Central European Journal of Nursing and Midwifery

Cent Eur J Nurs Midw 2026;17(2):2438–2445
doi: 10.15452/CEJNM.2026.17.0012

ORIGINAL PAPER

Undergraduate nursing students' reflections on simulation-based learning: a qualitative study

Jakob Renko, Helena Skočir, Patrik Pucer, Igor Karnjuš

Faculty of Health Sciences, University of Primorska, Slovenia

Received September 16, 2025; Accepted May 14, 2026.

Abstract

Aim: To gain a deeper understanding of undergraduate nursing students' perspectives on simulation-based learning (SBL) conducted after clinical placements, with attention to perceived benefits, learning experiences, and suggested improvements. *Design:* An exploratory qualitative approach was employed. Following an SBL experience, an analysis of students' written reflections was conducted. *Methods:* Written reflections of 146 second-year nursing students were analyzed after they had participated in high-fidelity simulations followed by a structured debriefing. The students' responses were examined using conventional content analysis. *Results:* Three themes emerged: perceived benefits, experiential aspects, and suggestions for improvement. Students reported improved self-confidence, teamwork, communication, and critical thinking skills. They appreciated the link between theory and practice, as well as the opportunity to practice rare but essential cases. As the scenarios progressed, their emotions shifted from anxiety to confidence, emphasizing the role of debriefing in reflection and learning. Students suggested allocating more time to simulations, diversifying the scenarios, and partially replacing clinical placements with SBL. *Conclusion:* Post-clinical simulations provide an effective bridge between theory and practice, enhancing students' technical, non-technical, and reflective skills, while elevating their professional preparedness. Strategic integration of SBL before and after clinical placement could strengthen curricula, ensure exposure to essential clinical scenarios, and enhance patient safety.

Keywords: high-fidelity simulation, non-technical skills, nursing education, reflective learning, simulation-based learning.

Introduction

Simulation-based learning (SBL), a learning modality that provides a safe and regulated environment in which students can develop and improve key clinical skills, has become an integral part of contemporary nursing education. Unlike traditional clinical placements, simulations – often referred to as simulation-based experiences when describing specific learning activities – allow for intentional practice, repetition, and structured feedback, thus enabling students to refine their skills without compromising patient safety (Tamilselvan et al., 2023). High-fidelity simulations, in particular, create realistic scenarios that promote experiential learning and prepare students for increasingly complex clinical demands (Chow et al., 2023).

SBL is an effective addition to nursing education and is now commonly introduced before students enter the clinical setting (Shin et al., 2015). Numerous studies have demonstrated that simulation improves learning outcomes, supports skill development, and prepares students for clinical practice (Alshehry et al., 2021; Jallad, 2025; Shin et al., 2015). It also enables nursing educators to optimize their teaching approaches. The benefits of SBL have been recognized not only in nursing, but also in other health professions that require clinical exposure, including physiotherapy, pharmacy, radiology, speech pathology, and dietetics (Squires et al., 2022). Recent review studies confirm that SBL promotes technical competence, emotional engagement, and professional growth in nursing students (Alharbi et al., 2024; Tamilselvan et al., 2023).

In addition to the acquisition of technical skills, SBL has also been associated with improvements in self-efficacy and perceived clinical competence. A study by Fawaz and Alsalamah (2022) showed that nursing students in Lebanon and Saudi Arabia who participated in SBL reported higher levels of self-efficacy and competence. Notably, self-efficacy was identified as a predictor

Corresponding author: Jakob Renko, Faculty of Health Sciences, University of Primorska, Polje 42, 6310 Izola, Slovenia; email: jakob.renko@fvz.upr.si

of perceived clinical competence. These results underscore the efficacy of simulation in enhancing students' technical performance while boosting their confidence and readiness for nursing practice.

Reflection has been identified as a fundamental pedagogical component of SBL methods (Van Vuuren, 2016). Debriefing combined with reflective writing is a pedagogical strategy that aims to encourage students to analytically reflect on their actions and decision-making processes and to integrate theoretical knowledge into clinical application. This process has been shown to strengthen critical thinking, teamwork, and communication, while promoting self-confidence and motivation (Jallad, 2025; Kolb, 1984). Reflection is therefore an important mechanism through which experiential learning is translated into deeper understanding and long-term competence.

Despite extensive research on the benefits of SBL, few studies have examined students' personal reflections on these experiences. Systematic reviews have highlighted that while SBL is widely associated with positive outcomes, it also presents challenges, such as stress, authenticity, and variation in learning experiences (Alharbi et al., 2024; Tamilselvan et al., 2023). It is therefore suggested that a close examination of students' reflections may offer valuable insights into how simulations are perceived, experienced, and evaluated from a learner's perspective. This would contribute to a more nuanced understanding of their educational value. It is important to note that these considerations are not limited to the European higher education landscape. In numerous regions, particularly in low- and middle-income countries, nursing curricula struggle with limited placement opportunities, unequal access to clinical experiences, and increasing enrollment rates (Ntumi, 2025). SBL therefore offers a valuable and equitable pedagogical strategy that can be employed across diverse contexts to ensure that all students acquire the essential competencies for safe and effective practice.

To provide a comprehensive evaluation of SBL, this study focuses on three related domains: perceived benefits, learning experiences, and suggestions for improvement. The perceived benefits seek to validate the pedagogical approach and explain why this method should be used. The learning experience provides insight into the process of SBL, and the suggestions for improvement guide future actions in this specific field. Together, these three domains provide a holistic evaluation of what works, how it works, and how it can be sustained and improved. This multidimensional approach is grounded in the CIPP model for evaluation (Stufflebeam, 2003).

Aim

This study aimed to gain a deeper understanding of how undergraduate nursing students reflect on SBL conducted following their clinical placements, with particular focus on perceived benefits, learning experiences, and suggestions for improvement. Student reflections on their SBL experiences formed the empirical basis for this analysis. Accordingly, the following research question was formulated: How do undergraduate nursing students perceive the educational value, experiential impact, and opportunities for improvement of SBL?

Methods

Design

In terms of research design, we adopted an exploratory qualitative approach. Following SBL, we reviewed students' written reflections. Using these reflections allowed us to analyze a larger sample of data in a relatively inexpensive and practical way.

Sample

Before entering the clinical setting, undergraduate nursing students must first complete training in a simulated environment and acquire specific knowledge and skills needed in a particular area of patient care. In the second year of their studies, their exposure to the simulated environment is still primarily focused on skill acquisition using part-task simulators rather than more complex high-fidelity scenarios involving mannequins capable of reproducing various pathophysiological patient conditions.

At the University of Primorska, Faculty of Health Sciences, nursing students undertake clinical training in medical and surgical wards during the second year of their studies. In our study, participants completed additional hours in a simulated environment after their clinical training. The simulation took place at the Faculty Training Center, located on the university campus. The classroom was set up to resemble the clinical environment, with all scenarios taking place at the bedside. Prior to the SBL, students were tasked with reading and reflecting on acute care literature, focusing on the Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach and Identification, Situation, Background, Assessment

and Recommendation (ISBAR) communication. The scenarios were performed using a high-fidelity mannequin (Gaumard Hal S1000®), connected to a vital signs monitor. The SBL was conducted by trained teaching staff.

The SBL scenarios were based on real-life experiences of acute care nurses and aligned with the course content and curriculum. Upon arriving at the training center, students were briefed on the course structure, scenario topics, medical equipment, and mannequin functionality. The scenarios addressed the following topics: acute coronary syndrome, acute respiratory distress, hypoglycemia, head injury, and hypovolemic shock. For each scenario, students were divided into groups of two or three, and the simulation training was scheduled to last four hours.

Each student involved in the scenario was assigned the role of either an acute care nurse or an observer. The observers were stationed in a debriefing room with video access to observe the scenario in real time. Each scenario was followed by a debriefing session, during which the students reflected on their learning process. The study was conducted over two academic years, from March 2021 to May 2023. A total of 146 second-year students (112 women and 34 men) participated in the SBL.

Data collection

Following the simulation course, students were asked to voluntarily participate in the research by completing a survey. The survey included a questionnaire to collect background information, followed by a series of open-ended questions and a question to evaluate the SBL, which collected quantitative data. The survey was designed based on a literature review of the field and the authors' own considerations to align with the aim of the study. All 146 students who participated in the simulation course agreed to complete the questionnaire. The open-ended questions are listed in Table 1.

Table 1 Open-ended questions included in the questionnaire

Question number	Question
1	What was good about the simulations?
2	What are the benefits of using simulation as a learning approach?
3	What new skills would you like to learn through simulations?
4	How did you experience the simulations?
5	What could be improved or changed about the simulations?

Data analysis

A qualitative content analysis was conducted to explore nursing students' reflections on the SBL. This approach is considered appropriate for analyzing written textual data to systematically describe meaning and identify recurring patterns or categories (Van Vuuren, 2016). Student responses to five open-ended questions were collated into a single dataset. The analysis followed the conventional content analysis approach and included the following steps (Elo & Kyngäs, 2008): (i) the data were subjected to repeated reading to achieve immersion and gain an overall sense of the content (JR); (ii) the meaningful units were then open coded (the first 10 surveys were coded by JR, PP, and IK to establish a common ground for the context, the subsequent surveys were coded by JR); (iii) similar codes were grouped into subcategories; (iv) the subcategories were abstracted into broader themes; (v) the final themes were refined and validated through discussion between three independent researchers (JR, PP, and IK). All researchers possessed extensive experience in qualitative analysis and had no existing relationship with the participants other than teacher-student relationships. Data management and analysis were conducted using the NVivo 1.6.1 software package (QSR International Pty Ltd). The quantitative data collected was analyzed using basic descriptive statistics to complement the qualitative content analysis. IBM SPSS Statistics 29 was used for this part of the data analysis.

Results

Content analysis of student reflections identified three main themes and nine subthemes. The themes that emerged were the perceived benefits of simulation-based learning, the experiential aspects of simulation, and suggestions for improvement. The themes and associated subthemes are presented in Table 2.

Perceived benefits of simulation-based learning

Students asserted that simulation-based learning offered numerous educational advantages, particularly in developing both technical and non-technical skills, enhancing confidence, and promoting critical thinking. There was also

a strong emphasis on integrating theoretical concepts into practical clinical settings.

Students emphasized that the simulations allowed them to consolidate a wide range of practical skills, including systematic patient management and application of the ABCDE approach, and to repeat technical procedures, such as inserting an intravenous line or administering therapy. One student pointed out: *"During the simulations, I was able to repeat many technical skills, such as placing an IV line, using the ABCDE approach, and administering therapy, which helped me to feel more confident."* Emphasis was also placed on non-technical competencies, with frequent references made to communication, teamwork, and utilization of structured communication tools. For example, one student stated: *"I learned the importance of communication in emergencies and how to work as part of a team."* Simulations were shown to create an environment that encourages the development of confidence, critical thinking, and personal reflection. One student commented: *"I felt better prepared to make decisions than in clinical practice, where I mainly observed."* Moreover, SBL effectively translates theoretical knowledge into clinical application. This was emphasized in the following response: *"The link between what we study and the way we treat patients became much clearer."*

Table 2 Coding structure of themes and subthemes

Theme	Subtheme
Perceived benefits of simulation-based learning	Practical skills development
	Non-technical skills (communication, teamwork)
	Confidence and critical thinking
	Linking theory and practice
Experiential aspects of simulation	Working under pressure
	Engagement and realism
	Emotional responses
Suggestions for improvement	More time for simulations
	Replacing part of clinical placements

Experiential aspects of simulation

In the present study, participants described the simulation-based learning experience as highly engaging and emotionally intense. They further characterized this experience as involving work under pressure, a strong sense of realism, and dynamic emotional responses.

Students frequently described the simulations as being very similar to real hospital practice and the environment as highly engaging and realistic. They also reported experiencing a range of emotional responses, including stress and discomfort at the commencement of the sessions, which transitioned to a state of increased calmness and confidence as the scenarios unfolded. One of the students stated: *"It felt very real and fun – one of the most positive learning experiences. I was stressed out, but it taught me to react quickly and to stay focused."* The ability to work under time pressure was seen as particularly valuable for developing the capacity of rapid decision-making and adaptation to high-pressure clinical scenarios. As observed by a student: *"The pressure made me act faster, just like in a real emergency."*

Suggestions for improvement

In addition to the perceived benefits and experiential aspects, students offered several concrete suggestions for further improving simulation-based learning.

In terms of improvement opportunities, the most prevalent recommendation was to allocate more time for simulation sessions, both before and after clinical placements. As one student stated: *"The time we had was too short; more hours would help us learn better. Repeating simulations after our clinical placements would make us more confident before going back to practice."* Furthermore, students called for a greater variety of scenarios to broaden their exposure to real-life situations and improve their preparedness for practice. A significant percentage of respondents also suggested replacing part of the clinical placement with SBL, as this would allow them to engage with rare but essential cases that are not always available in real-world settings. As one student pointed out: *"More time should be allocated to simulation-based learning instead of clinical placements, as simulations provide experiences not always seen in practice... [and] because we learn more systematically. Simulations showed me rare cases that I never encountered in my placement, yet they are still important to know."*

Quantitative evaluation of the simulation experience

All students rated their SBL experience on a scale from 1 to 5 (1 = poor and 5 = excellent), yielding a mean score of 4.82. A total of 120 (82%) students assigned a score of 5 and 26 (18%) students assigned a score of 4. No student gave a rating below 4.

Discussion

The results of this study emphasize the multifaceted learning process associated with SBL for undergraduate nursing students returning from their clinical placements. The integration of high-fidelity simulation scenarios following clinical experiences provided students with an additional opportunity to consolidate their knowledge, practice complex clinical skills, and strengthen their non-technical competencies in a safe environment. These findings reinforce the value of SBL as a complementary pedagogical strategy whose effectiveness lies in the ability to bridge the gap between theoretical learning and practical application.

Students reported that the simulations effectively linked theory and practice, enabling them to translate classroom knowledge into clinical decision-making. These findings align with the conclusions of systematic reviews indicating that SBL enhances students' ability to acquire and apply both cognitive and psychomotor skills (Alharbi et al., 2024; Tamilselvan et al., 2023). Our findings are also consistent with existing literature highlighting the pivotal role of simulation in nurturing clinical judgment and rapid decision-making (Watts, 2024). The timing of SBL remains a subject of debate, with some studies suggesting greater benefits when conducted prior to clinical placements (Mills et al., 2015). However, our findings suggest that post-clinical simulations can add significant value by giving students the opportunity to revisit complex cases not encountered during their placements. This is because simulations complement, rather than replace, pre-clinical experiences.

It has been demonstrated that students consistently perceive debriefing as a central mechanism for learning. This finding corresponds with the International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice, which highlight the pivotal role of structured reflection in transforming simulation experiences into deeper learning (Alharbi et al., 2024; INACSL Standards Committee et al., 2021).

A key strength of this study is the emphasis students placed on developing non-technical skills, particularly teamwork and communication. These competencies are increasingly recognized as central to patient safety given that miscommunication and other human factors are among the most common causes of medical errors (Dartiguelongue & Cafiero, 2021; Zhang, 2023). Like previous studies, the present study suggests that SBL provides a unique opportunity to observe, practice, and reflect on non-technical skills within a controlled environment where errors can be viewed as opportunities for learning rather than risks to patient safety (Tamilselvan et al., 2023). Furthermore, simulation was regarded as a method to enhance self-efficacy and confidence, which supports the findings of Fawaz and Alsalamah (2022). They found that self-efficacy significantly predicts clinical competence among nursing students.

Beyond developing their technical and interpersonal competencies, students reported having rich emotional experiences during SBL. Initial stress and anxiety frequently transitioned into confidence and satisfaction as the sessions progressed. These dynamics resonate with prior studies showing that SBL can initially evoke discomfort, but ultimately foster resilience, reflection, and engagement (Najjar et al., 2015; Tamilselvan et al., 2023). This finding aligns with the concept of "productive struggle," in which temporary discomfort enhances long-term competence. In addition, the results of our study show that students themselves view simulation as a key means of strengthening critical thinking. While previous evidence on this outcome is mixed (Adib-Hajbaghery & Sharifi, 2017), learners consistently highlighted that additional simulation hours would help them reflect, make decisions, and act under pressure.

A prominent theme that emerged from the dataset was students' perception that SBL could replace some clinical hours, particularly for practicing rare but critical scenarios seldom encountered during clinical placements. This perspective aligns with contemporary discourse in the field of nursing education. For instance, Bridge et al. (2022) and Larue et al. (2015) report that replacing some clinical training with SBL can maintain or even enhance learning outcomes, provided it is carefully integrated. Nevertheless, regulatory frameworks, such as those informed by the Bologna Declaration, continue to constrain such curricular innovations (Palese et al., 2014). The results of this study suggest that while SBL cannot fully substitute authentic

clinical practice, it is an equitable way to ensure that all students experience rare, high-risk situations, compensating for inequities in clinical exposure (Jallad, 2025).

Our findings support the broader integration of SBL, not merely as technical training, but as a holistic educational strategy encompassing cognitive, psychomotor, and affective learning domains. Cohen and Boni (2018) argue that holistic nursing simulations have the capacity to equip nursing professionals with both technical competence and emotional intelligence. The findings of this study demonstrate that structured simulation, particularly when accompanied by high-quality debriefing, facilitates students' reflection on errors, enhances their confidence, and strengthens their professional identity as nurses. Consequently, curricular reforms should prioritize longitudinal integration of SBL across all years of nursing education, increasing the complexity of scenarios and placing greater emphasis on developing students' non-technical skills.

Although the present study analyzed a large cohort of students, its findings are limited to a single higher education institution and two student groups. Furthermore, reliance on self-reported reflections may have led to some subjectivity. The data collected may be subject to social desirability bias, wherein students might give answers they think are expected of them. This could be mitigated in the future by including objective performance data or observation metrics. Another limitation that could affect the results relates to data collection. Although anonymity was ensured, the involvement of some research team members in teaching may have influenced students' responses. Future research should adopt longitudinal and comparative designs in order to objectively evaluate the impact of post-clinical SBL on both immediate learning outcomes and long-term clinical competence. Particular attention should be paid to developing standardized frameworks for the integration of SBL before and after clinical placements. There is also a need to optimize the ratio between clinical training hours and SBL hours and to investigate the long-term impact on patient safety outcomes.

Conclusion

This study emphasizes the central role of high-fidelity SBL in supporting undergraduate nursing students following clinical placements. The simulations employed in the study provided a safe and structured environment in which students could consolidate their theoretical knowledge, practice both their technical and non-technical skills, and build confidence in their professional preparedness.

Students particularly valued the opportunity to work under pressure, collaborate in teams, and reflect through structured debriefing sessions. They also expressed a desire for additional simulation hours and greater variety of scenarios. These findings suggest that curricula should incorporate simulations more strategically and equitably to ensure reliable and consistent learning opportunities for all students.

Although SBL cannot completely replace clinical practice, it is essential to recognize its role as a valuable addition to existing educational methods. SBL programs provide exposure to rare and complex cases, mitigate inequalities in clinical learning, and promote the holistic development of future nurses. Future research should therefore focus on optimizing the balance between clinical and simulated training, evaluating long-term outcomes, and reinforcing the evidence base for curricular innovations that support patient safety and professional competence.

Ethical aspects and conflict of interest

The study was conducted in line with the principles of the Declaration of Helsinki / Tokyo (World Medical Association, 2013) and approved by the Ethics Committee of the University of Primorska (No. 4264-19-6/23). Written consent was obtained from all students for the use of their written reflections. Before signing the written consent form, all participants were informed of the voluntary nature of their participation and assured of their right to withdraw from the study at any time. They were given the opportunity to ask any questions they had. Participants were informed that their data would be treated confidentially. All data were kept secure and confidential, with no identifiable information recorded in writing. The data analysis and presentation were conducted in such a way that the participants' identity remained anonymous.

There is no conflict of interest to declare.

Acknowledgements

We would like to thank all nursing students of the University of Primorska Faculty of Health Sciences who participated in the study.

Funding

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Author contributions

Conception and design (JR, HS, PP, IK), data analysis and interpretation (JR, IK), manuscript draft (JR, IK), critical revision of the manuscript (JR, HS, PP, IK), final approval of the manuscript (JR, HS, PP, IK).

References

Adib-Hajbaghery, M., & Sharifi, N. (2017). Effect of simulation training on the development of nurses and nursing students' critical thinking: a systematic literature review. *Nurse Education Today*, *50*, 17–24. https://doi.org/10.1016/j.nedt.2016.12.011

Alharbi, A., Nurfianti, A., Mullen, R. F., McClure, J. D., & Miller, W. H. (2024). The effectiveness of simulation-based learning (SBL) on students' knowledge and skills in nursing programs: a systematic review. *BMC Medical Education*, *24*(1), 1099. https://doi.org/10.1186/s12909-024-06080-z

Alshehry, A. S., Cruz, J. P., Bashtawi, M. A., Almutairi, K. O., & Tumala, R. B. (2021). Nursing students' knowledge, competence and attitudes towards vital signs monitoring during clinical practice. *Journal of Clinical Nursing*, *30*(5–6), 664–675. https://doi.org/10.1111/jocn.15586

Bridge, P., Adeoye, J., Edge, C. N., Garner, V. L., Humphreys, A.-L., Ketterer, S.-J., Linforth, J. G., Manning-Stanley, A. S., Newsham, D., Prescott, D., Pullan, S. J., & Sharp, J. (2022). Simulated placements as partial replacement of clinical training time: a delphi consensus study. *Clinical Simulation in Nursing*, *68*, 42–48. https://doi.org/10.1016/j.ecns.2022.04.009

Chow, K. M., Ahmat, R., Leung, A. W. Y., & Chan, C. W. H. (2023). Is high-fidelity simulation-based training in emergency nursing effective in enhancing clinical decision-making skills? A mixed methods study. *Nurse Education in Practice*, *69*, 103610. https://doi.org/10.1016/j.nepr.2023.103610

Cohen, B. S., & Boni, R. (2018). Holistic nursing simulation: a concept analysis. *Journal of Holistic Nursing*, *36*(1), 68–78. https://doi.org/10.1177/0898010116678325

Dartiguelongue, J. B., & Cafiero, P. J. (2021). Communication in health care teams. *Archivos Argentinos De Pediatria*, *119*(6), e589–e593. https://doi.org/10.5546/aap.2021.eng.e589

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Fawaz, M., & Alsalamah, Y. (2022). Clinical competence and self-efficacy of Lebanese and Saudi nursing students participating in simulation-based learning in nursing education. *Nursing Forum*, *57*(2), 260–266. https://doi.org/10.1111/nuf.12673

INACSL Standards Committee, Decker, S., Alinier, G., Crawford, S. B., Gordon, R. M., Jenkins, D., & Wilson, C. (2021). Healthcare simulation standards of best practice: the debriefing process. *Clinical Simulation in Nursing*, *58*, 27–32. https://doi.org/10.1016/j.ecns.2021.08.011

Jallad, S. T. (2025). Effectiveness of simulation-based education on educational practices of communication skills, satisfaction, and self-confidence among undergraduate nursing students. *Creative Nursing*, *31*(2), 135–143. https://doi.org/10.1177/10784535241301115

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.

Larue, C., Pepin, J., & Allard, É. (2015). Simulation in preparation or substitution for clinical placement: a systematic review of the literature. *Journal of Nursing Education and Practice*, *5*(9), 132. https://doi.org/10.5430/jnep.v5n9p132

Mills, B. W., Carter, O. B. J., Rudd, C. J., Ross, N. P., & Claxton, L. A. (2015). Clinical placement before or after simulated learning environments? A naturalistic study of clinical skills acquisition among early-stage paramedicine students. *Simulation in Healthcare*, *10*(5), 263–269. https://doi.org/10.1097/SIH.0000000000000107

Najjar, R. H., Lyman, B., & Miehl, N. (2015). Nursing students' experiences with high-fidelity simulation. *International Journal of Nursing Education Scholarship*, *12*(1), 20150010. https://doi.org/10.1515/ijnes-2015-0010

Ntumi, S. (2025). Validating high-fidelity simulation for assessing procedural skills in nursing education: a kane framework approach in Ghana. *BMC Medical Education*, *25*(1), 1170. https://doi.org/10.1186/s12909-025-07724-4

Palese, A., Zabalegui, A., Sigurdardottir, A. K., Bergin, M., Dobrowolska, B., Gasser, C., Pajnkihar, M., & Jackson, C. (2014). Bologna process, more or less: nursing education in the European economic area: a discussion paper. *International Journal of Nursing Education Scholarship*, *11*(1), 63–73. https://doi.org/10.1515/ijnes-2013-0022

Shin, S., Park, J.-H., & Kim, J.-H. (2015). Effectiveness of patient simulation in nursing education: meta-analysis. *Nurse Education Today*, *35*(1), 176–182. https://doi.org/10.1016/j.nedt.2014.09.009

Squires, K., Heaney, S., MacDonald-Wicks, L., Johnston, C., & Brown, L. (2022). Mapping simulated-based learning experiences incorporated into professional placements in allied health programs: a scoping review. *Simulation in Healthcare*, *17*(6), 403–415. https://doi.org/10.1097/SIH.0000000000000627

Stufflebeam, D. L. (2003). The CIPP Model for Evaluation. In T. Kellaghan & D. L. Stufflebeam (Eds.), *International Handbook of Educational Evaluation* (pp. 31–62). Springer Netherlands. https://doi.org/10.1007/978-94-010-0309-4_4

Tamilselvan, C., Chua, S. M., Chew, H. S. J., & Devi, M. K. (2023). Experiences of simulation-based learning among undergraduate nursing students: a systematic review and meta-synthesis. *Nurse Education Today*, *121*, 105711. https://doi.org/10.1016/j.nedt.2023.105711

Van Vuuren, S. (2016). Reflections on simulated learning experiences of occupational therapy students in a clinical skills unit at an institution of higher learning. *South African Journal of Occupational Therapy*, *46*(3), 73–78.

Watts, P. I. (2024). Blazing forward: simulation in nursing practice. *Nursing Clinics of North America*, *59*(3), xv–xvi. https://doi.org/10.1016/j.cnur.2024.02.008

World Medical Association. (2013). World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. *JAMA*, *310*(20), 2191–2194. https://doi.org/10.1001/jama.2013.281053

Zhang, C. (2023). A literature study of medical simulations for non-technical skills training in emergency medicine: twenty years of progress, an integrated research framework, and future research avenues. *International Journal of Environmental Research and Public Health*, *20*(5), 4487. https://doi.org/10.3390/ijerph20054487