Peer-reviewed article

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Perceived barriers and enablers when choosing perioperative nursing: A qualitative study of nursing students.

Abstract

Background: Healthcare systems worldwide face critical shortages of perioperative nurses. This study investigated factors influencing undergraduate nursing students' career decisions in perioperative nursing after completing a mandatory perioperative course and professional practice pathway.

Methods and materials: A qualitative descriptive research design with a constructivist epistemology and experiential learning conceptual framework was used to develop six open-ended survey questions.

Results: Seventy final-year Bachelor of Nursing students completed the survey with a response rate of 20% (n=70/353). Data were analysed using qualitative content analysis. The results revealed that several perceived enablers and barriers influenced their choice of perioperative nursing as a career.

Conclusion: Positive mentoring and supportive environments were enablers, while some negative workplace cultures created barriers that overrode their initial enthusiasm. Voluntary operating theatre (OT) workshops created interest and excitement. Despite some negative placement experiences, most participants preferred the mandatory pathway over an elective option, highlighting the importance of exposure to the specialty regardless of career intentions. The study's results emphasise the need for cultivating respectful and encouraging clinical settings to help secure our future perioperative nurses.

Keywords: Nursing students; perioperative nursing; workshop; career pathways

Introduction

Perioperative nurses provide care in high-pressure environments, using highly specialised knowledge and skills to ensure the safety and wellbeing of patients during the surgical process. Currently, within healthcare worldwide, and particularly in Australia, the demand for perioperative nurses outstrips the supply.[1,2]

Increasing staffing pressures within Australia's healthcare sector are forcing the cancellation of non-essential surgeries, which has negative implications for patients, their families, and healthcare organisations.[3,4] Of concern, and recently highlighted in an integrative review, the perioperative nursing workforce faces significantly increased turnover and intentions to quit.[5]

Researchers in the US explored why students may choose or not choose the perioperative specialty and found that exposure or immersion in the area, affirmation by nurse managers, and availability of positions were the most influential. In addition, the authors found that generational values influenced participants' intentions to consider perioperative nursing.[6] Furthermore, a recent integrative review found that factors that promoted student learning in perioperative settings included supportive perioperative staff and good relationships, while negative interpersonal experiences impacted student learning.[7]

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DOI: 10.26550/2209-1092.1409

A recent integrated review of perioperative nurse shortages highlighted several factors impacting the workforce, including increased demand, inexperienced staff, a lack of new staff coming into the specialty, high turnovers, and an aging population.[5] Of concern, the studies found that most graduates opt for medical-surgical specialties, as perioperative areas were not offered in their undergraduate nursing programs.[5]

Strategies to aid these shortages highlighted the importance of promoting the specialty to undergraduate nursing students for recruitment and retaining experienced perioperative nursing staff.[5] The literature further highlights the importance of investigating the experiences of student nurses to help bolster the perioperative workforce and promote this important specialty.

In some university nursing degrees, perioperative nursing is an elective course among a choice of other nursing specialty electives. Aspects of perioperative nursing theory and skill development may be embedded into generic clinical skills courses, but it is increasingly rare that existing nursing programs offer a mandatory perioperative nursing course followed by a perioperative nursing professional practice rotation in the clinical setting to consolidate learning. In this study, students enrolled in Bachelor of Nursing at a university undertook this mandatory pathway of a standalone theory course and professional practice.

The course included lectures on perioperative nursing knowledge, skills and specific patient care at all stages, with guest lectures from industry representatives from ACORN and graduates, laboratory skills sessions with principles of asepsis and scrubbing gowning and gloving, instrumentation and counts, perioperative airway management and pharmacology, sharps safety, patient positioning, documentation activities, post-operative patient care activities, and students engaged with Virtual Reality 360-degree perioperative videos on surgical procedures as a tool to help consolidate learning, engagement, motivation, and transfer of knowledge.[8]

Students also participated in a unique, voluntary weekend immersion/workshop in both public and private operating theatres (OT) in hospitals. That included a tour of each perioperative area including the Central Sterile Services Department (CSSD), opportunities to meet and talk with staff about career pathways and roles, demonstrations of patient positioning in theatre, equipment and resources demonstration and instrument tray set up in the OT with a count activity, with student's volunteering in activities at each stage for hands-on learning and consolidation.[8]

Ongoing feedback in previous course evaluations suggested that students who participated in the voluntary OT workshop were more likely to consider the specialty for their career. This suggested that student knowledge and learning were enhanced for the application of theory to practice.

The aim of the study is to understand what influences students' decision making to choose or not choose a career pathway in perioperative nursing prior to graduation. This information may help to inform universities, and health service administrators identify ways of improving employment rates in perioperative nursing areas.

Conceptual Framework

Within nursing education, experiential learning aims to integrate theory and practical elements as part of 'hands-on' learning.[9] Experiential learning posits that learning occurs during and from experiences that can occur in both classrooms and clinical settings.[9] Furthermore, experiential learning includes elements of the processing of knowledge and skills through application, reflection, experiences, and experimentation.[10]

For this study, the experiential learning framework alongside the constructivist epistemology provided a blueprint for how students may translate theory to practice when they undertake mandatory course activities, voluntary OT workshop/immersion opportunities and subsequent clinical placement in the perioperative nursing specialty.

Research question

The guiding research question for the research project was 'What are nursing students' perceived enablers and barriers to choosing a career in perioperative nursing?'

Terms 'enablers' and 'barriers' used within the survey tool and in qualitative content data analysis connected to the research question for students' own perceptions of what they felt were their enablers and barriers to completing the mandatory course pathway.

These terms linked the guiding conceptual framework of theory to practice transitions and the constructivist epistemology for the study, as participants' unique perspectives helped provide context for their pathway insights.

Methods

The study used a qualitative descriptive research approach to explore participants' experiences, attitudes, and perceptions using an open-ended survey with six questions. This was achieved within a constructivist epistemology that emphasises that individuals actively engage with and interpret their experiences, shaping their understanding of the world.[11]

The constructionist paradigm seeks to understand the significance and meanings behind life events to help identify what participants feel is important and requires interpretation through thinking and analysis of the situation.[11] Within the paradigm, researchers' observations and subsequent findings are constructed and shaped by the phenomena and societal influences being observed.[12]

This approach best suited the study aim and research question to capture students' perspectives of the phenomena of moving from the theoretical aspects of the mandatory course to the practical components of the clinical placement and their unique experiences across these clinical sites.

Researcher characteristics

The researchers were academic staff with qualifications at the master's and doctoral levels in the school of nursing and midwifery at the university. The researchers had previously coordinated and taught in the perioperative course, having extensive perioperative clinical expertise and knowledge. Researchers had no dependent relationship with students at this stage of their degree, and

all responses were anonymous to allow freedom to express their viewpoints and perspectives without being identified. A researcher with experience in data analysis of mixed method studies conducted the data analysis for this study with the support of an expert from the participating university.

Setting

The study was conducted at a private university in Western Australia. Undergraduate students completing a Bachelor of Nursing program undertook a three-year program, which included up to 1120 hours of professional practice. This program included six stages, with a professional practice rotation for up to five weeks full-time at the end of each stage to consolidate theory to practice.

Students in the second year of the program completed the mandatory perioperative course, followed by a professional practice rotation in the specialty that included practicum experiences in both private and public hospital settings in metropolitan or rural settings in Western Australia.

Sampling strategy

There are six stages in the Bachelor of Nursing program. The students progress sequentially from stage one to six following successful completion of each stage. Final-year Bachelor of Nursing Students (stages five and six) were invited to participate in the open-ended survey in Qualtrics, which is an online survey tool. These students had completed both the perioperative mandatory course in stage four, and most undertook a perioperative professional placement that lasted four to five weeks in duration. These students graduated at the end of stage six and were best placed to complete the survey to help answer the guiding research question. Therefore, the study used a purposive sample due to the target participants having completed both the mandatory perioperative course and professional placements. The open-ended survey was emailed to all 353 final-year students and was open for four weeks. The survey was promoted on their learning management sites and emails and was estimated to take 10–15 minutes to complete.

Ethical considerations

Students received the Participant Information Sheet (PIS) and consent documentation with the assurance that participation in the study would not impact their education, assessment, or progress in their study, nor will any respondent be individually identified. The survey did not collect any personally identifiable information. By maintaining anonymity, this allowed the freedom of expression with sensitive and honest accounts in the narrative responses. Only basic demographics were collected.

An identifier code was only applied by the researchers in data analysis and for coding of responses. Participants were reminded that participation in the study was completely voluntary, and they were free to withdraw from further participation at any time without giving a reason and with no negative consequences. Participants were offered a summary of findings on request.

The study received approval from the university's Human Research Ethics Committee (HREC), the Australian equivalent of an institutional review board (IRB), which protects the rights and welfare of human research participants. Data were secured online in the survey that only researchers could access via a secure link and password. The data analysed were stored securely as per the university policy for research data management.

Survey design and data collection

Qualitative open-ended survey questions were developed by the researchers to answer the guiding research question on students' perspectives of their experiences that connected to the conceptual framework.

Questions were based on the literature, researcher expertise, and background knowledge and aimed to explore how students constructed meaning and reflection through their experiences. Formal feedback trends in previous courses and teaching evaluations added further context to the development of questions, with the survey being reviewed within the research team and external qualitative experts for clarity, comprehension, and flow.

Students were sent a link to the study that included a tick box for consent before commencing the survey along with the participant information sheet. Students completed the demographic questions and six open-ended text-based questions for qualitative data collection. Two questions included a Likert scale to determine students' intentions to consider perioperative nursing before and after the mandatory pathway, as most had recently completed stage four weeks to months earlier and were considering their career pathways nearing graduation.

The open-ended survey was anonymous, with initial demographic questions including gender, age group, and question regarding their career intentions for the specialty prior to and after completing the course and clinical rotation. The six open-ended questions provided linkage to the experiential learning framework, which posits that learners connect their learning in current experiences from their past (and for future) situations.[11]

As such, nursing educators are encouraged to maximise both classroom and clinical learning opportunities to enhance critical thinking and transformative learning, as nursing is a practice-based profession.[11] Therefore, the open-ended questions developed investigated what students felt were the enablers and barriers in choosing a career in perioperative nursing after completing the mandatory perioperative course and professional practice pathway as part of the Bachelor of Nursing degree (Appendix A).

Data Analysis

Following completion of the survey, the data were exported from Qualtrics into word-processing software, transcribed, cleaned and entered into tables in preparation for analysis. One researcher first analysed all question and answers, while other researchers read and cross-checked the themes in discussion. Data were analysed using an inductive and deductive content analysis approach using the three main phases of preparation, organising and reporting. The code frame was based on the six questions from the survey.

Content analysis included open coding and creating and grouping categories that emerged from the data.[13] Frequency

counting of words and themes enabled collation of student preferences for some open-ended responses, as described in some of the following results. The study incorporated procedures to support trustworthiness and rigor, which included clear audit trails.[13]

Credibility included co-authors having more than 10 years of clinical experience as nurses when cross-checked data and analysis independently for interpretation and for interrater reliability.[13] A qualitative expert from the university was consulted during data analysis when coding the responses and for the development of themes.

Results

Demographics

Seventy students completed the survey, providing a 20% response rate from enrolled final-year students in the program. While a 20% response rate could be considered low for a quantitative survey sample, the main study consisted of qualitative open-ended survey questions, thus providing a large amount of rich data to analyse.

Most participants were female (99%, n=69), with 1%, n=1 males. Most participants were aged 18–24 years (69%); 11% were aged 25–29 years, 6% were aged 30–34 years, 4% were aged 35–39 years, 3% were aged 40–44 years, none were aged 45–49 years, and 7% were aged 50 years or older. All students confirmed in a demographic question that they were studying for a Bachelor of Nursing degree and had completed both the mandatory theory and the professional practice perioperative course.

As it was important to capture students who had completed both aspects of the mandatory perioperative pathway, this question included a 'no' option and asked the participants to exit the survey at this point and thank them for their time. Most participants (86%, n = 60) reported having attended a professional practice rotation in a perioperative area, including recovery, OT, the post-anaesthetic care unit (PACU), a catheterisation laboratory/angiography suite or radiology procedures, while 14% (n = 10) had not.

Researchers sought to explore participants' perceptions of whether they were considering a career in perioperative nursing after completing the mandatory theoretical and clinical components of the pathway. This was of particular interest because the participants' experiences were recent and they were approaching graduation.

A five-point Likert-type scale, ranging from 1 (strongly agree) to 5 (strongly disagree), was used to assess participants' responses after completing the pathway. For the survey item 'After completing both NURS2025 Nursing Care 4: Perioperative and NURS2028 Professional Practice 4, I am now considering perioperative nursing as a career pathway', 70 participants provided a response. Of these, 21 (30%) strongly agreed, 13 (19%) somewhat agreed, three (4%) neither agreed nor disagreed, 18 (26%) somewhat disagreed and 15 (21%) strongly disagreed with the statement. Overall, 49% of participants (n = 70) either strongly

Table 1: Students' perceptions of considering a career in perioperative nursing

Theme	Subtheme/s	Seminal quote/s
Considering specialty	Practicum placement impact	'..if I had not been able to attend this practicum, I would have been hesitant to enter it as a new grad due to the unknown of what it would be like it reality. (SN60) '...being able to attend an excursion at [OT Workshop] got me very excited for my prac. It was then my prac at [Hospital] in theatres that solidified my decision to move into perioperative nursing.' (SN56)
	Passionate teaching staff	'...my tutorial teacher was amazing, passionate and made the classes entertaining.' (SN36)
	Staff culture	'...they were very willing to teach and I felt comfortable to ask all questions that I had due to the receptiveness of the staff and also the understanding from the junior surgeons that along with them, I was also learning. Which further enhanced my interest and learning experience. (SN34)
Not considering specialty	Staff culture	I did witness a negative work environment between perioperative staff. This was a big deterrent for me as I found it harsh how the surgeon would communicate with staff and as a result they would take it out on other nursing staff. (SN33) The staff made me feel unwelcome and were very rude to me. Quite often the nurses in the theatre would speak a language other than English so had no idea what they were talking about and made me feel more excluded. One nurse made me actually cry... (SN44)
	Perceived loss of skills	'...placement was definitely my favourite and I enjoyed every day, but I realised that this type of nursing is extremely specialised, and I worried that if I went straight into perioperative nursing, I would lose my basic skills...' (SN62)
	Lack of pathway options	'...when I rang the Nurses Unit Manager (NUM) for more information, I had a very disheartening and off-putting conversation with her and decided not to pursue it any further...' (SN35)
Unsure	Keen on another specialty	'I really enjoyed my theatre placement however I am choosing not to do peri op nursing as I really enjoy working with the patient and building therapeutic relationships.' (SN66)

Table 2: Perceived enablers and barriers of the perioperative pathway

Open-ended survey questions (Appendix A)	Theme	Subtheme/s	Seminal quotes
Question/s 2-4, 6	Perceived enablers	OT workshop	'I loved a tour of an OT we had just before prac started and before exams. I found while I went to a different hospital to the toured one it helped me have a visual of the basic layout of an OT room, I helped me prepare and have a better mindset for it.' (SN11) 'If anything were to influence me to become a periop nurse, it was the workshop at [Hospital partner OT workshop] That was amazing, and the first (and only) time I thought maybe I'd be interested in this career.' (SN30)
		Lab skills	'I loved learning lab skills and understanding the operation process of counts in and out, for me the gowning gloving and scrubbing was a useful skill, I was glad we were assessed on it.'
		Professional placement	'I loved the emphasis on surgical conscience, so important, in actual practice.' (SN11) '...maintaining sterility has helped me improve my situational awareness and has benefited my hygiene practices when on placement.' (SN20) 'I understood why patients had certain pain because of how they were positioned and what the procedure actually entailed.' (SN25)
		Educators and course content	'The tutors enthusiasm spiked my interest.' (SN31) 'The lectures and skills labs I found really interesting, enjoyable and interactive. They made me excited to complete my periop prac rotation' (SN13) 'The aspect that influenced my decision was the VR/360 and guest speakers we had. It was exciting hearing what every day was like and the different variety of things you see in an operating theatre. It made me consider the career more after hearing from the guest speaker. (SN4)
	Perceived barriers	Staff culture	The teachers influenced me a lot in wanting to go into Periop nursing but after my placement in theatres I changed my mind.' (SN25) '...clicky staff and recognition that there were bullies within the teams but told to go into another theatre for that day. Management aware of these people but just let them get away with it.' (SN44).

agreed or somewhat agreed that they were considering perioperative nursing as a career, while 47% either somewhat disagreed or strongly disagreed. The following responses to the open-ended questions may help explain these findings.

In the first question of the open-ended survey, participants were asked if the mandatory perioperative course influenced them to consider a career in perioperative nursing (Appendix A). Many participants indicated that they were considering perioperative nursing as a career as they approached graduation, while fewer participants remained uncertain.

Most participants felt that their placement experience had the most impact, followed by the positive impact of teaching staff on the course and the positive culture of staff on their placements. Participants perceived specific barriers for not considering the specialty, which in turn may help to explain the previous demographic responses from 'after' completing the mandatory theory and placement pathway (Table 1). This included a barrier of 'staff culture' in the OT placement after their clinical placement experience, a perceived loss of skills, and lack of pathway options available.

Perceived enablers and barriers

Participants perceived several enablers and barriers to the mandatory pathway and professional practice experiences. The participants felt that the OT workshop was most influential and that the specific lab skills learned in the course, their professional placement experiences, educators' passion for the theory aspects, and their development of soft skills were important enablers. The main perceived barrier was professional placement's staff culture (Table 2).

Mandatory or elective course preference in the nursing curriculum

An open-ended question asked participants about their perceptions of their unique learning experiences to help understand their theory to practice transitions in the course pathway: Based on your experiences, would you recommend the mandatory course pathway, or would you prefer the course be an elective option for future

nursing students? Most participants recommended retaining the course as a mandatory pathway rather than offering it as an elective (Table 3).

Participants indicated that they may not have selected the perioperative elective if they had not undertaken the mandatory pathway due to not knowing what it would have been like. Participants felt that the mandatory pathway was recommended for transferable skills, enabling their soft skills development and the importance of sterile and aseptic techniques across both perioperative settings and in wards. Some participants felt the course should be an elective and most responses linked to their pre-existing different interests, and a smaller amount felt unsure if they were keen to straight into the specialty from graduation.

Discussion

Participants felt their main enabler was a positive staff culture when attending their clinical placements, similar to reports in other studies.[7] However, participants reported that the negative staff culture experienced on some clinical placements was a major barrier and contributed to a negative experience of the specialty.

Regarding staff culture and students' experiences, there are opportunities to build and improve, as perioperative nurses are important role models.[7] The study added new knowledge of the positive influence of voluntary OT workshops, adding enthusiasm and excitement for their placements and overall interest in the specialty. Immersion in the OT was seen as an enabler for a perioperative career pathway.[6]

As perioperative nursing may not be taught or experienced in most Australian nursing core curricula, risks for recruitment of future staff and preparedness for the specialty are evident.[14,15] The study found that a risk of not being exposed to the specialty could impact their career preferences near graduation. Similarly, another study investigated the perspectives of experienced perioperative nurses with new graduate nurses in the specialty and found several themes of the importance of adequate mentoring of graduates, the impact of an unfamiliar environment where students may not have had instruction in this specialty in their training, length of time in the rotation, generational issues, stress, and bullying.[16]

Table 3:Mandatory or elective course pathway preferences

Open-ended survey questions (Appendix A)	Theme	Subtheme/s	Seminal quotes
Question 5: 'Based on your experiences, would you recommend the mandatory course pathway, or would you prefer the course be an elective option for future nursing students?'	Mandatory	Risk of not knowing anything about specialty	'I would recommend the mandatory pathway because had I not done the mandatory pathway than I might not have picked it as an elective and I would have missed out on my favourite placement.' (SN20) 'How can you recruit the nurses of the future if they do not know what the job and surgical environment is like.' (SN31)
		Transferable skills	'...you can use a lot of the skills in other areas of nursing.' (SN4) 'Understanding the procedures and what's involved for the patient and health practitioners is important...you learn a lot of core skills such as aseptic technique, managing airways, providing pain relief.' (SN58)
		Soft skills development	'...it teaches people about situational awareness and makes nursing students think more about the sterile and aseptic technique.' (SN20) '..It improves insight and awareness and enhances critical thinking when on the ward.' (SN25)
		Sterile/aseptic techniques	'...some important skills that are essential to nurses no matter was field of nursing they do, such as aseptic techniques, Fields, key sites etc.' (SN59)
	Elective	Different specialty interests	'I think it can be an elective so long as the skill of scrubbing in is incorporated elsewhere in the mandatory units.' (SN30)
	Unsure	Different specialty interests	'...whilst this course influenced me to consider not going straight into perioperative nursing, it is still a very interesting and useful course to learn. In my experience speaking to students from other universities, many student nurses would love to have the opportunity to go on a perioperative placement. I was very glad I was given the opportunity and one day I would love to move into the specialty'. (SN62).

An elective-only option may be too late in the program to capture student interest in the specialty, as one study found that student participants' original primary employment intentions were not altered by the elective choice.[17]

Linking with the experiential learning theory framework, students translated theory to practice well and found specific enablers and barriers to their learning and career preferences in the mandatory pathway. Overall, students felt that their learning experiences were positive, which was encouraging. Most students felt their positive experiences with theory learned at university, course content, the OT workshop, and a positive experience with professional practice**,** led them to consider this specialty as a career pathway.

An interesting finding was that most students preferred the mandatory pathway for those who had experienced both theory and practice components. Most mentioned there was a risk the specialty wouldn't have been considered as a career option if they weren't exposed to this pathway, and this finding has implications for the specialty and universities.[18]

Implications and scope for future research

Locally, the study highlighted opportunities to improve students' perioperative placement experiences. There are implications for both perioperative nurses and senior nurses in management and executive roles. Due to some concerns in the study findings around student perioperative placement experiences and staff behaviour towards students, there is opportunity to consider aspects of staff development that could help improve the preceptorship of student nurses and encourage this career pathway for students.

Based on the study findings, universities could consider a mandatory perioperative pathway due to the transferable skills/experiences to other areas of nursing. Similarly, these findings echo the Australian College of Perioperative Nurses (ACORN) position statement for undergraduate nursing students and recommendations.[19]

A finding from the study that adds new knowledge is that universities and hospitals could consider regular OT workshop opportunities and/or open days to encourage interest and showcase the specialty. Further research could investigate links between OT workshops and OT open days and choosing the career pathway. A current risk across most university Bachelor of Nursing program pathways is that students may not experience perioperative placement or experience and therefore may not select a perioperative elective of study as an option for their pathway, if available.

The study highlighted the importance of undertaking a perioperative experience and how it influenced their decision making for their career. The results suggested numerous perceived benefits in transferable skills and knowledge for both perioperative and other specialties.

A final implication was for universities to consider embedding foundational perioperative nursing preparation into existing courses if no perioperative specific course is available in the Bachelor or Nursing pathway program. Enhancing pathways and partnerships between hospitals and universities for students while they are studying and as a career pathway could attract and retain future perioperative nurses. More research in this area would be valuable for this important specialty.

Strengths and limitations of the study

While the study offers valuable qualitative insights into the unique mandatory pathway, the single, private university site in Western Australia may limit the transferability of findings. Generalising findings to other universities that may not have the mandatory pathway should be conducted with caution.

Content analysis included trustworthiness procedures. However, there was a risk of researcher subjectivity. Interrater reliability between co-authors helped to reduce this risk, along with an external expert. Future research could focus on the perceived enablers and barriers with focus groups or interviews to allow for more in-depth data and clarification of student experiences.

A purposive sample was utilised, as it was a rare opportunity to sample students undertaking this pathway. This was the only pathway in Australia that included both mandatory theory and placement in the specialty. The selected university and geographical location, however, may limit the transferability of results to other settings, particularly in rural and remote settings.

Conclusion

The findings from the study improves the understanding of what influences nursing students' decision-making for the perioperative career pathway and offers new insights from their perceptions of the mandatory perioperative pathway.

Some of the key findings highlight the influence of positive staff cultures and mentorship during clinical placements as a primary enabler, resonating with the literature. Conversely, students who had negative experiences with staff culture emerged as a deterrent when they had been looking forward to professional placement from their educational opportunities. The findings emphasise the need to cultivate respectful and encouraging clinical settings to help secure future perioperative nurses. As an experiential learning tool, the voluntary OT workshops sparked interest and excitement and highlighted their future potential to enhance learning experiences and to encourage consideration of this important specialty for their career. Insights from the study may help to inform universities, hospitals that offer perioperative services, and the specialty to collaboratively improve employment rates and interest in perioperative nursing.

Acknowledgements

Thank you to our hospital partners for the OT workshops that were influential for students' enthusiasm and excitement for the specialty. A special thank you to the staff and organisations who supported these workshops. Thank you to the student participants for their valuable perspectives to help shape future opportunities and pathways for this important nursing specialty.

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.

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