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ORIGINAL RESEARCH

Simulation-Based Learning in Emergency Nursing Practice: A Phenomenological Study

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Abstract

Background: Simulation-based learning (SBL) is widely used in nursing education, especially in high-risk settings such as emergency departments. However, limited qualitative research has explored how emergency nurses experience simulation in clinical practice.
Purpose: This study aimed to explore emergency room nurses' lived experiences of simulation-based learning and to understand how simulation contributes to their professional development and clinical practice.
Methods: A descriptive phenomenological approach was used. Ten emergency room nurses from a public hospital under Oman's Ministry of Health were recruited using purposive sampling. Data were collected through in-depth interviews and analyzed using Colaizzi's seven-step phenomenological method to identify the meaning of participants' experiences.
Results: Three themes emerged from the analysis: (1) simulation as a bridge between theory and clinical practice, where simulation enabled nurses to translate theoretical knowledge into practical decision-making in realistic emergency scenarios; (2) developing professional confidence and clinical competence, where repeated simulation practice strengthened clinical skills, preparedness, and confidence; and (3) simulation as a strategy for improving nursing services, where participants perceived simulation as contributing to improved clinical performance, teamwork, and patient care quality. Participants also identified practical challenges, including scheduling constraints and workload demands, which limited participation in simulation activities.
Conclusion: Simulation-based learning is experienced by emergency nurses as a meaningful experiential learning process that supports the integration of theoretical knowledge with clinical practice. In addition to improving individual competencies, simulation contributes to professional confidence, teamwork, and the quality of emergency care. Further research across diverse healthcare settings is needed to explore its long-term impact on nursing practice and patient outcomes.

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1. Introduction

Emergency nursing is a specialized field that requires rapid clinical assessment, advanced technical skills, and the ability to respond effectively to life-threatening situations. Nurses working in emergency departments are often the first healthcare professionals to assess and

stabilize critically ill or injured patients. Their role includes early recognition of patient setbacks, immediate clinical intervention, and coordination with multidisciplinary teams to ensure timely and effective care (Prakoeswa et al., 2022). In such a high-pressure environment, maintaining a high level of clinical competence and decision-making accuracy is essential to ensure patient safety and quality of care.

The increasing complexity of emergency healthcare has led to a growing interest in simulation-based learning (SBL) as an educational strategy to strengthen nurses' knowledge, clinical skills, and decision-making abilities. Simulations allow healthcare professionals to engage in realistic clinical scenarios that replicate high-risk situations while maintaining patient safety. Through repeated exposure to simulated cases, nurses can practice clinical procedures, develop critical thinking, and improve teamwork in a controlled learning environment (Alharbi & Alharbi, 2022; Mohamed & Fashafsheh, 2019; Wang et al., 2021). Because of these advantages, simulation has become an essential component of nursing education and ongoing professional development in many healthcare systems.

The latest evidence further supports the effectiveness of simulation-based learning in nursing education. A systematic review reported that simulation training significantly improved knowledge acquisition, clinical performance, and decision-making ability among nursing learners (Alharbi et al., 2024). Similarly, a meta-analysis shows that simulation-based learning increases knowledge acquisition, confidence, and learning satisfaction in nursing education (Mulyadi et al., 2021). Simulation has also been recognized as an effective strategy to bridge the gap between theoretical learning and clinical practice in health education (El Hussein et al., 2022). These findings highlight the evolving role of simulation as a safe and effective approach to preparing healthcare professionals to manage complex clinical situations.

Despite these benefits, most existing research has primarily focused on evaluating the effectiveness of simulation-based learning in terms of knowledge improvement, skill development, or training outcomes (Alharbi et al., 2024; Mishra et al., 2023; Li et al., 2022; Theobald et al., 2021). Many studies have also focused on nursing students or on controlled educational environments rather than on practice nurses working in real clinical settings (Koukourikos et al., 2021). As a result, limited attention is paid to understanding how self-practicing emergency nurses experience and interpret simulation-based learning in their professional contexts. Understanding this experience is important because simulation training is inherently experiential. The way nurses view and internalize simulation activities can affect how effectively training contributes to their professional competence, confidence, and readiness for emergency care. Therefore, qualitative research is needed to explore how nurses experience simulations in real clinical settings and how these experiences shape their professional practice. The phenomenological approach is particularly appropriate for this study, as it focuses on exploring and interpreting individuals' life experiences and the meanings they attach to them (Giorgi, 2009; Husserl, 1983; Husserl, 2012). By examining the perspectives of emergency room nurses who regularly participate in simulation training, phenomenological inquiry allows for a deeper understanding of how simulation-based learning is experienced, interpreted, and integrated into everyday clinical practice.

In Oman, a public hospital in Muscat under the Ministry of Health serves as a national trauma and emergency center and has incorporated simulation-based learning into its ongoing professional development programs for emergency nurses. However, limited research has explored how emergency nurses in this context perceive and experience simulation-based training in their clinical practice. Therefore, this study aimed to explore the lived experiences of emergency room nurses related to simulation-based learning. The findings of this study are expected to provide insights to inform the development of more contextually relevant simulation training programs and to support improvements in emergency nursing education and practice.

2. Methods

2.1. Research design

This research employed a qualitative method with a descriptive phenomenological approach, which focuses on describing the essence of experiences as they appear to consciousness (Husserl, 1983; Husserl, 2012). In qualitative health research, this approach is used to explore individuals' lived experiences of a particular phenomenon (Giorgi, 2009), and in this study, it was applied to explore the lived experiences of Emergency Room (ER) nurses in simulation-based learning.

2.2. Setting and samples

The study was conducted at a public hospital in Muscat, Oman, under the Ministry of Health. The hospital is a referral center that provides specialized healthcare services across multiple disciplines, including emergency medicine, surgery, and critical care, and is supported by a range of diagnostic and allied health services. Participants were recruited using purposive sampling to include emergency nurses with relevant experience in simulation-based learning (Campbell et al., 2020). Interviews continued until data saturation was reached, at which point no new themes or insights emerged (Saunders et al., 2018). Saturation occurred after the eighth interview, and two additional interviews were conducted to confirm the stability of the findings. In total, ten (n = 10) emergency room nurses participated in the study.

The inclusion criteria were as follows: (1) registered nurses working in the Emergency Room; (2) at least two years of experience with simulation-based learning; and (3) willingness to participate and provide in-depth narratives. The exclusion criteria were as follows: (1) nurses who had never participated in simulation-based learning; (2) nurses assigned to administrative or non-clinical roles during the study period; and (3) individuals unavailable during data collection or unwilling to be interviewed.

2.3. Data collection

Semi-structured, in-depth interviews were conducted to explore participants' lived experiences of simulation-based learning. The interviews were conducted by two members of the research team (OPT and ASHAA), who are registered nurses working in the same hospital where the study was conducted. As insider researchers familiar with the clinical context, they were able to establish rapport with participants while maintaining professional boundaries during the interviews. Neither interviewer had a direct supervisory relationship with the participants.

Interviews were conducted in Arabic and English, the primary working languages used by nurses in the hospital. Each interview lasted approximately 45–60 minutes and took place in a private room within the hospital to ensure participants' comfort and confidentiality. With participants' consent, interviews were audio-recorded using a digital voice recorder and later transcribed verbatim for analysis. Field notes were also taken during and immediately after the interviews to capture contextual observations and initial reflections. Data collection took place between August 2023 and November 2023.

A semi-structured interview guide consisting of eight open-ended questions was used to facilitate the interviews. The questions explored participants' experiences, meanings, perceived impacts, and contextual factors related to simulation-based learning (Table 1). The interview guide was developed based on relevant literature (Campbell et al., 2021; Cant & Cooper, 2010; Cook et al., 2011; INACSL Standards Committee, 2021; Jeffries, 2016; Shin et al., 2015) on simulation-based learning and phenomenological interviewing approaches. Prior to the main data collection, the guide was piloted with two emergency nurses who met the inclusion criteria but were not included in the final sample. Minor revisions were made to improve the clarity and flow of the questions before conducting the main interviews.

2.4. Data analysis

Data were analyzed using Colaizzi's seven-step method for phenomenological research (Colaizzi, 1978). First, all interview transcripts were read repeatedly by the principal investigator (HLR) to gain an overall understanding of the participants' narratives. During this stage, the researcher attempted to bracket personal assumptions to remain attentive to the meanings expressed in the participants' accounts. Second, significant statements related to participants' experiences of simulation-based learning were identified and extracted from each transcript. These statements were carefully reviewed to capture expressions that reflect meaningful aspects of the phenomenon under investigation. Third, meanings were derived from significant statements during the initial coding process conducted by HLR. The coding and interpretation were then reviewed by MTR and EM to enhance analytical rigor and ensure that interpretations remained grounded in the participants' narratives. Fourth, meanings were organized into clusters of themes. The formulated meanings were grouped into thematic clusters representing common patterns across the participants' experiences. The thematic structure was discussed among members of the research team, and any differences in interpretation were resolved through

discussion until consensus was reached. Fifth, an exhaustive description of the phenomenon was developed by integrating thematic findings into a comprehensive narrative describing emergency nurses' experiences of simulation-based learning. Sixth, the essential structure of the phenomenon was formulated by synthesizing the core meanings that emerge from the thematic analysis. Finally, the preliminary findings were returned to multiple participants for validation (member checking) to ensure that the interpretations accurately reflected their experiences. Communication with participants during this process was facilitated by OPT and ASHAA, who conducted the interviews and coordinated participant access.

Table 1. Semi-structured interview questions

Interview Question	Meaning of the Question
1. What does Simulation-Based Learning mean to you as an ER nurse?	Conceptual understanding of simulation-based learning
2. Can you describe your experiences using Simulation-Based Learning in the Emergency Department?	Practical experiences of using simulation-based learning
3. How has Simulation-Based Learning influenced your clinical practice, confidence, and professional growth?	Professional impact on clinical practice and confidence
4. Since when have you been exposed to Simulation-Based Learning, and how has your understanding developed over time?	Development of experience and understanding over time
5. What challenges or barriers have you encountered when participating in Simulation-Based Learning sessions?	Barriers encountered during participation
6. What factors help or motivate you to participate effectively in Simulation-Based Learning?	Supporting factors that motivate participation
7. How does Simulation-Based Learning influence the quality of nursing services in emergency care?	Impact on the quality of nursing care
8. How do you feel during and after participating in simulation sessions?	Emotional experience during simulation

2.5. Trustworthiness/rigor

The rigor of the study was ensured using Lincoln and Guba's (1985) criteria of credibility, transferability, dependability, and confirmability. Credibility was strengthened through prolonged engagement with the data, discussions among research team members during the coding and theme development process, and member checking, in which participants were invited to review and validate the findings. Transferability was supported by providing detailed descriptions of the study setting, participants, and context, enabling readers to assess the applicability of the findings to other settings. Dependability was addressed by maintaining clear documentation of the research process, including interview procedures, transcription, and coding steps. Finally, confirmability was ensured by maintaining reflective records throughout the research process and by discussing interpretations that arose within the research team to minimize individual researcher bias.

Despite these measures, several potential data biases were acknowledged: (1) selection bias may have occurred, as participation was voluntary and those with more favorable simulation experiences may have been more inclined to participate; (2) recall bias is possible because participants may have had difficulty accurately recalling earlier experiences with simulation-based learning; (3) researcher bias was minimized by bracketing personal assumptions, yet complete elimination of subjectivity is challenging in qualitative research; and (4) social desirability bias may have influenced responses, as participants might have presented experiences in a more positive light, especially in a professional setting. These limitations were recognized and addressed through triangulation of data sources (interviews, field notes) and peer debriefing to enhance trustworthiness.

2.6. Ethical consideration

Ethical approval was obtained from the Health Studies and Research Approval Committee (HSRAC), Ministry of Health, Oman (Approval No. MoH/CSR/23/27040, dated 7 August 2023). Permission from institutional gatekeepers, including the nursing administration and the Emergency Room unit manager, was secured to access the study site and recruit eligible participants. All participants provided written informed consent prior to participation. To ensure anonymity and confidentiality, each participant was assigned a code (P1–P10). These codes were used in reporting quotations instead of pseudonyms.

3. Results

3.1 Participant demographic characteristics

Ten emergency room nurses participated in this study, consisting of six females and four males. Participants had between 9 and 20 years of emergency nursing experience and had all received two years of simulation-based learning as part of institutional training. Participant characteristics are presented in Table 2.

Table 2. Participant demographic characteristics (n = 10)

Participant Code	Gender	Years of ER Experience	Years of SBL Experience
P1	Female	20	2
P2	Male	19.5	2
P3	Female	10	2
P4	Male	9	2
P5	Female	9	2
P6	Male	9	2
P7	Female	9	2
P8	Female	9	2
P9	Male	9	2
P10	Female	12	2

3.2 Thematic analysis

Analysis of the interview transcripts using Colaizzi's phenomenological method revealed three themes that describe the lived experiences of emergency nurses regarding simulation-based learning. Identified themes are presented in Figure 1.

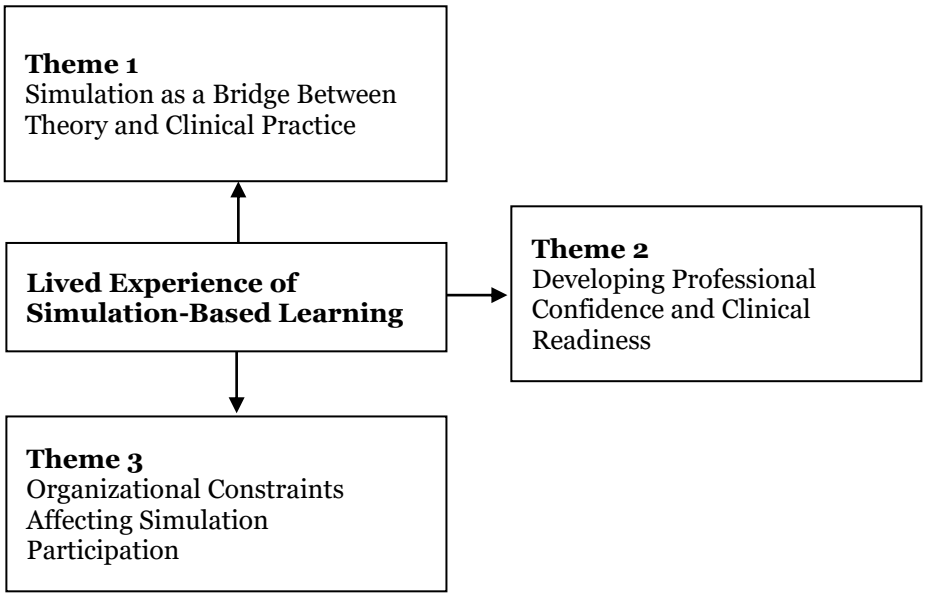

Figure 1. Thematic structure of emergency nurses' lived experiences of simulation-based learning.

3.2.1 Theme 1: Simulation as a bridge between theory and clinical practice

Participants described simulation-based learning as a meaningful educational experience that helped bridge theoretical knowledge and real clinical practice. Through realistic scenarios and role-based activities, simulations gave nurses the opportunity to translate theoretical understanding into practical clinical action. This process allowed them to practice responding to emergencies in a safe environment while developing clinical reasoning and decision-making skills.

The participants also emphasized the importance of scenario-based learning in helping them understand their clinical roles and responsibilities during emergency situations. They explained that the simulation scenario required nurses to apply knowledge and critical thinking while performing the assigned roles, as expressed below:

> *By creating a real-life scenario and assuming a role, you have to apply your knowledge, skills, and critical thinking to the given scenario and approach it according to the roles that have been given.* (P1)

> *During simulation sessions, we are given specific roles that require us to think and act as we would in real emergency situations. It helps us apply our clinical knowledge and skills while using critical thinking to respond appropriately to the scenario.* (P3)

Participants also described the simulation as an interactive learning method that challenged learners to actively engage with complex clinical problems. In this sense, simulation was perceived as more than just a teaching technique; it was experienced as a structured environment that promotes active learning and problem-solving.

> *Simulation-based learning allows us to practice in situations that closely resemble real emergency cases. Through these challenging scenarios, we are encouraged to think critically, apply our knowledge, and solve problems as a team in order to manage the patient effectively.* (P5)

> *Simulation-based learning is an educational method that helps participants gain knowledge and test their skills by placing them in challenging scenarios that require them to actively solve problems.* (P10)

For some participants, simulation served as a mechanism by which theoretical knowledge became practical competence. Through repeated involvement in simulation activities, participants reported developing the ability to translate knowledge into clinical skills applicable to real-life patient care situations.

> *Simulation-based learning serves as a bridge from knowledge, turning what we learn theoretically into more effective skills that can be applied in real clinical practice. Through the simulation scenarios, we are able to understand how to use our knowledge in actual situations, especially when dealing with emergency cases.* (P4)

Other participants described simulation as a form of experiential learning that mirrored actual clinical practice, allowing learners to experience realistic situations before encountering them in actual patient care.

> *It is a form of experiential learning that provides learners with real clinical practice situations, allowing us to experience scenarios that closely resemble what happens in the emergency department. Through these simulation activities, we are able to practice our responses and understand how to manage patient situations more effectively in real clinical settings.* (P9)

Together, these narratives illustrated that nurses experienced simulation-based learning as a practical, experiential process that connects theoretical knowledge to clinical applications. Through realistic scenarios, simulations created a learning environment in which nurses developed clinical assessment skills and practice responding to emergencies in a structured, supportive setting.

3.2.2 Theme 2: Developing professional confidence and clinical competence

Participants also explained how simulation-based learning contributed to strengthening their professional confidence and clinical competence. Repeated participation in simulation activities allowed nurses to practice clinical procedures, refine technical skills, and gain confidence in managing emergency situations.

For some participants, simulations played a direct role in boosting their confidence while performing clinical tasks in the workplace.

> *This boosts my confidence level at work, especially my clinical skills. When we participate in simulation sessions, we are able to practice procedures and responses to emergency situations, and this helps me feel more confident when facing similar cases in real patient care.* (P5)

> *Simulation training helps me become more confident because we can practice the clinical procedures and decision-making before encountering real patients in the emergency department.* (P3)

> *When we go through different scenarios during simulation, it allows us to understand what to do in difficult situations, so it improves our confidence in handling emergency cases.* (P1)

Other participants highlighted that the simulation allowed nurses to identify areas for improvement and gradually strengthen their competence through practice and reflection.

> *To improve staff competency… whatever weak point we have, it will improve. During simulation sessions, we are able to recognize the areas where we need improvement, and this helps us strengthen our clinical competence through practice and feedback.* (P2)

> *Simulation allows us to see what we did wrong and how we can correct it, so over time it helps improve our competency and performance in real emergency situations.* (P6)

Simulation sessions were also described as a valuable opportunity for both experienced nurses and newly joined staff to retain and strengthen their knowledge and skills. One participant explained that these activities helped ensure that staff remained clinically prepared for emergency situations.

> *We use it in order to help everyone refresh their knowledge and clinical skills for the old staff and for the newly joined staff to enhance ED nursing skills. Through simulation sessions, we are able to review important procedures and practice how to respond in emergency situations.* (P7)

> *Simulation helps both experienced and newly joined nurses stay prepared because it gives us the chance to review our knowledge and practice emergency management in a controlled environment.* (P4)

> *It is a good way to refresh our clinical knowledge and ensure that everyone in the team is ready to respond to different emergency cases.* (P9)

Similarly, other participants emphasized that simulations helped maintain professional expertise in a clinical setting, as expressed by some participants as follows:

This is useful for all to refresh their knowledge and clinical expertise at work. Simulation sessions help us review essential emergency procedures and keep our clinical skills up to date. (P8)

It reminds us of the correct steps in managing emergency patients and helps maintain our professional competence in daily practice. (P10)

These findings showed that simulation-based learning supported sustainable professional development by strengthening confidence and competence. Through repeated involvement in realistic scenarios, nurses developed greater readiness to respond effectively to complex emergencies.

3.2.3 Theme 3: Simulation as a Strategy for Improving Nursing Services

Beyond individual learning experiences, participants also reflected on the broader impact of simulation-based learning on nursing services and patient care. Strengthening clinical knowledge and competence through simulation was perceived to improve the quality of nursing care in emergency settings. Some participants explained that developing clinical expertise through simulation ultimately led to improvements in nursing services.

This will improve the nursing service because clinical expertise is the outcome of SBL. When nurses improve their knowledge and skills through simulation, it helps us deliver better nursing care for patients in emergency situations. (P4)

When nurses are more competent and confident after simulation training, it directly contributes to improving the quality of nursing services in the emergency department. (P6)

Simulation helps nurses develop better clinical understanding, and this eventually improves how we provide care to patients. (P1)

A similar perspective was expressed by two participants who believe that strengthening nurses' knowledge and competence through simulation improved the overall quality of patient care.

Through SBL, I believe nursing services will improve due to higher-quality care. When nurses are more knowledgeable and confident in handling emergency situations, the quality of care provided to patients also improves. (P7)

Simulation training helps nurses practice different patient scenarios, and this preparation helps ensure that patients receive safer and more effective care. (P3)

Participants also highlighted the role of simulation as an important component of clinical education. Some participants also stated that simulations helped strengthen professional competencies while supporting the improvement of service quality.

Simulation-based teaching has become an important part of clinical teaching in nursing, as well as improving nurses' skills, knowledge, and quality of care. It provides an opportunity for nurses to practice clinical situations before encountering them in real patient care. (P9)

It is an effective teaching method because it allows nurses to practice their skills and improve their clinical knowledge while ensuring patient safety. (P5)

Other participants emphasized that simulations helped bridge the gap between clinical training and actual healthcare practice.

Simulation-based learning techniques help in connecting the gaps between healthcare work and nursing services. It allows us to experience clinical situations similar to real cases and understand how to respond effectively. (P10)

Through simulation, we can practice scenarios that are very close to real emergency cases, which helps connect what we learn during training with our daily clinical work. (P8)

Simulation training helps nurses become more organized and confident when managing emergency situations. When we practice different scenarios, it improves how we work and communicate with the team, which ultimately enhances the nursing service provided to patients. (P2)

This experience demonstrated that simulation-based learning contributed not only to individual professional development but also to broader improvements in nursing practice and patient care. These findings revealed that emergency nurses viewed simulation-based learning as more than a training method. Rather, it was understood as a meaningful experiential process in which nurses translated theoretical knowledge into clinical action, strengthened their professional confidence, and continued to refine their clinical competencies. Through repeated engagement in realistic scenarios, simulations helped nurses develop greater readiness to respond to complex patient conditions and recognize their broader contribution to improving teamwork, professional performance, and overall quality of patient care in emergency settings.

4. Discussion

This study identified three main themes related to emergency nurses' experiences of simulation-based learning: simulation as a bridge between theory and clinical practice, the development of professional confidence and clinical competence, and simulation as a strategy for improving nursing services and the quality of patient care.

4.1 Theme 1: Simulation as a bridge between theory and clinical practice

The findings of this study show that emergency nurses view simulation-based learning as a meaningful bridge connecting theoretical knowledge with clinical action. Rather than functioning solely as a technical training activity, simulations were described by participants as a learning environment in which abstract knowledge becomes actionable through realistic clinical scenarios. Through role-based simulation exercises, nurses can apply theoretical understanding, clinical reasoning, and decision-making skills in situations that closely mirror real emergency conditions.

This experience reflects a long-recognized challenge in nursing education: translating theoretical knowledge into effective clinical practice. Simulation-based learning has been widely recognized as a pedagogical approach that supports this transition by providing structured opportunities for experiential learning. For example, simulation-based clinical education has been described as an effective framework for strengthening clinical learning, especially in complex healthcare settings where direct clinical exposure may be limited (Salifu et al., 2022). Similarly, experiential simulation programs have been shown to positively influence the development of clinical assessments by allowing learners to engage with realistic patient scenarios in a safe, controlled environment (Uppor et al., 2024).

A recent systematic review has also highlighted that simulation-based education helps bridge the long-recognized gap between theoretical knowledge and clinical practice in nursing education (Daneshfar & Moonaghi, 2025). Evidence from previous research also supports the role of simulation in strengthening the acquisition of clinical knowledge and competence. Simulation-based training has been shown to significantly improve nurses' clinical knowledge and performance when managing emergency situations (Elhakam et al., 2022; Prakoeswa et al., 2022). In addition, scenario-based simulations encourage learners to analyze complex clinical situations collaboratively, thereby strengthening diagnostic reasoning and decision-making processes (Radkowitsch et al., 2021). Educational interventions using simulations have also shown measurable improvements in knowledge development and learning outcomes among nursing students (Haukedal et al., 2018).

Furthermore, simulation allows learners to transfer knowledge and skills from a simulated environment to real clinical practice (Hustad et al., 2019). From a phenomenological perspective, these findings suggest that simulation allows nurses to experience learning not only as knowledge acquisition but as a life process in which theoretical understanding becomes meaningful through practical engagement. By recreating realistic clinical situations, simulations allow nurses to connect theoretical knowledge with the actions required in real-life patient care.

4.2 Theme 2: Developing professional confidence and clinical competence

Another important finding from the study relates to the development of professional confidence and clinical competence among emergency nurses. Participants described simulation-based learning as a setting that enables repeated practice of emergency procedures, allowing them to refine their clinical skills while gradually strengthening their confidence in managing complex situations. Through repeated exposure to realistic clinical scenarios, simulation is experienced not only as a training method but as an ongoing process of professional development.

Integrative reviews also report that repeated simulation experiences contribute to increased nurses' confidence, critical thinking, and clinical competence (Al Gharibi & Arulappan, 2020). This experience aligns with existing evidence that simulation-based education significantly contributes to the development of clinical competence and professional confidence. For example, simulation-based interventions have been shown to increase nurses' confidence in caring for critically ill patients following simulated training activities (Almeida et al., 2019). Similarly, a systematic review of simulation-based education reported an increase in knowledge, clinical skills, and professional confidence among students and health practitioners (Alanazi et al., 2017).

Simulation-based learning supports the development of professional competencies through experiential and collaborative learning processes in clinical practice (Kaldheim et al., 2023). The reflective component of simulation also plays an important role in professional learning. The debriefing sessions encourage participants to analyze their performance, identify areas for improvement, and integrate new insights into future clinical practice. Reflective practice has been widely recognized as an essential element of clinical learning, allowing healthcare professionals to develop a deeper understanding and professional self-awareness (Hayes et al., 2017). Through this process, simulation becomes a space not only for practicing clinical procedures but also for strengthening professional identity and confidence.

In addition, simulation-based nursing education has been widely recognized as an effective strategy for improving clinical competence and decision-making abilities in nursing practice (Oh & Park, 2023). In emergency settings, simulated training has also been associated with increased preparedness among nurses when responding to urgent or unexpected clinical situations (Wang et al., 2021). Consistent with these findings, participants in this study described simulation as an important learning experience that increased their preparedness and confidence when dealing with real emergency cases. From a phenomenological perspective, participants' experiences showed that simulation-based learning contributes to the gradual development of professional competencies. Through repeated involvement in simulated scenarios, nurses develop confidence not only in their technical abilities but also in their capacity to respond effectively to complex clinical situations.

4.3 Theme 3: Simulation as a strategy for improving nursing services

Participants also described simulation-based learning as contributing to improvements in nursing practice and the overall quality of patient care. The knowledge and skills developed through simulation are thought to directly affect nurses' ability to provide safe and effective care in emergency situations. In this context, simulations are experienced not only as individual learning opportunities but also as a collaborative process that reinforces professional practice in emergency departments. This experience reflects the broader role of simulation in improving clinical performance and patient safety in healthcare settings. Systematic evidence also suggests that simulation training for acute care nurses improves patient safety outcomes and clinical performance in healthcare settings (Lewis et al., 2019). Simulation-based education has been widely recognized as an effective strategy for developing the technical and non-technical competencies required in nursing practice (Cant & Cooper, 2017). In particular, simulation training has been shown to improve communication, teamwork, and collaborative decision-making skills among healthcare professionals (Mohamed & Fashafsheh, 2019).

Debriefing on simulation activities also supports the transfer of learning into clinical practice. Through structured reflection, participants can analyze their actions, discuss alternative approaches, and apply lessons learned to real-life clinical situations (Johnston et al., 2017). In this way, simulations serve as a bridge between educational experience and everyday clinical practice. Simulations have also been recognized as an important component of contemporary nursing education because they allow healthcare professionals to practice complex clinical scenarios in a safe and controlled environment (Koukourikos et al., 2021). In emergency contexts,

simulation-based training has been associated with increased preparedness, teamwork, and communication among healthcare teams responding to critical situations (Wang et al., 2021). Together, participants' experiences showed that simulation-based learning contributes not only to the development of individual skills but also to strengthening collaborative practices within healthcare teams. From a phenomenological perspective, simulation can be understood as a shared learning experience that supports professional growth while improving the quality and safety of nursing care in emergency settings.

5. Implications and limitations

The findings of this study highlight the importance of integrating simulation-based learning into emergency nursing education and practice. Simulation was experienced as a bridge between theoretical knowledge and clinical practice, suggesting the need for realistic, scenario-based training to enhance clinical reasoning and decision-making. In addition, the improvement in confidence and competence indicates that regular, structured simulation sessions can strengthen nurses' preparedness to manage complex emergency cases. The findings also suggest that simulation-based training should emphasize teamwork, communication, and role clarity to improve collaborative practice and the quality of patient care. Healthcare institutions are encouraged to implement accessible and structured simulation programs, while policymakers may integrate simulation-based learning into continuing professional development to enhance patient safety in emergency care.

Some limitations should be considered when interpreting the findings of this study. First, the study involved a relatively small sample of 10 emergency room nurses from a single hospital, which may limit the transferability of the findings to other healthcare settings. Second, the data are based on participants' self-reported experiences, which may be subject to memory bias. In addition, participants reported several practical challenges in implementing simulation-based learning in clinical settings, including scheduling constraints, shift responsibilities, and unclear role assignments during simulation sessions. These contextual factors can affect the consistency and accessibility of simulation training for nurses working on different shifts. Although efforts were made to minimize researcher bias through collaborative analysis and reflective discussions among the research team, subjectivity cannot be completely eliminated in qualitative research.

6. Conclusion

This study aimed to explore the lived experiences of emergency room nurses regarding simulation-based learning in clinical practice. The findings showed that nurses experience simulation-based learning as a meaningful, experiential learning process that strengthens clinical competence, decision-making abilities, professional confidence, and responsibility in emergency care. Participants described the simulation as a bridge between theoretical knowledge and real clinical practice, allowing them to apply clinical reasoning and respond more effectively in emergency situations.

Overall, simulation-based learning plays an important role in supporting the technical and non-technical competencies required in emergency nursing practice and contributes to improving the quality and safety of patient care. These findings suggest the need to integrate simulation-based learning into ongoing professional development programs, supported by adequate resources, structured implementation, and institutional support. Future studies involving multiple institutions and a larger sample are recommended to further explore its long-term impact on nursing practice and patient outcomes.

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Author contribution

HLR: Conceptualization, study design, data analysis, manuscript drafting, and final manuscript revision and submission. OPT and ASHAA: Data collection, conducting interviews, and coordinating participants. YY and TJFW: Methodological development, qualitative framework guidance, and manuscript revision. MTR and EM: Data analysis support and thematic coding validation. SBB: Literature review and synthesis. ECB and JDDL: Research instrument development and academic proofreading. JBP: Discussion development and theoretical integration. WLTD: Clinical review and formulation of practice recommendations. HNV: Scholarly editing and methodological consistency review. All authors contributed to interpreting the findings and approved the final version of the manuscript.

Conflict of interest

The authors declare no conflict of interest

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Declaration of use of AI in scientific writing

The authors declare that ChatGPT (OpenAI) was used solely to improve the language, grammar, and readability of the manuscript. ChatGPT did not contribute to the development of the research concepts, study design, data analysis, interpretation of results, or conclusions.

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