Emerging scholar article

Authors

Maeve Hegarty
BSc(Hons) (Nursing)
MCN (Anaesthetic and Recovery Nursing)

Dr Paula Foran
PhD, RN, FACORN, FACPAN, MACN

Corresponding author

Maeve Hegarty
maeveh@utas.edu.au

Perioperative preceptors' education and training: An integrative review

Abstract

Introduction: Against the backdrop of a predicted shortfall of over 70 000 nurses in Australia by 2035, the retention of the perioperative nursing workforce is being challenged by inconsistent preceptor training of novice nurses. The aim of this integrative review is to identify tangible measures that organisations can implement to empower, educate and train perioperative preceptors to grow a skilled perioperative nursing workforce. Enhanced education provided by preceptors may also positively impact patient safety.

Methods: This review aimed to answer the broad question, 'What is known about perioperative preceptor preparation and training?' The initial literature search using specific keywords such as 'preceptor' OR 'mentor' AND 'transition to practice' AND 'perioperative nursing' was conducted across SCOPUS, PubMed and EBSCO databases including, ERIC, Health Source: Nursing/Academic Edition, MEDLINE, MEDLINE Complete and Psychology and Behavioural Sciences Collection. Due to a paucity of primary research conducted specifically on perioperative preceptorship, this was broadened to include preceptorship from general nursing. After applying rigorous inclusion and exclusion criteria, this search yielded 15 relevant research papers. These studies provided both qualitative and quantitative insights into the unique challenges faced by and the support available for preceptorship.

Results: This integrative review identified key factors influencing perioperative nurses' ability to preceptor novice nurses, revealing two overarching themes. The first, 'lack of formalised preceptor training' had three subthemes – learning expectations, feedback and adult learning theories. The second theme was 'workload' and did not have subthemes.

Conclusion: Healthcare organisations must establish clear role definitions for perioperative preceptors and set consistent learning expectations. Moreover, formal training in delivering feedback and adult learning strategies is needed for preceptors to create effective teaching environments. Finally, providing formal education for preceptors, strategies to reduce workload pressures and protected time for preceptors to teach novice perioperative nurses is vital.

Keywords: perioperative preceptor, education, training, workplace learning, mentor new graduate nurse, novice nurse, transition shock, burnout

Introduction

It is widely agreed that well-educated nurses contribute significantly to improving patient outcomes[1]. Adverse events are reduced when novice nurses have received comprehensive unit-specific workplace training[1]. When newly graduated nurses are not supported in transitioning to practice, not only is patient safety put at risk but the likelihood of these nurses moving away from clinical nursing is also increased[2]. The latest reports predict that by 2035 the shortfall in nurses in Australia will be over 70 000, and the perioperative setting will be no exception[3]. The aim of this integrative review is to investigate the effectiveness of preceptor programs for novice perioperative nurses.

In this paper 'novice nurses' are defined as any new nursing staff to the operating suite, including experienced nurses new to perioperative practice, undergraduate nursing students and new graduates. Perioperative nursing requires a unique set of specialised competencies that are not routinely taught in the undergraduate curriculum[4], thus basic training can

This article is licensed under a Creative Commons Attribution License 4.0 International (CC BY 4.0).

Copyright to this work is retained by the authors.

DOI: 10.26550/2209-1092.1389

take up to one year[5]. As poor workplace preparation has been linked to poor staff retention, and as attrition has significant fiscal repercussions[5], it is important that organisations provide quality education and training to retain novice perioperative nurses. It is crucial to the safety of patients and the sustainability of the Australian nursing workforce that tangible measures are provided to support future perioperative nurses[6].

The terms 'preceptor' and 'mentor' are often used synonymously; however, salient literature suggests that the two roles are quite different, each having their own part to play in education[7]. The role of preceptor is prearranged with an experienced staff member providing new staff or students with accurate clinical education and training as well as support in the workplace[8]. This relationship may only be short-term but will aid in the acquisition of well-defined workplace skills, and has a key premise that the preceptor is not only knowledgeable but also committed to the role[9]. The role of mentor often develops informally, over time, and is a 'one-on-one' relationship where the mentee can learn implicit knowledge about ethics, professionalism and workplace values[10].

Despite playing a pivotal role in the training of a large highly skilled nursing workforce, the role of preceptor faces many challenges. Most preceptors are given little education to fulfil the role[11], healthcare facilities vary widely in both the requirements and the duration of transition programs, leading to inconsistencies in education and ambiguity about what is expected of preceptors[1]. Additionally, nursing shortages often leave limited numbers of staff available to act as preceptors[12,13] and work in the operating suite is often fast paced and efficiency driven, which can leave perioperative nurses with little in reserve to contribute to the education of more junior staff[12,13].

Review methods

This integrative review follows the framework outlined by Whittemore and Knalf[14] and follows the initial step of problem identification, which is to answer the broad question 'What is known about perioperative preceptor preparation and training?'

Search strategy

The search terms included 'perioperative preceptor', 'education', 'training', 'workplace learning', 'mentor', 'new graduate nurse', 'novice nurse', 'transition shock' and 'burnout'. These were used in various configurations to conduct a broad scoping search. The truncation technique nurs* was used to ensure the retrieval of results encompassing various forms of the term, including 'nurse', 'nurses' and 'nursing'.

Using these search terms and the Boolean operators 'AND' and 'OR', a comprehensive search was conducted of the databases Scopus, PubMed and EBSCO. The databases included in the EBSCO search were CINAHL Complete, Education Source, ERIC, Health Source: Nursing/Academic Edition, MEDLINE, MEDLINE Complete and Psychology and Behavioural Sciences Collection. The initial search of EBSCO included: 'preceptor' OR 'mentor' AND 'transition to practice' AND 'perioperative nursing'. This search was refined to include research published within the previous five years and written in English, and yielded 23 results.

Further searches were performed using the additional keywords 'motivation', 'perioperative' and 'burnout'. Purposive sampling was adopted through screening the titles and abstracts of the 23 studies to only include nursing focused research the aim of which contributed to answering the above question. The reference lists of various reviews were investigated, and citation chaining was employed to find further primary research that related to the question. Due to the paucity of research specifically on preceptors from the perioperative specialty, nursing education from other nursing specialties was included.

Inclusion criteria and exclusion criteria

Papers were included if they reported primary research of high quality, were conducted in the last five years or were nonsalient older papers, reported salient perioperative research, were published in English with full text availability, reported preceptorship research from clinical areas similar to perioperative nursing or reported research from countries with similar nurse education practices to Australia.

Secondary research, research deemed as poor quality, research older than five years, preceptorship research from clinical areas dissimilar to perioperative nursing, research from countries with dissimilar nurse education practices to Australia were not included.

Quality appraisal

All research studies were evaluated to ensure quality using the relevant Equator Network checklists. The Joanna Briggs Institute (JBI) level of evidence pyramid was used to ensure all papers were of the highest quality to answer the question posed[15]. The checklists consulted were the Consolidated criteria for reporting qualitative research (COREQ) checklist[16], the Mixed methods appraisal tool (MMAT) version 2018[17], the Strengthening the reporting of observational studies in epidemiology (STROBE) checklist for cross-sectional studies[18] and the Standards for quality improvement reporting excellence in education (SQUIRE-EDU)[19]. Research studies deemed to be of poor quality were removed.

Results

The search strategy and quality appraisal screening resulted in 15 primary research papers being selected for this integrative review – six qualitative studies, five mixed methods studies, three quantitative studies and one quantitative quasi-experimental quality improvement study. Of the 15 studies reviewed, eight were conducted in the United States and one study conducted in each of Australia, Turkey, Norway, Sweden, United Kingdom, Taiwan and Cyprus.

Following extensive and repeated reading of the studies, analysis was conducted using a literature matrix to colour code and highlight commonalities among the literature and allow for thematic analysis and literature synthesis. The two overarching themes were, 'lack of formalised preceptor training' and 'workload'.

Discussion

This discussion will be presented under the two main themes – 'lack of formalised preceptor training' and 'workload'.

Lack of formalised preceptor training

Thematic analysis revealed a lack of formalised training to assist and guide preceptors trying to train more junior staff. In a quasi-experimental study (n = 96) by Liu et al.[20], 90 per cent of participants were actively precepting but 84 per cent had not received any prior training. In a larger qualitative study (n = 234) conducted by Durkin et al.[21], 78 per cent of preceptors reported experiencing burnout despite prior attendance at a basic preceptor workshop. The identified reason for this was that the training was too brief and did not adequately prepare the preceptors for their new educative role[21]. Thus, not only is there a lack of training for preceptors but the training that is provided may be inadequate.

Organisational support has been identified as a significant factor. In a qualitative study of nurse mentors (n= 7), Oliveira[22] reported that participants felt 'overloaded' by teaching junior nurses while working clinically. A survey of preceptors (n = 154) by Boyce et al.[23], identified the need for organisational support of protected preceptor training. It should be noted that this study was conducted in 2021 during the pandemic which may have influenced participant responses.

More broadly, Durkin et al.[21] reported that only 12 per cent of participants felt they had the organisational support needed to act as preceptor. Specifically, clear avenues to escalate teaching difficulties or problematic novice nurse behaviour were outlined as an important form of organisational support required to empower preceptors[11]. Considering the predicted increased need for preceptors to enhance recruitment and retention of novice nurses worldwide[24], it is imperative that organisations implement practical facilitators to effective training and support for preceptors.

Lack of formalised preceptor training was found to have three subthemes – 'learning expectations', 'feedback' and 'adult learning theories'.

Learning expectations

Ambiguity around learning aims can lead to frustration for both teacher and learner. A quantitative cross-sectional study (n = 1270), by Odo et al.[25] that investigated the barriers and facilitators for preceptors, revealed that 57 per cent of participants believed that clear learning expectations could improve their experience of providing education. Kauth and Reed[11] echoed this sentiment by highlighting the need to define the responsibilities of clinical nurse teachers as the role of preceptor has fallen to more junior staff due to the overwhelming post-pandemic shortage of senior nurses worldwide. While nurses with teaching experience may understand what learners expect from them and what they, in turn, should expect from novice nurses, participants in a mixed-methods research study (n=139) identified that guidance is needed on what they should expect from their preceptees on completion of their orientation[11].

In a qualitative study (n = 26) by Hussein et al.[26], nurses completing a transitional support program reported that their preceptors had a fundamental impact on their development as nurses and voiced frustration with the teaching. The researchers found a lack of consistency of teaching with some preceptors only teaching if directly asked[26]. Frustration and dissatisfaction may have been under-reported, as the participants of the study were awaiting permanent employment and this could have limited their willingness to vocalise their barriers to learning[26]. It was also suggested that the preceptor expectations were not specific enough, that each nursing specialty required individualised role outlines for both newly trained nurses and their educators[26].

To assist with clarification of learning aims in the perioperative specialty, the Australian College of Perioperative Nurses (ACORN) has developed tools and resources for both preceptors and preceptees[27].

Salient research reminds us that, as perioperative nursing is not routinely taught in the undergraduate nursing curriculum, there is generally no prior knowledge when new nurses enter the operating suite[4]. This initial lack of knowledge compounds the problem in perioperative nursing as specific new learning objectives are required, and it may take an extended period for preceptees to master these competencies independently[5]. In their quality improvement initiative (n = 60), Apple et al.[28] noted an increase in students applying for perioperative nursing placements when they had previously been exposed to operating room simulation training. This emphasises the importance of specific perioperative education during undergraduate nursing not only to allow clear expectations of novice perioperative nurses prior to their entering the perioperative specialty but also to enable nurses to make an informed choice about their career pathways[4,28].

Feedback

The importance of continuous feedback cannot be undervalued for the development of competent nurses and is required to instil confidence and improve skills[29]. Liu et al.[20] reported that the ability to provide feedback was a common need of preceptors when coaching, yet the fast-paced nature of the operating suite can make it difficult to provide timely feedback[22]. Boyce et al.[23] investigated barriers to teaching among junior preceptors and found that giving new nurses constructive feedback was a concern for respondents with 46 per cent articulating the need for formalised feedback training[23].

Liu et al.[20] assessed the effectiveness of a two-day preceptor training workshop that included feedback methods and found that there was a statistically significant increase in participant confidence in providing feedback and partaking in difficult conversations with novice nurses ($p = 0.007$). This suggests that feedback training is an aspect of effective teaching that organisations could provide.

Feedback is not only necessary for the learner, but it is imperative that preceptors also receive evaluations, as this will assist them to refine their teaching methods and better understand their students' needs[21]. Durkin et al.[21] noted that only 25 per cent of participating preceptors had received feedback on their educational abilities and this had come from their orientees. Respondents concluded that they would benefit from receiving feedback from leadership and educators so they could be confident they were meeting expectations and teaching in a way that suited their novice learners' learning style[21].

Adult learning theories

Although precepting cannot be generalised across all nursing specialties[26] it always involves education of adult students; therefore, all nursing educators require a basic understanding of adult learning (andragogy)[29]. Amirehsani et al.[30] surveyed nurse practitioner preceptors (n = 29) and found access to ongoing education for preceptors to be a motivator to act as preceptor for 22.55 per cent of respondents. Respondents also indicated that education should incorporate andragogy and adaptable teaching methods that cater to the diverse needs of learners, ensuring effective and engaging learning experiences[30]. This is reiterated by Kauth and Reed[11] who reported that experienced preceptors voiced the need for continuous access to workshops and webinars focusing on practical adult teaching skills. Oliveira[22] also reported that preceptors who had only mentored one novice nurse each outlined that a lack of theoretical knowledge was an obstacle to effective teaching. This lack of theoretical knowledge is compounded by the demands of the operating theatre which allow limited time to consult resources[22].

Workload

When discussing preceptorship related to the perioperative environment it is crucial to acknowledge the dynamic, time-sensitive, workload-intensive setting the operating room can be[31]. In a qualitative study (n = 32) by Cetinkaya et al.[32] it was found that students visiting the perioperative environment experienced anxiety when observing the rate of productivity exhibited by surgical teams. Although these students only spent two days in theatres, and may not have had time to acclimatise, these findings were supported by a study by Dikmen et al.[33] of second year students (n = 208) who stated the theatre environment left them fearful and unable to get involved in care due to the limited time available to nurses.

A mixed-methods study by McCann et al.[34] reported that preceptors felt that educating new staff was integral to the role of nursing; however, time constraints and the emphasis on productivity from organisations were seen as barriers. Similarly, Boyce et al.[23] found that while there is intrinsic motivation to teach novice nurses and contribute positively to the profession, and preceptors report that they enjoy teaching, a lack of time to complete their clinical workload contributed to a decreased ability to teach. Furthermore, Erikksson et al.[31] reported that lack of time to conduct crucial patient safety tasks and complete documentation limited the time available to spend with patients and the quick turnover of patients was a concern frequently noted by study participants.

Distraction is a leading cause of human error that can cause mistakes in operating theatres, and teaching a novice nurse may take a preceptor's attention away from essential patient safety checks[22]. This has been found to be exacerbated when nurses with previous non-perioperative experience are employed but not provided with the same protected learning time without a patient assignment as new graduate nurses[21].

Organisational support of nurse preceptors in perioperative nursing is paramount to promoting an effective teaching environment and should include providing protected time to educate novice and inexperienced nurses and allow for skills to be assessed[26]. This is only achievable in the clinical setting if workloads are adjusted for teachers[26]. Not only will this ensure viability of the next generation of perioperative nurses but it may also protect patients from harm[22].

Conclusion

Against the backdrop of a predicted shortage of perioperative nurses in Australia, and informed by an understanding that workplace training can contribute to retention of perioperative nurses in the workforce, this integrative review aimed to identify tangible measures that organisations can implement to empower, educate and train perioperative preceptors to grow a skilled perioperative nursing workforce.

Thematic analysis of primary research literature identified lack of formalised preceptor training and clinical workload as barriers to effective preceptorship of novice perioperative nurses. To ensure the quality of our future perioperative nursing workforce, organisations need to provide formal preceptor training programs that allow clear expectations for both learners and teachers to be set, provide formal training for preceptors on how to give and receive feedback, and enable preceptors to understand and develop strategies for adult learning. In addition, organisations need to adjust clinical workloads to allow protected time for preceptors to learn how to teach and to effectively precept more junior staff.

This integrative literature review has also highlighted a significant gap in the current literature surrounding preceptor training, or lack thereof, in Australia. It is recommended that future research be conducted into the preceptor role, the required skillset and outcomes of perioperative preceptors and novice nurse education and training. The quality of perioperative care we provide to patients in the future will rest on our ability to provide formal training for preceptors, reduce the clinical workload for preceptors and novices, and allocate protected time for preceptors to teach and grow a highly skilled and safe perioperative nursing workforce.

Conflict of interest and funding statement

The authors have declared no competing interests with respect to the research, authorship and publication of this article.

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

Acknowledgement

This paper was submitted to the University of Tasmania as part fulfilment of subject CNA803, Advanced Clinical Nursing Practice, for the Master of Clinical Nursing (Anaesthetics and Recovery Nursing). The author sincerely wishes to thank Dr Paula Foran, unit coordinator, for her guidance throughout the master's course and work in preparing this paper for publication.

References

1. Schwartz S. Educating the nurse of the future: report of the independent review of nursing education [Internet]. Canberra: Commonwealth of Australia, Department of Health; 2019. Available from: https://www.health.gov.au/resources/publications/educating-the-nurse-of-the-future?language=en

2. Chen F, Liu Y, Wang X, Dong H. Transition shock, preceptor support and nursing competency among newly graduated registered nurses: A cross-sectional study. Nurse Educ Today. 2021[cited 2025 May 18];102:104891. DOI: 10.1016/j.nedt.2021.104891
3. Australian Government Department of Health and Aged Care. Nursing supply and demand study: 2023–2035 [Internet]. Canberra: Australian Government; 2024 [cited 2025 May 18]. Available from: https://hwd.health.gov.au/resources/primary/nursing-supply-and-demand-study-2023-2035.pdf
4. Foran P. Undergraduate surgical nursing preparation and guided operating room experience: A quantitative analysis. Nurse Educ Pract. 2016[cited 2025 Sep 7];16(1):217–24. DOI: 10.1016/j.nepr.2015.08.005
5. Finlayson S, Brull S, Peñaloza MT, Ciofalo N. A perioperative clinical advancement program to improve nurse recruitment and retention [Internet]. AORN J. 2025[cited 2025 May 18];121(4):245–56. DOI: 10.1002/aorn.14318
6. Sahay A, Nijkamp N, Calleja P. Bridging the gap: Preparing and nurturing novice perioperative nurses. J Perioper Nurs. 2023[cited 2025 May 18];36(4):e1–3. DOI: 10.26550/2209-1092.1279
7. Wensel TM. Mentor or preceptor: What is the difference? Am J Health Syst Pharm. 2006[cited 2025 Sep 7];63(1):1597. DOI: 10.2146/ajhp060121
8. Earle-Foley V, Myrick F, Luhanga F, Yonge O. Preceptorship: Using an ethical lens to reflect on the unsafe student. J Prof Nurs. 2012 [cited 2025 Sep 7];28(1):27–33. DOI: 10.1016/j.profnurs.2011.06.005
9. Haggerty C, Holloway K, Wilson D. Entry to nursing practice preceptor education and support: could we do it better? Nursing Praxis in New Zealand. 2012 Mar 1[cited 2025 Sep 7];28(1):30.
10. Rose GL, Rukstalis MR, Schuckit MA. Informal mentoring between faculty and medical students. Acad Med. 2005 [cited 2025 Sep 7];80(4):344–8. DOI: 10.1097/00001888-200504000-00007
11. Kauth C, Reed RM. Nurse preceptor motivations, barriers, and perceived rewards post-pandemic. Medsurg Nurs. 2024[cited 2025 May 18];33(5):241–8. DOI: 10.62116/MSJ.2024.33.5.241
12. Munhoz OL, Morais BX, Luz EM, Bitencourt Toscani Greco P, Ilha S, Bosi de Souza Magnago TS. Prevalence and association between stress and anxiety in perioperative nursing professionals: Mixed methods research. Texto & Contexto Enfermagem [Text & Context Nursing]. 2024[cited 2025 May 18];33:e20230347. DOI: 10.1590/1980-265X-TCE-2023-0347en
13. Lee EY, Kim KJ, Ko S, Song EK. Communication competence and resilience are modifiable factors for burnout of operating room nurses in South Korea. BMC Nurs. 2022[cited 2025 May 18];27;21(1):203. DOI: 10.1186/s12912-022-00985-0
14. Whittemore R, Knafl K. The integrative review: Updated methodology. J Adv Nurs. 2005[cited 2025 May 18];52(5):546–53. DOI:10.1111/j.1365-2648.2005.03621.x
15. Joanna Briggs Institute (JBI). Supporting document for the joanna briggs institute levels of evidence and grades of recommendation [Internet]. Adelaide: JBI; 2014 [cited 2025 May 18]. Available from: https://jbi.global/sites/default/files/2019-05/JBI%20Levels%20of%20Evidence%20Supporting%20Documents-v2.pdf
16. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups [Internet]. Int J Qual Health Care. 2007[cited 2025 May 18];19(6):34957. DOI: 10.1093/intqhc/mzm042
17. Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M et al. Mixed methods appraisal tool (MMAT), version 2018 [Internet]. Montreal: McGill University; 2018 [cited 2025 May 18]. Available from: http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/fetch/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf
18. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: Guidelines for reporting observational studies [Internet]. PLoS Med. 2007[cited 2025 May 18];4(10):e296. DOI: 10.1371/journal.pmed.0040296
19. Ogrinc G, Armstrong GE, Dolansky MA, Singh MK, Davies L. SQUIRE-EDU (Standards for quality improvement reporting excellence in education): Publication guidelines for educational improvement [Internet]. Acad Med. 2019[cited 2025 May 18];94(10):1461–70. DOI: 10.1097/ACM.0000000000002750
20. Liu L, Fillipucci D, Mahajan SM. Quantitative analyses of the effectiveness of a newly designed preceptor workshop [Internet]. J Nurses Prof Dev. 2019[cited 2025 May 18];35(3):144–51. DOI: 10.1097/NND.0000000000000528
21. Durkin GJ, Cosetta MA, Mara C, Memmolo S, Nixon C, Rogan ML et al. A multimodal project to assess preceptor burnout: Implications for professional development practitioners [Internet]. J Nurses Prof Dev. 2023[cited 2025 May 18];39(1):33–41. DOI: 10.1097/NND.0000000000000820
22. Oliveira Rosa J. Being a nursing mentor in the intraoperative neurosurgical theatre. Journal of Perioperative Practice. 2025 [cited 2025 May 18]; Jan 29:17504589251320824. DOI: 10.1177/17504589251320824
23. Boyce DJ, Shifrin MM, Moses SR, Moss CR. Perceptions of motivating factors and barriers to precepting. Journal of the American Association of Nurse Practitioners. 2022 [cited 2025 May 18]; Nov 1;34(11):1225-34. DOI: 10.1097/JXX.0000000000000788
24. Lin YE, Tseng CN, Wang MF, Wu SF, Jane SW, Chien LY. Anxiety and work stress among newly employed nurses during the first year of a residency programme: A longitudinal study [Internet]. J Nurs Manag. 2020[cited 2025 May 18];28(7):1598–606. DOI: 10.1111/jonm.13114
25. Odo N, Ruffa A, Gillies RA, Ballance D, Kornegay D, Heboyan V. Assessing factors that influence the satisfaction of community-based faculty with precepting health professions students in the state of Georgia [Internet]. J Community Health. 2025[cited 2025 May 18];50(4):742–9. DOI: 10.1007/s10900-025-01464-8
26. Hussein R, Salamonson Y, Everett B, Hu W, Ramjan LM. Good clinical support transforms the experience of new graduates and promotes quality care: A qualitative study [Internet]. J Nurs Manag. 2019 [cited 2025 May 18];27(8):1809–17. DOI: 10.1111/jonm.12880
27. Australian College of Perioperative Nurses (ACORN). Resources [Internet]. Adelaide: ACORN; 2025 [cited 1 Oct 2025]. Available from: https://www.acorn.org.au/educationresources
28. Apple B, Letvak S, Garrett K, Fencl JL. Using an academic-practice partnership to address the perioperative nursing shortage [Internet]. AORN J. 2024[cited 2025 May 18];120(4):206–13. DOI: 10.1002/aorn.14216
29. Averlid G, Høglund JS. The operating room as a learning arena: Nurse anaesthetist and student nurse anaesthetist perceptions [Internet]. J Clin Nurs. 2020[cited 2025 May 18];29(9–10):1673–83. DOI: 10.1111/jocn.15227
30. Amirehsani KA, Kennedy-Malone L, Alam MT. Supporting preceptors and strengthening academic-practice partnerships: Preceptors' perceptions [Internet]. J Nurse Pract. 2019[cited 2025 May 18]; 15(8): e151–6. DOI: 10.1016/j.nurpra.2019.04.011
31. Eriksson J, Lindgren BM, Lindahl E. Newly trained operating room nurses' experiences of nursing care in the operating room [Internet]. Scand J Caring Sci. 2020[cited 2025 May 18];34(4):1074–82. DOI: 10.1111/scs.12817
32. Çetinkaya A, Kızıl Toğaç H, Yılmaz E. The operating room as a clinical learning environment in the views of nursing students: A qualitative research. Interactive Learning Environments. 2023 [cited 2025 May 18]; Dec 15;31(10):6712-23. DOI: 10.1080/10494820.2022.2043387
33. Dikmen BT, Bayraktar N. Nursing students' experiences related to operating room practice: a qualitative study. Journal of PeriAnesthesia Nursing. 2021 [cited 2025 May 18]; Feb 1;36(1):59-64. DOI: 10.1016/j.jopan.2020.06.025
34. McCann R, Shreve M, Bradley C, Butler M. Changes in motivation, barriers, and student impact on preceptors since COVID-19: A mixed methods study [Internet]. J Nurse Pract. 2024[cited 2025 May 18];20(10):105215. DOI: 10.1016/j.nurpra.2024.105215