CASE STUDIES

Supporting novice nurses in perioperative nursing: A case study of an educational intervention

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ABSTRACT

Objective: This case study describes the introduction and evaluation of a structured perioperative education program for novice nurses in the theatre setting to address ongoing retention and attrition rates of skilled perioperative nurses.

Background: A proficient and dynamic workforce is essential for speciality areas, including surgical theatre environments. Whilst perioperative nurse education occurs at undergraduate and postgraduate universities, assimilation and further development of skills into the work environment takes time and requires a supportive workplace culture. Lack of support and exposure to clinical experience limits the competency and confidence of novice nurses, which negatively affects retention in specialty areas.

Study Design: Twenty novice nurses underwent a three-month rotation across 14 perioperative speciality areas with an assigned nurse mentor between 2021 and 2024. An educational learning package was developed to track the knowledge, confidence, and capability of novice nurses. Focus group sessions were held every three months, and surveys were administered to assess the overall effectiveness of the program.

Results: Nineteen novice nurses reported increased confidence in their knowledge and overall confidence in the clinical area. Findings demonstrated that the program's structure was a strength, while organisational impacts were the main barrier, including a lack of staff and time pressures identified as barriers. Overall, workplace culture was improved for all staff with improvements in staff retention.

Conclusion: The retention of skilled perioperative staff is essential for best patient outcomes, organisational efficiencies, and a positive work culture and environment. This project has been successful in bridging the theory-practice gap, promoting skill acquisition and professional confidence for NN, whilst enhancing positive workplace culture and staff retention within the study setting. There is a need to review the self-paced learning booklets to enhance the documentation and to show completion by all participants.

Implications for practice: Attrition rates in speciality areas that require a high level of ability, such as the perioperative environment, remain a constant concern for healthcare. This study proves the importance of investing in skill development for novice perioperative nurses through a structured educational program in

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the clinical setting. Supportive frameworks enhance nurses' knowledge and confidence, leading to retention in speciality areas.

What is already known about the topic?

- Perioperative areas are high-pressure environments that require a skilled, specialised workforce to ensure patient safety.
- Maintaining a skilled workforce is problematic as a result of an ageing nursing workforce and the impact of the global pandemic (COVID-19 pandemic).
- Perioperative nurse education occurs at undergraduate and postgraduate universities, although assimilation of skills into the work environment takes time and requires a supportive workplace culture.

What paper adds.

- The findings add to current literature, which finds competency and confidence of novice nurses can be enhanced through supportive education and clinical exposure in the perioperative environment.
- It proves that providing a supportive educational framework that incorporates a mentoring structure can be beneficial for novice and senior nurses in fostering a positive work culture.

Keywords: Clinical supervision, debrief, novice, nursing, operating theatre, support.

OBJECTIVE

This case study aims to:

1. Describe the components of a structured perioperative education program for nurses in the theatre setting to address ongoing retention and attrition of skilled perioperative nurses.
2. Describe the evaluation of a structured perioperative education program in the clinical setting.

BACKGROUND

High-pressure perioperative settings require a skilled and competent workforce with specialised knowledge to maintain a positive work culture, enhancing patient outcomes and service efficiencies.[1,2] Turnover rates for senior perioperative theatre nurses (those with nine or more years of experience) remain a challenge for these environments,[3] with attrition compounded by an experienced ageing workforce nearing retirement. Knowledge transfer from this group to novice nurses (NN) is vital.[3-5] Limited clinical experience negatively impacts NN's competency and confidence.[6] Foundational perioperative nurse education and intensive short workshops are available through undergraduate/postgraduate universities, and professional groups both statewide and nationally (such as through the Australian College of Perioperative Nurses (ACORN)).[7] However, technical and non-technical skills require supplementation in the clinical setting with mentoring, critical thinking, and skill application, which are not routinely taught in undergraduate nursing schools.[6,8] Skill development in the work environment takes time and requires access to on-the-job education underpinned by a supportive workplace culture.[6] A lack of supportive learning from theory to practice result in undue mental stress and transition shock, leading to poor retention of staff in the perioperative environment.[6,8] Whilst ACORN recommends educational concepts be incorporated into the clinical perioperative orientation, there appears to be a paucity in these types of educational frameworks in Australian healthcare facilities.[2,9]

This case study describes the components and evaluation of an educational program for NN undertaken in a tertiary metropolitan hospital (Northern Adelaide Local Health Network) in South Australia. The study site found 20% of senior nurses intended to retire within the following two years. These figures, similarly, reported in sites across Australia and the United States of America (25–55%), identify an ageing workforce.[10] Faced with an increasing novice workforce with limited skills, there was an urgency to upskill NN.

METHODS

The program included NNs undertaking a three-month rotation covering speciality areas (Figure 1) with an assigned mentor (n=13). Rotations began in April 2021 and concluded in December 2024. In this study, novice nurses were defined as any nurse with under 4 years of postgraduate experience in the perioperative setting. Existing staff meeting the requirements only completed the areas they needed. The education program focused on 14 speciality perioperative areas, including an overview of speciality, types of surgical procedures, pathophysiology, pharmacology, and clinic operating days with corresponding specialist doctors.

Adapting the ACORN recommendations for orientation to the perioperative environment [9] and guided by Benner's[11] novice to expert framework, the quality improvement project (QIP) activities used self-guided learning and mentoring to

TABLE 1. QUALITY IMPROVEMENT ACTIVITIES

QI activities	Aim	Activities	Activities undertaken
Educational program	To develop critical thinking, clinical reasoning and assist consolidation of both theoretical and clinical components of the learning process	• Tailored education pack self-directed learning (Each speciality area, including written and visual information/ further links to resources. Topics included procedure types, equipment, instruments and consumables, positioning equipment.) • Self-assessed/review mentor sessions • Assess clinical application to develop knowledge and apply scout skills and scrub skills with supervision	• Completed self-directed learning pack (assessed mentoring sessions to ascertain learning gaps and progress) • Demonstrated in confidence and workplace performance, participating and demonstrating confidence in routine practice for each speciality. Demonstrates skills for scouting and scrub nursing with supervision (activities assessed by mentor and discussed mentee)
	Identify any concerns with the program or gaps in learning	• Mentoring	• 1:1 meeting (daily and ad hoc) with mentor • NN monthly meeting • The mentor and NN addressed aspects of daily allocation, including staffing and skill sets. To optimise immersive experiences, specialties with a greater number of theatres lists per week were allocated two or more NN.
	Evaluate the QI activity and assess the effectiveness of the education program for NN knowledge	• Surveys • Free text – themes analysed inductive approach	• Surveys: De-identified surveys containing 12 questions, 4 Likert scale, 5 free text, and 3 dichotomous, evaluated the role of mentors, support network and skill acquisition for novice nurses. • Example: 1) Was adequate supervision and guidance supplied during this clinical placement? 2) What factors had a positive effect on your learning experience for this area? 3) What factors inhibited your learning in this area?
Staffing numbers over the timeframe	Assess staffing and retention over implementation	• Daily Staff FTE and employment rates –beginning, during, and post-implementation monitored NUM	• Reduction in 7 senior staff retiring and one intermediate nurse leaving for work at another site • 17 NN requested to remain following the intervention

develop skills and evaluate implementation (see Table 1 and Figure 1).

QIP activities included NN completing an educational learning package with a tick box self-assessment developed by the Nurse Unit Manager (NUM) and the Associate Nurse Unit Manager (ANUM). The assessments were reviewed in mentor sessions to ensure knowledge attainment.[6] This process has proven to consolidate both theoretical and clinical components of the learning process.[4] Monthly focus group sessions were run by the NUM, or ANUM to aid with the review and revision of the program. The QIP was assessed using de-identified surveys, consisting of 12 questions (4 Likert scale questions, 5 free-text, and 3 dichotomous) to assess the effectiveness of the program from the participants' perspective (Appendix 1). Staffing rates pre- and post-intervention was recorded to track overall staff retention in theatre (see Table 1).

Evaluation of findings have been expressed as numbers, and percentages, and free text responses utilised a code book inductive approach for analysis with overarching themes.[12]

The project was approved by the Central Adelaide Local Health Network (CALHN) Higher Research Ethics Committee (Approval number: HREC19584).

RESULTS

Novice nurses (n=20) beginning the program included new NNs to the area (n=17) and existing staff (n=3). The was a 95% completion rate for the first 12 months and 100% (n=17) in later rotations (see Figure 1). Attrition rates a result of existing staff (n=2) requiring skill in selected specialties and one NN resigning for a permanent position at another hospital (n=1). The overall staffing rates in the main perioperative area during the intervention saw a reduction of 7 senior staff members retiring and one seeking employment at another site. Informal requests to stay in the theatre were made by the remaining NNs in the program.

The completion rate of self-guided learning booklets was difficult to assess, as booklets were not collected post-program. Additionally, 88% of mentors cited no documentation or verifications of completion in the booklets.

Surveys were completed by 11 (55%) NNs and 8 (63%) mentors (see Appendix 1). All participants understood their role in the program. Most mentors (88%) considered that the NN had progressed from novice to intermediate level in scouting, scrubbing minor cases, and the mentor's major area.

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Most NNs (72.7%) reported the overall learning experience as excellent. Further, 45.5% of NNs strongly agreed, and 54.5% agreed that they received adequate supervision and guidance during clinical placements, and that the self-directed resource books enhanced access to relevant and up-to-date information within the clinic. 45.5% strongly agreed, and 45.5% agreed that the guidance received from nursing staff was constructive and forthcoming. Most mentors stated that 75% of NNs were engaged in learning, with 62.5% making themselves available for sessions, and 91% requesting busy morning shifts. Mentors reported that barriers to education engagement included lack of staffing (27%) in the perioperative area, allocation to specified lists (27%), no time to educate (13%) and the complexity of specialties requiring a wide variety of skills and knowledge (13%) (see Appendix 1).

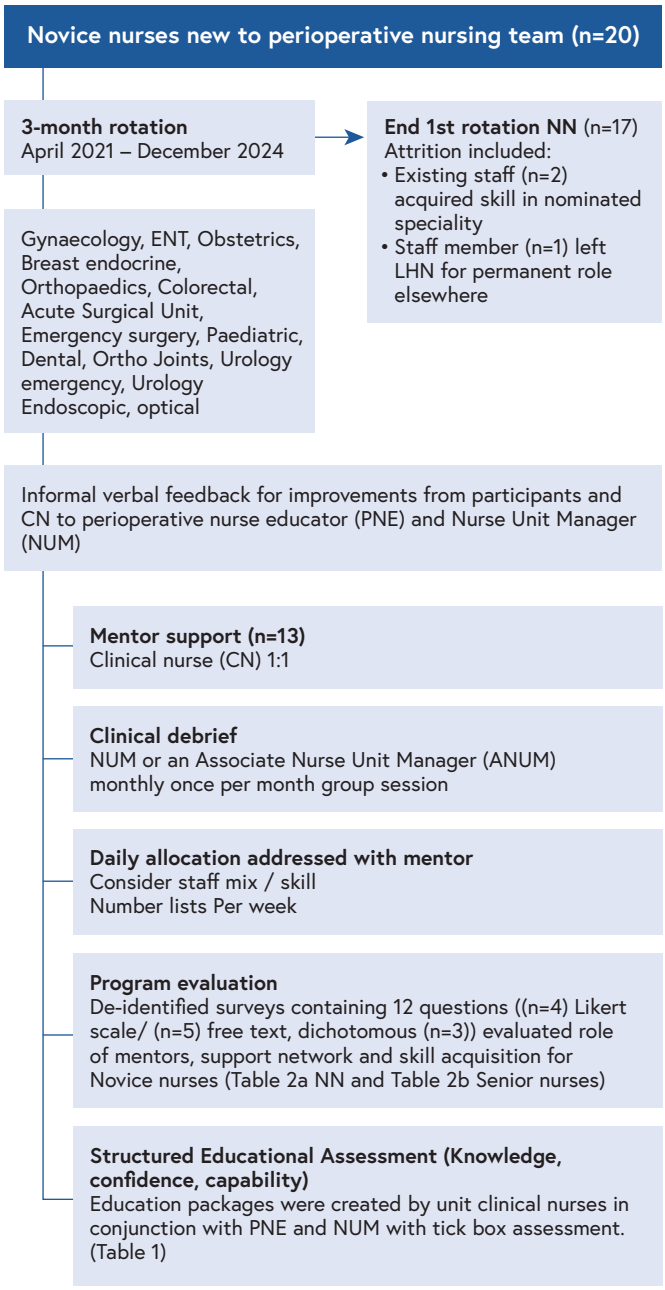

FIGURE 1. NOVICE NURSES NEW TO PERIOPERATIVE NURSING FLOW CHART

Free-text responses from feedback sessions, focus groups, and surveys were collated into main themes with codes. These included strengths and limitations relating to learning, mentoring, and organisational impact (see Table 2). Organisational constraints were the main barrier to the program, including staffing levels, busy clinics, and availability of mentors. Despite this, the overall educational intervention was reviewed favourably in building knowledge, skill and confidence by participants. Notably, opportunities were sought to build skills in additional case selection, supported by the theatre team, fostering a collaborative approach in supporting the NN and positive work culture. Reflected in statements by NN, who requested to stay in theatre, "My mentors' passion for perioperative nursing and teaching is pivotal… I'm not scared anymore, and I want to stay in perioperative" NN11.

DISCUSSION

Consolidation learning over a 12-month time frame contributed to NN demonstrating clinical ability, reporting a sense of security, and support within the perioperative area. These findings are consistent with studies that report the value of multifaceted learning and mentorship.[13-15] Moultrie[13] found flexibility in learning schedules that accommodated the unique needs of learners, which was displayed in our findings, with the use of reflective learning, learning assessment booklets, and mentoring. Self-paced educational booklets offered the adult learners flexibility to self-direct learning, meeting their educational needs. These strategies have been shown to be effective for all adult learners and applicable to nursing education.[16] Additionally, NN mentoring sessions promoted clinical reflection and learning, with mentors acknowledging that most NN had attained skills and confidence. However, it was difficult to show this outcome as educational booklets were poorly documented. Future workbooks need to consider focusing on strategies that encourage and prove completion rates, including incentives, online forums, virtual teams, or quizzes.

Survey responses reflected that ongoing mentoring and educational resources increased NN knowledge, positivity and confidence, resulting in increased levels of preparedness to scrub and scout for theatre lists supported by their mentor. These findings are similar to other studies, which report that a positive work environment enhances not only self-efficacy and resilience but also staff retention.[14]

Debriefing sessions were described as helping communication between the NNs and senior leaders, promoting reflection, learning and support. These findings add to the current literature.[17-19] NNs who identified areas for improvement found the open lines of communication with

TABLE 2. OVERARCHING THEME, GROUPING CODES FROM FOCUS GROUPS, SURVEY FREE TEXT

Theme	Grouping code	Novice Nurse		Mentors	
		Strengths	Limitations	Strengths	Limitations
Consolidation of learning	Meaning codes	Relevant information from mentors, hands-on experience/ completed booklets facilitated Knowledge/ skill. Rotations fostered practical experience in scouting and scrub nurse.	Organisational demands. Poor documentation in booklets.	self-paced learning supports adult learners. 1:1 mentoring, consistency in speciality increased NN knowledge and skills and overall morale of the entire team.	NNs have no initiative to roster busy shifts. Poor documentation in booklets.
	Statements	NN4 "The resource trolley was evolving but it kept me on my toes" NN10 "Before this allocation I was anxious to relieve in the theatre through support and education I am loving it"	NN1 "You can't anticipate what comes in as emergency and you can't request those cases, I would have loved a hemicolectomy!" NN2 "It's so busy sometimes you can't sit and look or complete the educational pack"	M8 "Ongoing support for NN and others is important as a team" M6 "We are working better as a team"	M1 "NN need a broader exposure across specialities" M10 "Some are not proactive at requesting to get experience". M5 "There needs to be evidence of completed packages"
Mentoring	Meaning codes	Supervision and feedback are timely and constructive. Mentors had a high level of expertise. Adequate guidance when sufficient staff. A collaborative team fostered growth growth-positive workplace. Debrief focus group	Organisational demands/ reduction in senior staff. Lack of availability of a mentor and allocation to clinics.	NN- comprehensive introduction and build skills. Growth NN in confidence scout/scrub with assistance. Develops collegial environment, job stratification.	Seniors need to de-brief. Issues juggling organisational demands.
	Statements	NN5 "My mentor and I planned our 3 months in advance looked for available cases she encouraged me to participate" NN7 "I worked closely with my mentor. I could ask any questions- I was supported"	NN9 "My mentor was great but other seniors lacked experience in educating". NN4 "Sometimes when clinical mentor is not their other staff have less experience".	M11 "I enjoyed mentoring, the education package helped me also".	M6 "Its difficult to juggle my role, their role and a buy unpredictable place"
Organisational impact	Meaning codes	Supported program. Availability mentor/ opportunity. Proactive in requesting shifts and scrubbing for lists.	Time pressures, staffing levels impacted on clinic allocation and learning. Pressured environment impacted on senior staff's availability to mentor effectively.		No time to update resources. Busy shifts, low staffing negative impact mentor role.
	Statements	NN3 "Every shift I had a mentor and request to scrub/ scout" NN6 "My mentor was always available; I love it and want to stay"	NN8 "I would have liked more shifts to consolidate skills" NN2 "Request to scrub not available as there just isn't senior staff to mentor"		M7 "The package is evolving, and I was more aware of my role as it progressed, but we need time to do this role properly"

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their mentor beneficial in planning ongoing objectives to meet their needs. Open communication is vital in fostering trust, understanding, and enhancing work satisfaction and morale.[1,19,20] This may have contributed to higher completion rates for NNs in the program and their requests to still be in the perioperative area.

Organisational constraints posed challenges for the program, with limited lists affecting clinical exposure skills and knowledge acquisition. It was clear through feedback that NNs who had multiple lists per week reported gaining confidence faster. On review, NNs with limited lists were offered longer rotation in specialties. Identifying that theoretical knowledge requires time in supportive practical placements to obtain skills.[6]

Mentors were challenged with balancing work demands and mentoring. Whilst the responsibility for teaching and mentoring was fulfilling, it was time-consuming and stressful. Durkin et al. (2023) reported the need to support and appreciate mentors, citing that mentoring engagement with inexperienced staff can be overwhelming, leading to burnout.[21] This suggests that further programs should review the framework for mentoring, which could include quarantining time for senior staff to mentor, reviewing workloads for mentees, optimising mentor skills through training, and offering modes to debrief.

Whilst there are benefits to the reported educational intervention, limitations existed, including a small sample size and reporting on only one facility. Free text responses only reflect the views of the sample, and caution remains in applying findings to other sites. The poor documentation for self-assessment needs review and strategies developed to improve accomplishment.

CONCLUSION

The retention of skilled perioperative staff is essential for optimal patient outcomes, organisational efficiencies and a positive work culture and environment. This case study illustrates the successful bridging of the *theory-practice gap,* promoting perioperative skill acquisition and professional confidence for NNs, whilst enhancing positive workplace culture and staff retention within the study setting. Whilst self-paced and assessed learning is valuable for adult learners in nursing, there is a need to review the documentation and to evidence completion by all participants. Organisational constraints will continue to affect the perioperative environment and mentoring roles, however, greater efforts should be made to ensure mentors are trained, supported and appreciated, focusing on establishing a supportive culture for NNs to learn.

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CASE STUDIES

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