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Linking student in nursing/student in midwifery employment to Australian professional standards: A cross-sectional study

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ABSTRACT

Background: Undergraduate nursing and midwifery curricula in Australia are accredited according to the Australian Registered Nurse Standards for Practice and Midwife Standards for Practice. At the university level, all subjects are mapped to their relevant professional standards. Little is known about the intersection between the curricula and dedicated student in nursing (SIN) and student in midwifery (SIM) employment roles.

Methods: This cross-sectional study, conducted in 2019 over 5 months, surveyed nursing and midwifery students working in undergraduate student employment roles at major public and private hospitals in North Queensland (NQ), Australia, using a self-report survey developed by the authors.

Findings: Data collected from 68 respondents indicated that work undertaken by SIN/SIMs in the areas of knowledge development, skill development, building confidence, and socialisation was highly valued by those who work in these roles. The findings also demonstrated links between student knowledge and skill acquisition that occurs at university and their application within clinical environments. Conversely, participants reported no formal recognition by their university of the knowledge acquired and learning undertaken within the workplace whilst in a SIN/SIM role.

Discussion: The results of this study affirm the important integrative relationship between this work and student learning, whilst also demonstrating links to the achievement of professional standards, a requirement for all nursing and midwifery graduates. The absence of collaboration and connection between the university and clinical settings is of major concern given the long-standing attempts to reduce the intransigent 'theory-practice gap'.

Conclusion: It is axiomatic that the work undertaken by nursing and midwifery undergraduates in dedicated clinical employment roles in NQ contributes in significant ways to student learning and professional development.

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Summary of relevance**Problem or Issue**

The links between dedicated student nursing/midwifery employment and the Australian professional standards have not been previously described.

What is already known

The Queensland Student in Nursing/Midwifery (SIN/SIM) or the Victorian Registered Undergraduate Student of Nursing/Midwifery (RUSON/RUSOM) roles provide undergraduate nursing/midwifery students with the opportunity to work in

dedicated clinical roles whilst undertaking their university study. These employment roles operate independently to their university study.

What this paper adds

This study demonstrates the links between dedicated nursing/midwifery student employment and student learning at university (and vice versa), affirming the significance of dedicated student nursing/midwifery employment to the achievement of professional standards, a requirement for all nursing and midwifery graduates.

1. Introduction

In Australia, as in other developed countries such as the United States and Canada, undergraduate students in nursing and students

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in midwifery, or those enrolled in a graduate entry to nursing practice programme (Masters pathway), engage in paid employment in a variety of roles across a range of healthcare environments (Kenny, Nankervis, Kidd, & Connell, 2012; Wise, Ossenberg, & Henderson, 2022). Clinically oriented student employment models in Australia fall broadly into two categories: those that *only* undergraduate Bachelor of Nursing, Bachelor of Midwifery, graduate entry or dual-degree students are eligible to apply for, and those to which anyone with appropriate certification and/or relevant experience can apply.

The former category includes the Undergraduate Student in Nursing/Midwifery roles in Queensland as described by Raffelt, Sidwell, Fennah, Davies, and Jauncey-Cooke (2018), or the Registered Undergraduate Student of Nursing (RUSON)/Registered Undergraduate Student of Midwifery (RUSOM) roles in Victoria (Willettts, Nieuwoudt, Olasoji, Sadoujji, & Garvey, 2022). Similar roles may exist in other Australian states and territories but we were unable to locate any evidence about them. These roles are 'regulated' in the sense that students enrolled in Nursing and Midwifery Board of Australia (NMBA) accredited nursing and midwifery degrees are automatically registered with the Australian Health Practitioner Regulation Agency (AHPRA), and thus fall under the Health Practitioner Regulation National Law, as enforced within each state and territory (NMBA, 2016). Undergraduate student nursing/midwifery roles are complementary to university studies, but importantly they provide undergraduates with the opportunity to become socialised to the healthcare environment, gain confidence working as a healthcare professional and begin to understand and apply their professional standards for practice (Australian Nursing & Midwifery, 2020; NMBA, 2016; Raffelt et al., 2018).

The latter category, which is *not* exclusive to students but to which they can and do apply, includes a raft of 'unregulated' healthcare roles with a host of different titles, including (health) assistants in nursing (AIN), personal care attendants, healthcare assistants, birth assistants, psychiatric aids, auxiliary nurses and aged care workers, to name but a few (Blay & Roche, 2020; Duffield et al., 2014; Lokmic-Tomkins, Khor, Matthews, Martin, & McGillion, 2021; Australian College of Nursing, 2019; Australian College of Nursing, 2021). This heterogeneous assortment of roles provides ancillary services across a wide range of healthcare settings, including (but not limited to) public and private hospitals, day procedure settings, mental health inpatient settings, residential aged care and disability services and privately contracted in-home care (ACN, 2019; Roche, Glover, Luo, Joyce, & Rossiter, 2021). Non-student personnel in these roles often have vocational qualifications, such as a Certificate III in Health Services Assistance (Davies, Keenan, & Redley, 2017).

In all Australian jurisdictions, undergraduate nursing students can be employed as AIN without a vocational qualification in the second or third year of their undergraduate programme, or in the first year if they have completed other relevant training and/or possess equivalent experience (Australian Nursing & Midwifery, 2020; New South Wales, 2021; New South Wales Nurses and Midwives' Association, 2020). Given the burgeoning nature and diversity of these roles, and with quality and safety concerns in mind, the ACN has long called for the regulation of unregulated workers, "...to achieve nationally consistent nomenclature/titles, minimum educational and ongoing professional development requirements and standards for scopes of practice" (ACN, 2019 p. 6).

There is scant evidence elucidating regulated undergraduate nursing/midwifery student employment roles across Australian jurisdictions, apart from that describing the RUSON/RUSOM roles in Victoria (Kenny et al., 2021; Willettts et al., 2022). We also note that the existing literature does not appear to overtly explore the links between the professional standards for practice and these work roles for Australian nursing/midwifery students. With this in mind, the aim of this study was to investigate the links between

undergraduate employment roles to the professional standards for practice, as well as determine if there were any differences in the scopes of practice of these roles in North Queensland (NQ) hospitals. In the context of this study and throughout this paper, paid undergraduate student work roles will be referred to as student in nursing (SIN) and student in midwifery (SIM) roles, to align with the most commonly used terminology in NQ, Australia.

The research questions underpinning this study were:

1. How do SIN/SIM roles contribute to knowledge development, skill development, building confidence and socialisation to the nursing and midwifery profession and healthcare environments and does this differ based on public or private hospital employment?
2. Does employment in SIN/SIM roles contribute to the achievement of nursing and midwifery standards for practice, and if so, in what areas?

2. Background

The existing literature reports the ways in which the employment of nursing and midwifery students can complement their respective programmes of study (Kenny et al., 2021; Kenny, Nankervis, Kidd, & Connell, 2012; Mumford et al., 2023; Reyes, Hartin, Loftin, Davenport, & Carter, 2012). More specifically, 'regulated' undergraduate nursing employment roles have demonstrated numerous benefits for the student, their employing organisation and the recipients of care (Algozo, Ramjan, East, & Peters, 2018; Crevacore, Duffield, & Twigg, 2019; Lokmic-Tomkins et al., 2021; Raffelt, Sidwell, Fennah, Davies, & Jauncey-Cooke, 2018; Sweet, Vasilevski, & Sweeney, 2023). Some of the major professional benefits for students reportedly include learning how to build therapeutic relationships (Algozo et al., 2018), improving communication, time management, care planning and prioritisation (Algozo, Ramjan, East, & Peters, 2019; Wise, Ossenberg, & Henderson, 2022), increasing their confidence, capability and readiness to practice (Crevacore, Jonas-Dwyer, & Nicol, 2016), and enhanced opportunities for employment following graduation (McLachlan, Forster, Ford, & Farrell, 2011). Dedicated nursing and midwifery student employment roles also benefit health services by providing a pathway for socialising student nurses and midwives into the healthcare environment (Kenny et al., 2021), which assists in closing the gap experienced by students transitioning to the role of a Registered Nurse/Registered Midwife upon graduation. Furthermore, the presence of students employed in dedicated clinical roles has proven to be of benefit to the patient experience, not only for the direct care they provide but also indirectly, as they freed up time for Registered Nurses to be able to manage their heavy workloads more effectively (McGillion, Trueman, & Mill, 2022), particularly throughout the current COVID-19 pandemic.

Models of employment specifically designed for undergraduate students in nursing and midwifery differ substantially within and across states and territories of Australia (Algozo et al., 2019; Browne, Cashin, Graham, & Shaw, 2013; Cleary et al., 2012; Crevacore et al., 2019). As mentioned, the State of Victoria is leading the way with clearly defined employment models for Registered Undergraduate Students of Nursing (RUSON) (Kenny et al., 2021), and Registered Undergraduate Students of Midwifery (RUSOM) (Mumford et al., 2023). The Victoria state government supports healthcare services by providing practical guidelines for recruitment and implementation of RUSONs (State of Victoria, Department of Health & Human, 2020), including clearly defined position descriptions, remuneration and scope of practice. Queensland, whilst having these employment roles, does not define them as clearly or comprehensively as is the case in Victoria.

State and territory health services that employ students in dedicated employment roles may have a different scope of practice to AINs, in the sense that they reflect the year level in their undergraduate degree. Some organisations offer employment to students who have successfully completed a year of full-time study (Mumford et al., 2023), whereas others stipulate that students must have completed at least two years of full-time study. In some states, students undertaking a dual degree in both nursing and midwifery must have completed three years of their four-year course. A position statement issued by the *Australian Nursing & Midwifery (2020)* states that the scope of practice should be in accordance with the employing organisation's scope of practice, and the individual scope of practice, indicating that differences are possible depending on the employing organisation. Indeed, the management of this particular workforce operates inconsistently Australia-wide, as student roles and their scopes of practice differ across jurisdictions or may be open to some interpretation depending upon where the position is held.

Importantly, although regulated roles such as the RUSON/RUSOM in Victoria have proven to be beneficial to employing health services, patients and students, this model of employment is not intended to address workforce shortfalls. In fact, the *Australian Nursing & Midwifery (2020)* has made it clear that they are to be employed above standard nurse-to-patient ratios, and as “an additional resource to support the provision of high-quality, personalised care for every patient” (p.7).

Over the past decade, pressure has increased substantially upon hospital and health services due to an ageing workforce, and an ageing population with more complex healthcare needs. The COVID-19 pandemic has dramatically added to these pressures (*Australian Institute of Health and Welfare, 2022; World Health Organization, 2020*). As the impacts of the pandemic began to escalate in Australia, pre-existing workforce shortages within the health system led to healthcare students, including nursing and midwifery students, being utilised as part of a ‘surge workforce’ (*Bogossian, McKenna, & Levett-Jones, 2020*). State and Territory Governments employed students to undertake roles that included polymerase chain reaction testing, immunisation administration and bookings and client observation. As a response, the NMBA issued a statement to guide the employment of student nurses/midwives compared to staff working as AINs, in order to ensure workforce shortages were managed safely (*NMBA, 2020*).

Whilst there is a growing body of Australian literature describing aspects of undergraduate nursing and midwifery employment (*Crevacore, Duffield, & Twigg, 2019; Sweet, Vasilevski, & Sweeney, 2023*), there is little documented evidence regarding how these roles link to their respective professional standards. In Australia, nursing and midwifery professional standards for practice are set by the NMBA and, together with codes of ethics and conduct for each group, contribute to the NMBA's core role of protecting the public (*NMBA, 2016*). On behalf of the NMBA, the AHPRA is required by law to register all undergraduate nursing and midwifery students, which makes them subject to the relevant provisions of the Health Practitioner National Law and Other Amendment Act 2017 (*Queensland Government, 2017*) and the aforementioned professional standards. In the context of this study, the practices of nursing and midwifery students employed in dedicated clinical roles for which only they can apply, are thus governed by this regulatory framework.

3. Methods

3.1. Study design and setting

A cross-sectional design was used. The setting included participating major public and private hospitals in NQ, Australia.

3.2. Instrument

Participants were presented with a questionnaire containing 54 items exploring the relationships between dedicated SIN/SIM roles and student learning. The questionnaire required predominantly quantitative responses to Likert-scale questions, with the added opportunity to respond to a limited number of qualitative questions used to elicit open responses supporting the quantitative questions. As this was an exploratory study, all items were generated by the research team, and underpinned by the Registered Nurse Standards for Practice (*NMBA, 2016*) and Registered Midwife Standards for Practice (*NMBA, 2018*). The items focused upon the broad themes of knowledge and skill development, and socialisation into the role of the nurse/midwife, as well as within the wider healthcare team/organisation. Face validity was tested by both undergraduate students and academics outside the research team. Please refer to the Appendix for full survey.

3.3. Participants

In March 2019, participants invited to the study were students working in dedicated SIN/SIM roles in major public and, where present, private hospitals in Townsville, Cairns, Mackay and Mt Isa in Queensland, Australia in the period. These four sites were selected as they are University teaching sites and thus have undergraduate nursing and midwifery students residing, undertaking clinical placements and being employed in the local health services.

3.4. Data collection

Snowballing and convenience recruitment methods were used to obtain participants at local health service and university facilities. Recruitment sites included the public (n = 4) and private (n = 2) hospitals in Townsville, Mackay, Cairns and Mount Isa. Participants were presented with a URL where they could access the survey. All participants read an information sheet and indicated their consent to participate in the study. The questionnaires were developed using the Qualtrics XM online platform (*Qualtrics, 2020*).

The survey took approximately 15 min to complete and was active from March 10 until July 5 2019. Ethical approval for this study was obtained through the James Cook University Ethics Committee (approval number H7375) and the Townsville Hospital and Health Service Human Research Ethics Committee (approval number HREC/2018/QTHS/47359).

3.5. Data analysis and rigour

Data were downloaded from the Qualtrics XM online platform (*Qualtrics, 2020*), and all data management and statistical analyses were performed using the IBM SPSS for Windows software Version 27.0 (*IBM Corp, 2020*). Given the exploratory nature of the research and also the sample size, descriptive and frequency data were largely of interest. In addition, a series of nonparametric analyses (Mann–Whitney U tests) were conducted to explore the relationships between the variables. All p-values were set at <0.05 to determine statistical significance.

4. Results

4.1. Demographics

Of the 71 participant responses downloaded, 68 were deemed to be valid (i.e. had complete responses), with 56 indicating they were current or previous SIN/SIMs. Of all 68 participants, 49 participants (72.1%) were employed as a SINS and 5 participants (7.4%) were employed as a SIMs. Two participants were previously employed as a

SIN/SIM. The majority of participants were also female (51.5%), with 4.4% being male and the remainder undisclosed. The average age of the sample was 26 years ($M = 26.26$; $SD = 7.13$), with a range between 19 and 46 years.

Over 60% (61.8%) of participants were students from James Cook University (Australia) with 64.7% of the sample enrolled as full-time students. The majority of the sample were in their third year (64.7%), and 13.2% in their second year of study. Just over half (51.5%) of participants indicated that they began working as a SIN/SIM in their second year at university. Of the participants, 26.5% stated they had worked in this position for 12 months or more. Similarly, 26.5% indicated that they had worked between 4 and 6 months in either a SIN or SIM position.

Forty percent of participants indicated that they worked in a public hospital, with 35.3% employed in a private hospital. Interestingly, as well as their SIN/SIM role, the majority of participants (32.4%) also worked as an AIN (Assistant in Nursing), 7.4% worked also as a carer, 10.3% as another health professional, and 22.1% of the sample had other employment outside of healthcare. In total, 22.1% of the sample were only employed as a SIN/SIM. As per the participant's employment contract, on average, the majority of students (30.9%) holding a SIN/SIM role indicated that they worked between 17 and 24 h per week.

4.2. Knowledge development

The majority of student respondents (41.2%) indicated they felt 'moderately prepared', in terms of their own knowledge, to undertake a SIN/SIM role, followed by 23.5% indicating they felt 'very prepared'. Many participants (58.8%) also reported they almost always applied knowledge acquired from university to their SIN/SIM role.

The difference between public and private employment and the frequency with which working in a SIN/SIM role required the application of knowledge learnt at university was also assessed. Due to a violation in normality testing, a Mann–Whitney U test was used to test for differences between the two groups (private vs. public). The results indicated that there was no significant difference between the public ($M = 3.95$, $SD = 0.845$, $median = 4$; $IQR = 2$) and private groups ($M = 4.22$, $SD = 0.736$, $median = 4$, $IQR = 1$) ($U = 242.50$, $p = 0.226$) in the application of knowledge learnt at the university in SIN/SIM roles.

It was reported that the SIN/SIM roles were considered important in knowledge development across all areas, for example, knowledge of the Australian healthcare system, law and ethics and medication administration, with average scores over 4.1 (with a possible range between 1 and 5) over all areas of knowledge development. This same outcome was also seen across specific areas of knowledge development for midwifery, for example, presentation and management of women across the midwifery continuum of care, caring for a newborn and professional and clinical midwifery practice. A breakdown of this information is presented in [Table 1](#).

In the qualitative responses, many participants indicated that personal knowledge and patient care were the areas that were enhanced or improved in their SIN/SIM role. Examples of participant responses included: "Time management, management of deteriorating patient. Importance in management and care for pressure area cares. Importance of basic observations like temperatures blood pressure, pulse, respiratory rate". and "Effective communication, working alongside other health professionals, wound management, using aseptic technique".

Last, knowledge conflict was assessed, with 42.6% of respondents reporting there was knowledge conflict between the learnings at university compared with the workplace. In the qualitative questioning, the majority of conflict was focused on techniques used in certain skills-based procedures. For example, "We were not taught a

lot of things such as correct sterile techniques when assisting in a surgery. I just feel like there was a lot that we weren't taught at uni or at least not taught properly. I have learnt from watching and asking questions" and "Every nurse has a different technique for a lot of things, and you often find yourself learning and unlearning".

4.3. Skill development

To begin with, the difference between public and private working in the application of practical skills learnt at university was explored. Due to a violation in normality testing, a Mann–Whitney U test was used to test for differences between the two groups (private vs. public) on the frequency in which working in a SIN/SIM role enables the application of practical skills learnt at the university. The results indicated that there was a significant difference between the public ($M = 3.65$, $SD = 0.71$, $median = 4$, $IQR = 1$) and private ($M = 4.13$, $SD = 0.76$, $median = 4$, $IQR = 1$) groups in the application of practical skills learnt at the university ($U = 178$, $p = 0.040$), with the private group indicating greater skill application.

With regard to scope of practice (according to year level), no significant difference between public and private groups was found for working outside one's scope of practice ($U = 296.5$, $p = 0.551$) between public ($M = 1.44$, $SD = 0.64$, $median = 1$, $IQR = 1$) and private ($M = 1.54$, $SD = 0.66$, $median = 1$, $IQR = 1$) groupings or fulfilling scope of practice ($U = 286.5$, $p = 0.566$) between public ($M = 4.35$, $SD = 1.02$, $median = 5$, $IQR = 1$) and private ($M = 4.50$, $SD = 0.83$, $median = 5$, $IQR = 1$) groupings.

Students were also asked if there were any skills they perceived to have gained, enhanced or improved whilst working in the SIN/SIM role. Qualitative responses revealed a substantial emphasis on skills concerning patient care and personal growth. For example, for patient care, a participant's response stated: "Skin assessments, maintaining regular OBS, noticing any irregular changes with fevers, understanding what each individual's 'normal' limits are. General nursing cares, personal hygiene". For personal growth, a student's response stated: "Communication skills have become more of a personal learning rather than just what university taught (which I found did not cover enough areas or applications in this workplace). Time management and prioritising has definitely changed in the workplace due to the dynamics and environment (including workplace culture) from what university suggested...". These responses were also reflected in the quantitative questions regarding skill confidence with 30.9% and 19.1% of participants indicating that their confidence in applying skills obtained at university in the workplace was 'extremely likely' and 'somewhat likely', respectively. Interestingly, almost identical responses were also found when respondents were asked about the extent to which they thought their work as a SIN/SIM had increased their confidence in applying skills they had obtained at their workplace, to their learning at university.

Thirty-eight percent of respondents indicated they were 'moderately prepared', followed by 23.5% indicating they were 'very prepared' in terms of their own practical skills, to undertake a SIN/SIM role. Half of the sample (51.5%) also indicated they almost always applied the skills learnt at the university to their SIM/SIN role.

Participants reported that the SIN/SIM roles were important in skill development across all areas, for example, developing therapeutic and professional relationships and providing safe, appropriate and responsive nursing/midwifery practice, with average scores over 4.3 (with a possible range between 1 and 5) over all areas of skill development. This same outcome was also seen across specific areas of skill development for midwifery (e.g. presentation and management of women across the midwifery continuum of care, caring for a newborn and professional and clinical midwifery practice). The results are detailed in [Table 2](#) below.

Table 1
Response breakdown of perceived importance of SIN/SIM work split by areas of knowledge development.

Knowledge development area	Not at all (1)	(2)	(3)	(4)	Extremely (5)
	n (%)				
Knowledge of the Australian Healthcare System	0 (0)	3 (4.4)	8 (11.8)	20 (29.4)	22 (32.4)
Bioscience (anatomy, physiology, pharmacology and biochemistry)	1 (1.5)	2 (2.9)	7 (10.3)	23 (33.8)	20 (29.4)
Presentation and management of diseases	0 (0)	5 (7.4)	5 (7.4)	17 (25.0)	26 (38.2)
Safe medication administration	1 (1.5)	4 (5.9)	7 (10.3)	6 (8.8)	29 (42.6)
Recognising and responding to patient deterioration	0 (0)	1 (1.5)	1 (1.5)	7 (10.3)	43 (63.2)
Professional and clinical nursing practice	0 (0)	1 (1.5)	4 (5.9)	9 (13.2)	39 (57.4)
Communication	0 (0)	0 (0)	1 (1.5)	6 (8.8)	46 (67.6)
Aboriginal and Torres Strait Islander health and well-being	0 (0)	4 (5.9)	9 (13.2)	11 (16.2)	28 (41.2)
Law and ethics	0 (0)	1 (1.5)	12 (17.6)	11 (16.2)	29 (42.6)
Mental health	0 (0)	1 (1.5)	7 (10.3)	17 (25.0)	27 (39.7)
Evidence-based practice and research	1 (1.5)	2 (2.9)	9 (13.2)	15 (22.1)	24 (35.3)
Caring for people from multicultural backgrounds	0 (0)	0 (0)	7 (10.3)	13 (19.1)	32 (47.1)
Presentation and management of women across the midwifery continuum of care	4 (5.9)	4 (5.9)	6 (8.8)	19 (27.9)	20 (29.4)
Caring for a newborn	5 (7.4)	1 (1.5)	2 (2.9)	6 (8.8)	16 (23.5)
Professional and clinical midwifery practice	5 (7.4)	1 (1.5)	3 (4.4)	4 (5.9)	21 (30.9)

Note. 1 = Not at all important; 2 = somewhat important; 3 = moderately important; 4 = very important; 5 = extremely important; Question: "Rate how important you think your work as a SIN/SIM is to your knowledge development in the areas of...".

4.4. Building confidence

In the entire sample, 35.3% and 27.9% of participants indicated that their confidence in applying knowledge obtained at university to the workplace was increased to a 'great' and 'very high' extent, respectively. Almost identical responses were also found when respondents were asked the extent to which they thought their work as a SIN/SIM had increased their confidence in applying knowledge obtained at the university, to the workplace.

With regard to skills, 30.9% and 20.6% of the sample indicated that it was 'extremely likely', and 'somewhat likely' (respectively) that their work as a SIN/SIM increased their confidence in applying the skills learnt at the university, to the workplace. Almost identical responses were found when asked how likely their work as a SIN/SIM has increased confidence in applying workplace-learned skills, at the university.

More broadly, it appeared that SIN/SIM roles increased confidence in all areas of nursing and midwifery care, for example, developing therapeutic relationships and planning nursing and midwifery care with average scores over 4.3 (with a possible range between 1 and 5) in all areas. Refer to Table 3 for a breakdown of responses.

In the qualitative responses, increased confidence was consistently reported. For example, when asked what the advantages of being in a SIN/SIM role were, respondents stated: "My knowledge has expanded immensely, I have more confidence and I'm able to interact effectively with other professionals", "Confidence, communication, ability to utilise my skills regularly so I don't get flustered on placements. Job opportunities", "Utilising and practicing clinical skills, getting to know staff in the hospital, familiarisation of wards, increasing confidence in patient relationships".

Table 2
Response breakdown of perceived importance of SIN/SIM work split by areas of skill development.

Skill development area	Not at all (1)	(2)	(3)	(4)	Extremely (5)
	n (%)				
Engaging therapeutic relationships	0 (0)	0 (0)	2 (2.9)	10 (14.7)	39 (57.4)
Engaging professional relationships	0 (0)	0 (0)	1 (1.5)	13 (19.1)	37 (54.4)
Developing critical thinking and analysing nursing/midwifery practice	0 (0)	2 (2.9)	4 (5.9)	11 (16.2)	34 (50)
Planning nursing/midwifery care	1 (1.5)	0 (0)	4 (5.9)	18 (26.5)	28 (41.2)
Providing safe, appropriate and responsive quality nursing/midwifery practice	0 (0)	0 (0)	1 (1.5)	9 (13.2)	40 (58.8)
Comprehensively conducting assessments	1 (1.5)	1 (1.5)	4 (5.9)	10 (14.7)	33 (48.5)

Note. 1 = not at all important; 2 = slightly important; 3 = moderately important; 4 = very important; 5 = extremely important; Question: "Rate how important you think your work as a SIN/SIM is to your skill development in the areas of...".

4.5. Socialisation

First, the difference between public and private workers and ratings of perceived positive experience in SIN/SIM roles was explored. Due to a violation in normality testing, a Mann-Whitney U test was used to test for differences between the two groups (private vs. public) on ratings of perceived positive experience in SIN/SIM roles. The results indicated that there was no significant difference between the public ($M = 4.78$, $SD = 0.422$, $median = 5$, $IQR = 0$) and private ($M = 4.70$, $SD = 0.47$, $median = 5$, $IQR = 1$) groups ($U = 241.50$, $p = 0.507$) on ratings of perceived positive experience.

Differences between public and private workers regarding the likelihood of encouraging other students in an undergraduate nursing/midwifery degree to apply for a SIN/SIM role were also examined, with results indicating no significant difference between the public ($M = 4.74$, $SD = 0.86$, $median = 5$, $IQR = 0$) and private ($M = 4.78$, $SD = 0.42$, $median = 5$, $IQR = 0$) groups ($U = 244$, $p = 0.494$).

Differences were also assessed between the two groups (private vs. public) on whether they would seek employment at the workplace where they currently hold a position as a SIN/SIM. The results indicated a significant difference between public ($M = 4.30$, $SD = 1.19$, $median = 5$, $IQR = 1$) and private ($M = 3.52$, $SD = 1.24$, $median = 3$, $IQR = 2$) groups in frequency of likelihood of seeking employment at their current workplace ($U = 165.50$, $p = 0.020$), with public workers more likely to seek employment in their current workplace.

Participants were also asked to recall the disadvantages and advantages of the SIN/SIM role. In relation to disadvantages, the majority of responses were hospital-related. For example, "Sometimes being treated as a tool as opposed to an asset". and "...scope of practice can be challenged and some staff expectations further challenge tasks that we are expected to perform". and "I get so buried in the simple

Table 3
Response breakdown of likelihood SIN/SIM role increasing participant confidence.

Area of interest	Not at all (1)	(2)	(3)	(4)	Extremely (5)
	n (%)				
Developing therapeutic relationships	0 (0)	1 (1.5)	0 (0)	19 (27.9)	29 (42.6)
Developing professional relationships	0 (0)	0 (0)	1 (1.5)	18 (26.5)	29 (42.6)
Developing critical thinking	1 (1.5)	3 (4.4)	1 (1.5)	14 (20.6)	30 (44.1)
Planning nursing/midwifery care	1 (1.5)	2 (2.9)	3 (4.4)	17 (25)	26 (38.2)
Providing safe, appropriate and responsive quality nursing/midwifery practice	0 (0)	1 (1.5)	4 (5.9)	13 (19.1)	31 (45.6)
Conducting assessments	0 (0)	3 (4.4)	3 (4.4)	19 (27.9)	24 (35.5)

Note. 1 = Not at all likely; 2 = somewhat likely; 3 = moderately likely; 4 = very likely; 5 = extremely likely; Question: "How likely do you think your work as a SIN/SIM has increased your confidence in..."

tasks like OBS, BSLs, showers, pad changes, linen changes that I miss larger learning opportunities". In contrast, the advantages demonstrated many responses related to personal matters. For example, "I actually feel competent like when I graduate, I won't drown. I know how wards run and the faith that the nurses and midwives have in me instils confidence within myself that I am capable". Other participants stated that "Good pay, develops my skills and makes me more confident" and "all the competencies I have attained, interacting with registered nurses and doctors, communication skills, learning to be a part of the team, learning to work different shifts, getting paid to learn skills which will help when I am registered".

Participants were also asked to rate the level of organisational and professional support they received. The responses are provided in Table 4. Participants were asked to elaborate on the response if they chose 'Not at all supportive' to any of the questions. The qualitative responses reflected the low ratings for the university. For example, "My university is not involved with nor recognises my employment as a SIN". and "Personally I have never received any additional support from uni with work as it is not priority to earn an income, the priority is to study and finish your degree".

Last, 55.9% of participants rated their SIN/SIM experience (so far) as extremely positive, with 61.8% extremely likely to encourage other students to apply for SIN/SIM role, citing 'building confidence' and 'opportunity' as the major reasons why. Furthermore, 35.3% and 27.9% of the sample indicated that they thought it was somewhat likely and extremely likely (respectively) that the SIN/SIM role would increase future employment.

5. Discussion

This is the first reported study to capture the perspectives of undergraduate nursing and midwifery students employed in dedicated clinical roles across public and private hospitals in NQ. Moreover, no studies to the authors' knowledge have previously described the linkages between these roles and the attainment and application of relevant professional standards. As these students are on a study trajectory directed toward graduation as a registered nurse and/or midwife, clinical experiences gained during employment as SIN/SIMs that contribute to their professional development,

enhance the achievement of professional standards and complement their university learning, are vitally important.

Of significance in this study was the finding that SIN/SIMs working in NQ hospital settings reported that their work is very likely or extremely likely to directly increase their skill development and confidence against all seven of the RN/RM professional standards for practice. In addition, undergraduate nursing students working in NQ hospital settings perceived their SIN/SIM role to be important in terms of their knowledge development as an undergraduate RN/RM across a range of knowledge-based areas applicable to undergraduate nursing and midwifery student learning. Findings of this study across the areas of knowledge development, skill development, building confidence and socialisation to the health setting indicate the work undertaken by SIN/SIMs is highly valued by those who work in these roles.

This study also indicates that there are links between student knowledge and skill acquisition that occurs at university and their application within the workplace. However, these links appear to be tenuous, opaque and poorly articulated, and create ambiguity for both students and their clinical supervisors as they endeavour to implement the SIN/SIM role and concomitantly cultivate the requisite professional capabilities required of students. Moreover, respondents also reported that there was no formal recognition by the university of the knowledge acquired and kinaesthetic learning undertaken within the workplace. This absence of collaboration and connection between the university and the diverse clinical settings where students are employed is a major concern, particularly given the challenges faced by nursing and midwifery graduates entering increasingly complex healthcare environments, and the long-standing attempts to reduce the intransigent 'theory-practice gap' using strategies such as simulated learning in the university and also in extended, immersive, ward-based experiences (Davies, Sundin, Robinson, & Jacob, 2021; Wall, Andrus, & Morrison, 2014).

In NQ, these two environments of learning (university and workplace) for SIN/SIMs operate independently, as directed by the Australian Nursing & Midwifery (2020). However, with the two spheres of learning both contributing to the development of knowledge, skills, confidence and socialisation of undergraduate RN/RMs, and the alignment of SIN/SIM work with RN/RM professional standards for practice, the question remains whether there should be formal links established so that the work of SIN/SIMs can be recognised by the university. This would support the drive for what Moroney et al. (2022) regard as 'pedagogically rich' work-integrated learning activities.

5.1. Limitations

The small sample used within this study presents a limitation, and generalisability thus cannot be applied. Further research on this population is recommended to recruit a larger and more diverse sample of students employed in regulated clinical roles across Australia. Participant self-selection is also a limitation, as is the fact that the study was conducted pre-COVID and student experiences

Table 4
Mean (SD) of participants perceived levels of support provided by support bodies.

Supporting bodies	Mean (SD)
Your university	2.16 (1.17)
Your place of employment	3.94 (1.10)
Your line manager	3.92 (1.14)
Your work colleagues	4.16 (0.89)

Note. 1 = not at all supportive; 2 = somewhat supportive; 3 = moderately supportive; 4 = very supportive; 5 = extremely supportive; Question: "Working as a SIN/SIM, how would you rate the level of support you receive from..."

would likely have differed given the substantial changes to hospital environments as a result of the pandemic. The descriptive, cross-sectional nature of the study, and use of self-report data are also acknowledged as limitations.

6. Conclusion

This study has indicated that paid work undertaken by undergraduate nursing and midwifery students in NQ hospitals contributes to the development of their knowledge, skills, confidence and socialisation to professional practice and the Australian Professional Standards. Further, the authors note that further research into the relationships between undergraduate university study and learning undertaken during paid employment in clinical environments is required. Development of models of practice reflective of the variety of clinical contexts in which these roles are situated, together with dedicated scopes of practice for SIN/SIMs in Queensland, is worthy of investigation. University recognition of those undertaking SIN/SIM roles should also be considered. Finally, at the national level, there is further work to be done to formally recognise and regulate the SIN/SIM role and its state/territory-based equivalents, with the potential for roles to be registered with and regulated by the AHPRA.

CRedit authorship contribution statement

Tracey Ahern: Conceptualization, Methodology, Investigation, Writing – Original draft, Writing – review & editing. **Madelyn Pardon:** Conceptualization, Methodology, Formal analysis, Investigation, Writing – Original draft, Writing – review & editing. **David Lindsay:** Supervision, Project administration, Funding acquisition, Conceptualization, Methodology, Investigation, Writing – Original draft. **Marie McAuliffe:** Conceptualization, Methodology, Investigation, Writing – review & editing.

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Ethical statement

Ethical approval was granted through the James Cook University Human Research Ethics Committee, ethics approval number H7375.

Conflict of interest

There are no conflicts of interest to report.

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