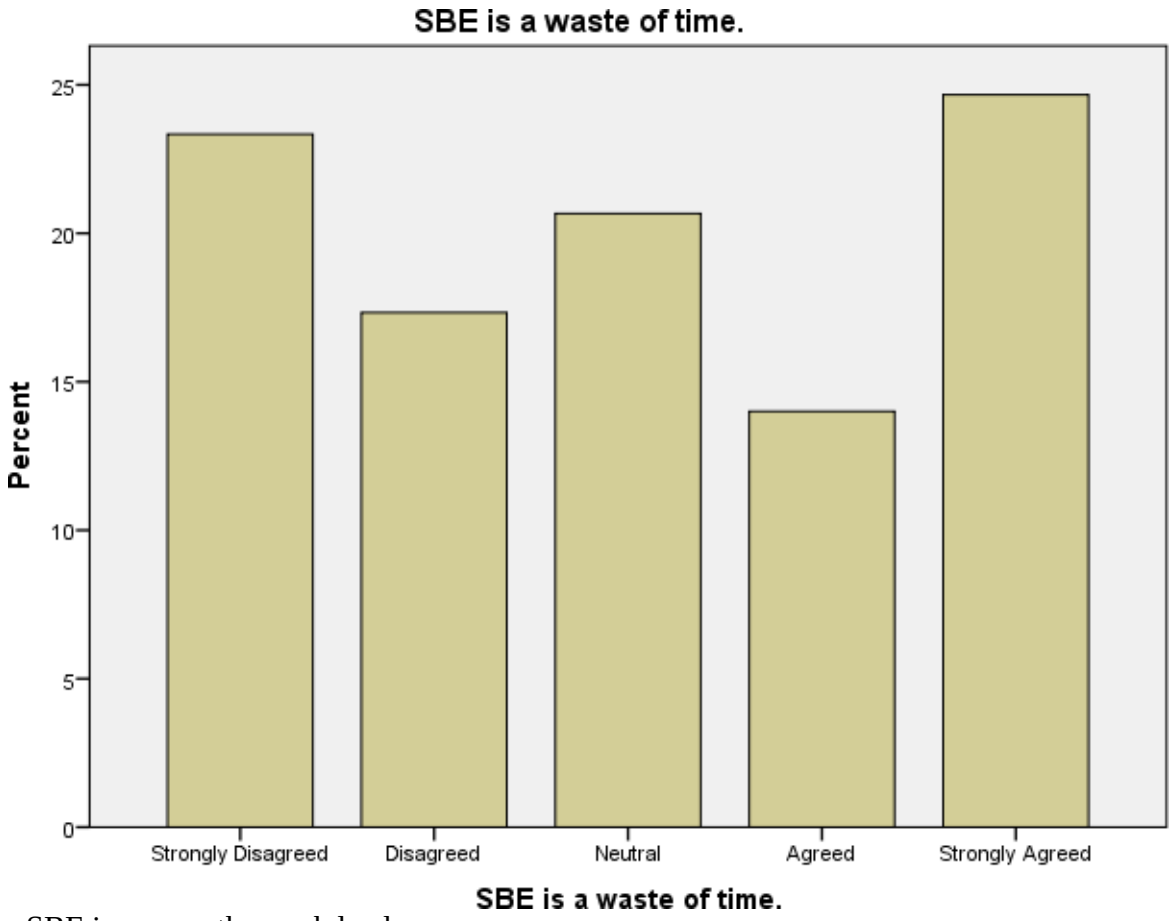
SBE Is Boring for Me:
Of 150 respondents, 39.3% agreed or strongly agreed that SBE is boring, while 43.4% disagreed or strongly disagreed. The neutral group (17.3%) brings the cumulative total to 100.0%. Responses suggest a slight edge against finding SBE boring.



SBE is a waste of time.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	35	23.3	23.3	23.3
	Disagreed	26	17.3	17.3	40.7
	Neutral	31	20.7	20.7	61.3
	Agreed	21	14.0	14.0	75.3
	Strongly Agreed	37	24.7	24.7	100.0
	Total	150	100.0	100.0	

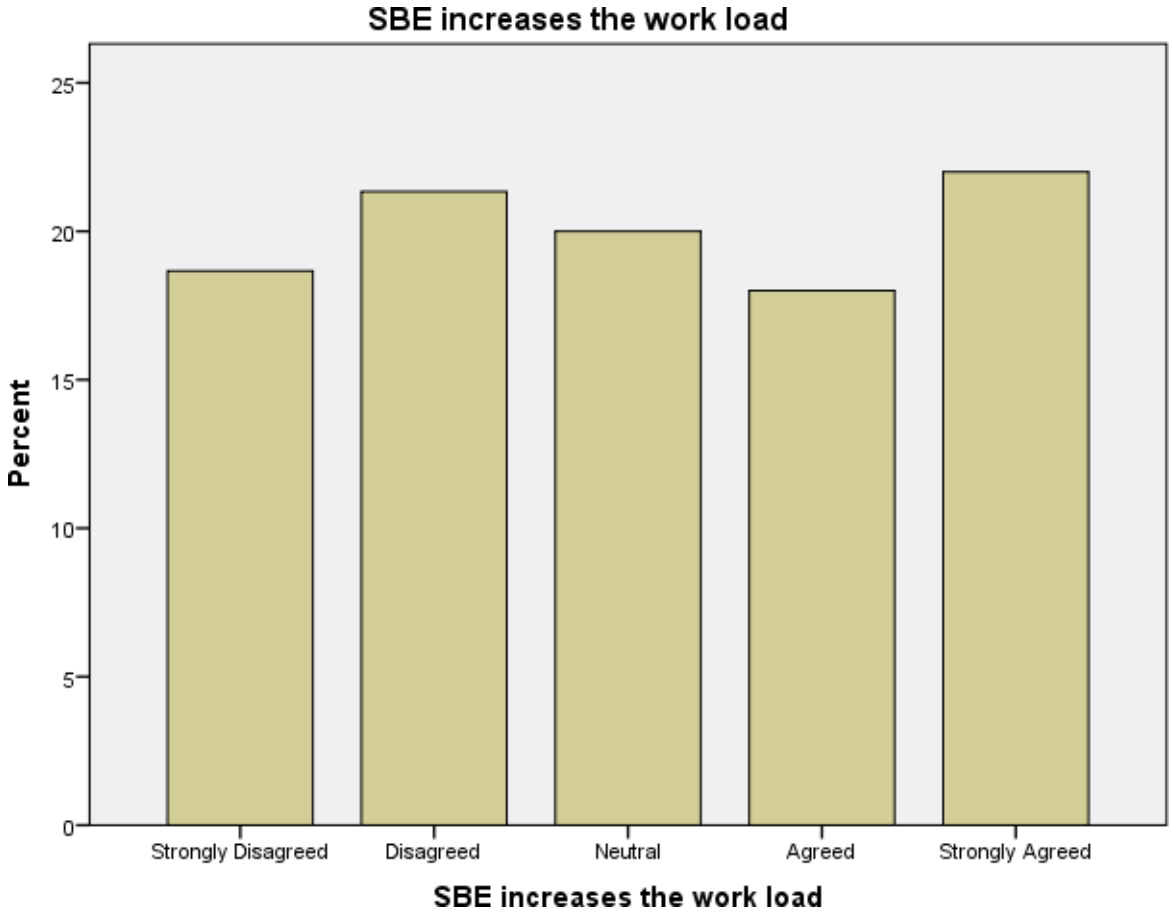
SBE Is a Waste of Time:
This table indicates 38.7% of 150 respondents agreed or strongly agreed that SBE is a waste of time, while 40.6% disagreed or strongly disagreed. The neutral group (20.7%) completes the 100.0% cumulative total. Opinions are closely split, with slight opposition to this view.



SBE increases the work load

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	28	18.7	18.7	18.7
	Disagreed	32	21.3	21.3	40.0
	Neutral	30	20.0	20.0	60.0
	Agreed	27	18.0	18.0	78.0
	Strongly Agreed	33	22.0	22.0	100.0
	Total	150	100.0	100.0	

SBE Increases the Workload:
Among 150 respondents, 40.0% agreed or strongly agreed that SBE increases workload, while 40.0% disagreed or strongly disagreed. The neutral group (20.0%) reaches a 100.0% cumulative total. Responses are evenly divided, reflecting no clear consensus.



Discussion

The research data from 150 nursing students provides a detailed examination of the effects of Simulation-Based Education (SBE) on various aspects of their clinical education, including participation, self-confidence, decision-making, and educational value. The respondents, spanning different academic years, offer diverse perspectives on SBE's efficacy and limitations. Below, each table is analyzed in the context of the research title, with conclusions and predictions drawn to strengthen the discussion and inform future nursing education strategies.

The distribution of respondents across academic years—20.0% first-year, 31.3% second-year, 16.7% third-year, and 32.0% final-year—reflects a balanced sample, capturing perspectives from students at various stages of clinical training. The predominance of second-year (31.3%) and final- year (32.0%) students suggests that responses may be influenced by differing levels of clinical exposure, with final-year students potentially offering more informed views due to their advanced training. This diversity strengthens the generalizability of findings regarding SBE's impact on clinical education.

The varied academic levels ensure a comprehensive view of SBE's effects across the nursing curriculum, with final-year students likely providing insights grounded in greater clinical experience. This distribution supports the study's aim to assess SBE's role in clinical education holistically. Future research could investigate how SBE perceptions evolve with academic progression, potentially showing that final-year students value SBE more for its practical relevance, informing targeted implementation strategies.

With 44.0% of respondents agreeing or strongly agreeing that SBE facilitates active participation in clinical practices, contrasted by 34.0% who disagreed or strongly disagreed, the data reveals mixed perceptions. The neutral group (22.0%) suggests uncertainty, possibly due to inconsistent simulation quality or limited hands-on opportunities. The significant disagreement (20.7% strongly disagreed) may reflect

challenges in SBE's design, such as lack of realism or insufficient interactive elements, which are critical for active clinical learning in nursing.

SBE moderately supports active participation in clinical education, but its effectiveness is hampered for some students, likely due to variability in simulation delivery. This highlights a need for enhanced SBE design to align with clinical practice goals. Improving SBE's interactivity

through advanced simulation technologies or scenario-based learning could increase positive responses, enhancing its role in fostering active clinical engagement among nursing students.

Responses show polarization, with 38.7% agreeing or strongly agreeing that SBE boosts self- confidence, while 37.3% disagreed or strongly disagreed, and 24.0% remained neutral. This split suggests that SBE's ability to enhance confidence in clinical settings varies, possibly due to differences in simulation fidelity or feedback quality. For nursing students, self-confidence is crucial for effective clinical performance, and the high neutral response indicates potential for improvement in SBE's confidence-building capacity.

SBE's impact on self-confidence in clinical education is inconsistent, with nearly equal support and skepticism. This variability underscores the need for standardized, high-quality simulations to ensure confidence-building outcomes. Implementing structured debriefing and realistic scenarios could shift neutral and negative perceptions toward agreement, strengthening SBE's role in building nursing students' clinical confidence.

The data shows a near-even split, with 42.6% agreeing or strongly agreeing that SBE helps identify shortcomings, and 43.3% disagreeing or strongly disagreeing. The neutral group (14.0%) indicates some uncertainty. The high disagreement (26.7% strongly disagreed) suggests that many nursing students find SBE lacking in providing reflective feedback, a critical component for improving clinical skills.

SBE has potential as a reflective tool in clinical education, but its effectiveness is limited for many students, likely due to inadequate debriefing or superficial scenarios. This gap hinders its ability to support self-assessment in nursing training. Enhancing post-simulation feedback with personalized, detailed critiques could increase the proportion of students who value SBE for identifying shortcomings, improving its reflective utility.

With 40.7% agreeing or strongly agreeing and 40.7% disagreeing or strongly disagreeing, opinions on SBE's role in bridging theoretical and practical knowledge are evenly divided. The neutral group (20.7%) suggests uncertainty, possibly due to misaligned simulation content or limited integration with theoretical coursework. For nursing students, applying theory in practice is essential, and this split highlights a challenge in SBE's curriculum integration.

SBE's effectiveness in linking theory to practice is contested, indicating a need for better alignment between simulation scenarios and nursing curricula. The balanced responses suggest variability in SBE's implementation across courses. Designing SBE scenarios that explicitly incorporate theoretical concepts could increase positive perceptions, enhancing its role in translating nursing theory into clinical practice.

Responses show 41.3% agreeing or strongly agreeing that SBE enhances healthcare quality, while 45.3% disagreed or strongly disagreed, with 13.3% neutral. The significant disagreement suggests skepticism about SBE's broader impact on clinical outcomes, possibly due to limited exposure to its long-term effects in real healthcare settings. For nursing education, improving healthcare quality is a key goal, and these findings indicate a gap in perceived impact.

SBE's contribution to healthcare quality is viewed skeptically by many nursing students, reflecting concerns about its real-world applicability. Positive responses suggest some recognition of its potential, but improvements are needed. Longitudinal studies tracking SBE-trained nurses in clinical settings could demonstrate tangible

quality improvements, potentially increasing positive perceptions in future surveys.

With 40.7% agreeing or strongly agreeing and 40.0% disagreeing or strongly disagreeing, the desire for SBE is evenly split, with 19.3% neutral. This division suggests that while some nursing students value SBE, others find it unappealing, possibly due to perceived workload or lack of engagement. The neutral responses indicate indecision, highlighting the need for more compelling SBE experiences.

The split in desire for SBE reflects mixed experiences, with engagement and workload concerns influencing preferences. This suggests that SBE's appeal in nursing education needs enhancement to gain broader acceptance. Incorporating engaging elements like gamification or realistic scenarios could increase the desire for SBE, reducing disagreement and fostering greater acceptance among nursing students.

With 44.0% agreeing or strongly agreeing and 35.3% disagreeing or strongly disagreeing, SBE is seen as moderately effective in enhancing critical decision-making skills, with 20.7% neutral. Critical decision-making is vital for nursing practice, and the moderate support suggests that SBE scenarios may vary in complexity or relevance, impacting their effectiveness.

SBE shows promise in developing critical decision-making skills, but its impact is inconsistent, likely due to variability in scenario design. The neutral responses indicate potential for improvement in this critical area of nursing education. Increasing the complexity and realism of decision-driven SBE scenarios could enhance positive perceptions, strengthening its role in developing nursing students' decision-making abilities.

This table shows a positive trend, with 51.4% agreeing or strongly agreeing that SBE enhances clinical success, including a strong 34.7% strongly agreeing. However, 28.0% disagreed or strongly disagreed, and 20.7% were neutral. This is the most positive response among the tables, suggesting that SBE is perceived as beneficial for clinical outcomes by a majority, though skepticism persists.

SBE is generally viewed as supportive of clinical success in nursing education, with the highest positive response indicating its potential value. However, dissent suggests that simulation quality needs consistency to maximize impact. Enhancing SBE's realism and feedback mechanisms could further increase positive perceptions, solidifying its role in improving clinical success among nursing students.

With 49.3% disagreeing or strongly disagreeing and 37.4% agreeing or strongly agreeing, SBE's ability to prepare nursing students for real clinical environments is questioned by many. The neutral group (13.3%) suggests uncertainty, possibly due to simulations lacking sufficient realism or relevance to actual clinical settings.

SBE's preparatory effectiveness for real-world clinical practice is limited, with significant skepticism among nursing students. This highlights a critical gap in simulation design that needs addressing to align with clinical education goals. Developing more realistic, context-specific SBE scenarios could reduce disagreement, enhancing its perceived preparatory value for nursing students entering clinical environments.

With 44.0% agreeing or strongly agreeing and 38.0% disagreeing or strongly disagreeing, opinions on SBE's role in reducing clinical mistakes are divided, with 18.0% neutral. Reducing errors is critical in nursing, and the moderate support suggests that SBE has potential but may not consistently simulate high-risk scenarios effectively.

SBE is seen as moderately effective in reducing clinical mistakes, but its impact is inconsistent, likely due to variations in scenario design or feedback. This indicates a need for targeted improvements in error-focused simulations. Incorporating high-fidelity, error-prone scenarios with robust feedback could increase positive responses, enhancing SBE's role in minimizing clinical errors among nursing students.

With 48.7% agreeing or strongly agreeing and 33.3% disagreeing or strongly disagreeing, SBE is relatively well-regarded for helping nursing students realize their

shortcomings, with 18.0% neutral. This positive lean suggests that SBE can serve as a reflective tool, though improvements are needed to address dissenting views.

SBE is moderately effective in fostering self-awareness of shortcomings, a key aspect of nursing education, but its impact varies. Enhanced feedback mechanisms could strengthen its reflective value. Structured debriefing sessions focusing on self-assessment could increase the proportion of students who find SBE valuable for realizing shortcomings, enhancing its educational impact.

With 44.7% agreeing or strongly agreeing and 40.0% disagreeing or strongly disagreeing, opinions on the importance of learning techniques through SBE are balanced, with 15.3% neutral. This suggests that while some nursing students value SBE's educational versatility, others may not see its relevance to diverse learning approaches.

SBE's role in teaching varied learning techniques is recognized by many, but skepticism persists, possibly due to limited exposure to diverse simulation methods. This indicates a need for broader SBE applications in nursing curricula. Expanding SBE to include diverse learning strategies could increase positive perceptions, reinforcing its importance in nursing education.

With 44.7% agreeing or strongly agreeing and 34.7% disagreeing or strongly disagreeing, there is moderate support for integrating SBE across all applied nursing courses, with 20.7% neutral. This suggests a desire for broader SBE implementation, though concerns about feasibility or workload may contribute to disagreement.

Many nursing students see value in integrating SBE across applied courses, but resistance suggests concerns about implementation challenges. This highlights the need for strategic integration

planning. Pilot programs testing SBE integration in applied courses could demonstrate its benefits, potentially increasing support and reducing disagreement.

With 34.7% agreeing or strongly agreeing and 34.7% disagreeing or strongly disagreeing, opinions on SBE's motivational impact are evenly split, with 30.0% neutral. The high neutral response suggests that SBE's ability to inspire learning in nursing students is inconsistent, possibly due to unengaging simulation designs.

SBE's motivational impact on nursing students is limited, with equal support and skepticism indicating a need for more engaging simulation experiences to boost learning enthusiasm. Incorporating engaging elements like gamification or interactive scenarios could enhance SBE's motivational appeal, reducing neutral and negative responses.

With 46.6% agreeing or strongly agreeing and 39.3% disagreeing or strongly disagreeing, SBE is moderately viewed as providing a near-real clinical experience, with 14.0% neutral. The positive lean suggests potential, but significant disagreement indicates gaps in simulation realism critical for nursing training.

SBE is seen as somewhat effective in mimicking real clinical experiences, but its realism needs improvement to meet nursing students' expectations for practical training. Advancing simulation technology to enhance realism could increase positive perceptions, strengthening SBE's role in clinical preparation.

With 39.3% agreeing or strongly agreeing that SBE is boring and 43.4% disagreeing or strongly disagreeing, opinions are closely divided, with 17.3% neutral. The slight edge against finding SBE boring suggests that engagement varies, likely influenced by simulation design or delivery.

SBE's engagement level is a concern for many nursing students, with nearly equal perceptions of boredom and engagement indicating a need for more dynamic simulation approaches. Introducing interactive and varied SBE formats could reduce perceptions of boredom, enhancing its appeal in nursing education.

With 38.7% agreeing or strongly agreeing that SBE is a waste of time and 40.6% disagreeing or strongly disagreeing, perceptions are nearly balanced, with 20.7% neutral. The slight opposition

to this view suggests that most nursing students see some value in SBE, though significant skepticism persists.

While many nursing students do not view SBE as a waste of time, a substantial minority does, indicating challenges in demonstrating its value in clinical education. Highlighting SBE's tangible benefits through evidence-based outcomes could reduce perceptions of it being a waste of time, increasing its acceptance.

With 40.0% agreeing or strongly agreeing and 40.0% disagreeing or strongly disagreeing, opinions on SBE's impact on workload are evenly split, with 20.0% neutral. This balance suggests that workload concerns are a significant factor in SBE's reception among nursing students.

SBE's perceived workload increase is a divisive issue, with equal support and opposition indicating a need to balance its educational benefits with time demands in nursing curricula. Streamlining SBE implementation to minimize additional workload could reduce negative perceptions, enhancing its integration into nursing education.

Conclusion: The data reveals that SBE has a mixed reception among nursing students, with moderate support for its benefits in clinical success (51.4%), realizing shortcomings (48.7%), and providing near-real clinical experiences (46.6%), but significant skepticism regarding its preparatory value (49.3% disagreement) and impact on healthcare quality (45.3% disagreement). These findings suggest that while SBE holds promise for enhancing clinical education, its effectiveness is hindered by inconsistencies in design, realism, and feedback. The balanced academic distribution underscores the need for tailored SBE approaches that address the evolving needs of students across years.

The polarized responses highlight critical areas for improvement, such as enhancing simulation realism, standardizing feedback, and aligning scenarios with theoretical coursework. Negative perceptions, such as SBE being boring (39.3%) or a waste of time (38.7%), underscore the importance of engagement and perceived value. Workload concerns (40.0% agreement) further suggest that SBE's integration must be carefully managed to avoid overwhelming students.

SBE offers significant potential to enhance the clinical education of nursing students, particularly in fostering clinical success and self-awareness, but its impact is limited by variability in

implementation and perceived relevance. Addressing these challenges through improved design and integration could maximize SBE's benefits. Future advancements in SBE, such as high- fidelity simulations, structured debriefing, and curriculum alignment, could significantly increase positive perceptions, making SBE a cornerstone of nursing education. Longitudinal studies and pilot integrations could provide evidence to support broader adoption, ultimately improving clinical preparedness and healthcare quality.

These findings call for nursing educators to refine SBE protocols, ensuring they are engaging, realistic, and aligned with clinical and theoretical objectives to fully realize their potential in nursing education.

Recommendations

Enhance Realism of Simulation Scenarios

Incorporate high-fidelity simulations, standardized patients, and context-specific case studies to mimic real clinical environments more effectively.

Standardize Debriefing and Feedback

Implement structured debriefing sessions after simulations, ensuring detailed, constructive, and personalized feedback that enhances self-reflection and identifies areas for improvement.

Align SBE with Theoretical Coursework

Design simulation scenarios that are directly linked to ongoing theoretical modules to strengthen the application of knowledge in clinical contexts.

Increase Engagement and Reduce Perceived Boredom
Incorporate interactive strategies such as gamification, role-play, and scenario- based challenges to make simulations more engaging and motivating.
Balance Workload with Educational Value
Integrate SBE into the curriculum strategically to avoid overburdening students, ensuring it complements rather than competes with other academic requirements.
Pilot Integration Across Nursing Courses
Gradually expand SBE into applied nursing courses through pilot programs, assessing feasibility and outcomes before broader implementation.
Longitudinal Evaluation of Outcomes
Conduct follow-up studies to track the long-term impact of SBE on clinical preparedness and healthcare quality once students transition into professional practice.
Faculty Development and Training
Provide training for educators in simulation design, facilitation, and feedback delivery to ensure consistent quality and effectiveness across sessions.

ACKNOWLEDGEMENT
All praise to Almighty Allah, the Most Gracious and the Most Merciful, who granted us the strength, Awareness, and patience to complete this research project successfully. We are also deeply grateful to the Holy Prophet Muhammad (PBUH), whose teachings inspire compassion, dedication, and the pursuit of Awareness.
We, students of **Post-RN (Final Professional)** at the **College of Nursing, Allama Iqbal Medical College, Lahore**, would like to express our heartfelt gratitude to all those who guided and supported us throughout the journey of our research titled: "Assessing The Perceived Effectiveness Of Simulation Based Education In Enhancing Clinical Performance of Nursing Students"
First and foremost, we extend our sincerest thanks to our respected **Principal, Madam Farzana Iqbal**, for providing us with a supportive academic environment and encouraging research-based learning. Her leadership and motivation played a vital role in the completion of this project.
We are also extremely thankful to our **research supervisor, Madam Nazi Noor**, for her constant encouragement, kind support, and valuable suggestions during our academic years.
We also extend our thanks to the faculty members and administrative staff of the College of Nursing, AIMC, for their assistance whenever needed.
We are truly grateful to our fellow nursing students who participated in this study and shared their valuable time and honest responses, without which this research would not have been possible.
Fareeha Rubab
Saima Arshad
Robina Kousar
Post-RN (Final Professional)
College of Nursing,
Allama Iqbal Medical College, Lahore

REFERENCES
Abbasi, H., & Qamar, M. (2020). Using E-learning tools for practical skills in nursing education.
Pakistani Journal of Medical Pedagogy, 9(2), 55–61.
Ahmed, R., Zehra, N., & Bano, S. (2021). Simulation-based learning and its impact on communication and leadership skills among nursing students in Karachi. *Journal of Nursing Research Pakistan, 9*(1), 45–52.

Ahmed, S., Javed, H., & Rafiq, S. (2021). Effectiveness of culturally adapted simulation-based training in improving clinical competencies of nursing students in Pakistan. *Pakistan Journal of Medical and Health Sciences, 15*(4), 1234–1238.

Ayub, A., Qureshi, A., & Javed, T. (2024). The role of simulation in bridging the clinical gap in Pakistani nursing institutes. *Pakistan Journal of Clinical Education, 6*(2), 89–95.

Dow, A., Hardin, S., & Floyd, L. (2021). Improving clinical readiness through simulation: A global nursing education perspective. *Journal of Nursing Education, 60*(5), 255–261.

Fatima, S., Rehman, H., & Naseer, M. (2023). Mobile learning and virtual simulation during COVID-19: Pakistani nursing students' experience. *South Asian Journal of Nursing, 11*(1), 102–110.

Farooq, T., Malik, R., & Hussain, A. (2023). Bridging the theory-practice gap in nursing education through simulation: A qualitative analysis. *Pakistan Nursing Review, 13*(1), 67– 75.

Hanif, A., & Zafar, S. (2022). Integration of mobile technology in clinical nursing education in Pakistan: A review. *Asian Nursing Review, 3*(4), 77–83.

Iqbal, M., & Saleem, F. (2021). Evaluating the effectiveness of simulation-based education in enhancing the clinical decision-making skills of nursing students. *Journal of Nursing Education and Practice, 11*(5), 123–129.

Khan, M. I., Tariq, H., & Shahid, R. (2022). Reducing clinical stress in nursing students through simulation-based training: A study from Rawalpindi. *International Journal of Nursing Practice in Pakistan, 5*(3), 61–68.

Nasir, K., & Bibi, H. (2021). Nursing students' perception of simulation: A study from

Islamabad. *Pakistan Nursing Perspective, 7*(3), 145–151.

Park, M. Y., & Oh, P. J. (2021). The effectiveness of simulation-based education on nursing

students' clinical competency: A meta-analysis. *Nurse Education Today, 96*, 104622.

Qureshi, F., & Yasin, H. (2022). Challenges and barriers to the adoption of simulation in Pakistani nursing schools. *International Journal of Nursing Innovations, 4*(2), 112–118.

Rauf, R., & Junaid, M. (2021). Virtual learning in nursing during COVID-19: Lessons from Pakistani colleges. *Journal of Health E-Learning, 5*(1), 12–20.

Rehman, N., Abbas, M., & Tariq, S. (2023). Simulation-based clinical training and its role in building confidence among nursing students. *Clinical Nursing Research Review, 9*(4), 201– 209.

Rizvi, F., & Shah, S. (2023). Perception and readiness for mobile learning in clinical practice among Pakistani nursing students. *Pakistani Journal of Nursing Practice, 6*(1), 44–51.

Siddiqui, F., Arif, M., & Rahman, N. (2024). Challenges in clinical training for undergraduate nursing students in Pakistan. *Journal of Health and Medical Sciences, 14*(2), 132–139.

Shah, T., Javed, H., & Saleem, S. (2022). Effectiveness of simulation-based education on clinical decision-making among nursing students in Pakistan. *Journal of Nursing Education and Practice, 12*(6), 40–48.

Shin, S., Park, J. H., & Kim, J. H. (2020). Effectiveness of patient simulation in nursing education: Meta-analysis. *Nurse Education Today, 84*, 104204.

Yousaf, S., Baig, M., & Zahra, S. (2023). Enhancing clinical performance through simulation: A study from Lahore Nursing College. *Pakistani Journal of Advanced Nursing, 8*(1), 23–30.

Zahid, F., & Mehmood, A. (2022). Student perspectives on the use of mobile learning in clinical practice. *Journal of Emerging Nursing Education, 2*(1), 34–40.

Zhang, L., Wong, J. P., & Lee, A. (2023). Enhancing nursing students' clinical reasoning skills via virtual simulation: Evidence from Asian institutions. *Nurse Education in Practice, 68*, 103608.

Zubair, M., & Tariq, L. (2023). Comparative study of simulation vs traditional clinical teaching in Pakistani nursing education. *South Asian Clinical Education Journal, 7*(2), 91–98.

Annexure IL Research questionnaire

	Year of Study	**1st**	**2nd**	**3rd**		**Final**
	Items	**Strongly disagree 1**	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
F1 – Satisfaction Self-Confidence	SBE allows me to participate to clinical practices actively					
	SBE increases my self-confidence in clinical practices					
	SBE allows me to see my shortcomings.					
	SBE helps me to use theoretical information during practice					
	SBE increases the quality of healthcare.					
	I would like to receive SBE					
F2 - Clinical Competence Self-Efficacy (7-11	SBE increases my critical decision making skills.					
	SBE has a positive effect on my clinical success.					
	SBE prepares me for the real clinical environment					
	SBE decreases the risk of my making mistakes during clinical practice.					
	SBE helps me realize my shortcomings.					
F3 - Seriousness Fidelity (12-15)	it is important for me to learn various learning techniques during the SBE Process.					
	It would be helpful to integrate SBE methods to all applied courses					
	SBE increases my wish to learn					
	SBE gives an almost real clinical experience					
F4 - Bar	SBE is boring for me.					

	SBE is a waste of time. SBE increases the work load					

ANNEXURE II: CONSENT FORM

Description of the Research and Your Participation

You are invited to participate in this research study. The purpose of this research is to evaluate the **"ASSESSSMENT OF SIMULATION BASED EDUCATION IN ENHANCING CLINICAL PERFORMANCE OF NURSING STUDENTS"**

Risks and Discomforts

No known or unknown risks associated with this research.

Potential Benefits

The will be NO benefits to the participant that would result from their participation in this research.

Protection of Confidentiality

We will do everything we can to protect your privacy. Your identity will not be revealed in any publication resulting from this study.

Voluntary Participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate any time. You will not be penalized in any way should you decide not you participate or to withdraw from this study.

CONSENT

I have read this consent form and have been given the opportunity to ask questions.
I give my consent to participate in this study.

Participant's Signature _____Date: _____

(A copy of this consent form should be given to the participant)